The background of the entire page is a photograph of several JST connectors. In the foreground, a black plastic connector with a row of gold-plated pins is visible. Behind it, several other similar connectors are stacked or arranged in a way that creates a sense of depth. A semi-transparent green rectangular box is overlaid on the center of the image, containing the product guide title.

# PRODUCT GUIDE 2023-2024

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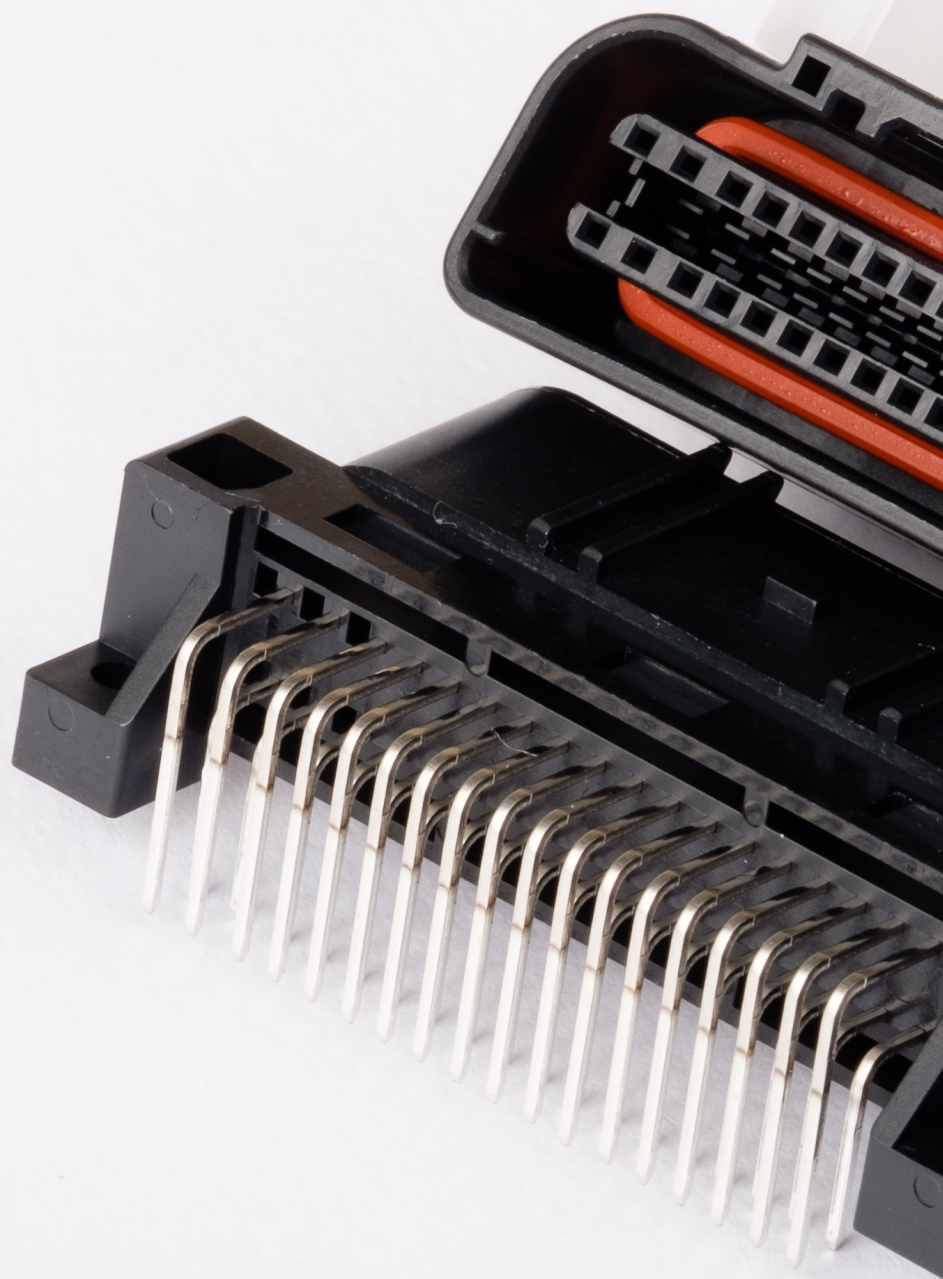
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# CONNECTORS









# CHAPTER 1

## WTB

### CRIMP STYLE

### CONNECTORS



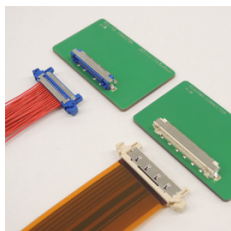
### FWG WTB

*0.5 mm pitch*

Type: Space saving

Current rating: 0.3A

Voltage rating: 50V



This is crimp style disconnectable connector with 0.5 mm pitch lock for high-speed transmission which can be chosen discrete wires, FPC or FFC depending on usage.

By assuming the use of multiple pieces of connector in the vicinity, prevention of mis-mating is provided by 4 kinds of key pattern in each circuit and 4 different colors of housing.

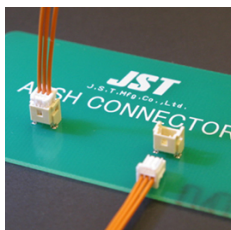
### APSH

*1 mm pitch*

Type: Secure locking device

Current rating: 1A (AWG#28)

Voltage rating: 50V



This connector has the secure locking structure by realizing space saving.

It prevents to come off the housing when handling the wire and giving vibration.

This connector is very small and it has been controlled inverse insertion and realized clear insertion feeling.

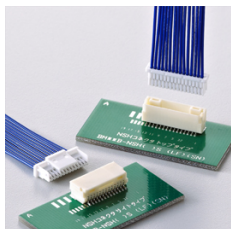
### NSH

*1 mm pitch*

Type: Secure locking device, crimp style & disconnectable

Current rating: 1A (AWG#28)

Voltage rating: 50V



1.0mm pitch secure lock type connector.

This low insertion force type connector realizes easier mating operation.

The basic concept of the contact part of this connector is equivalent to the performance proven SHL connector.

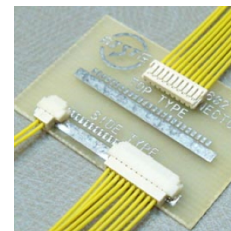
### SUH

*0.8 mm pitch*

Type: Compact & disconnectable

Current rating: 1A

Voltage rating: 30V



SUR connector that has been designed for 0.8mm pitch wire-to-board IDC.

This connector adopted the first crimping method in a minimum 0.8mm pitch of the wire-to-board type connector.

Housing lance method provides the good workability and a constriction contact method provides the excellent contact reliability.

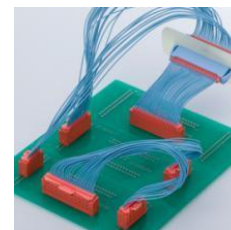
### CSH

*1 mm pitch*

Type: Disconnectable

Current rating: CSH, CS/2A

Voltage rating: 50V



Housing lances.

Interchangeability.

Realized current rating of 2A with AWG#26.

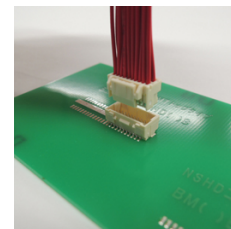
### NSHD

*1 mm pitch*

Type: Secure locking device, crimp style & disconnectable

Current rating: 1.0A

Voltage rating: 50V



This is a board-to-wire connector with secure locking specification, which achieved excellent workability and withstanding external force. Realize industry-leading space-saving, 1.0 mm pitch dual-row, and support a high densification of equipment.



### SH

*1 mm pitch*

Type: Compact & disconnectable

Current rating: 1A

Voltage rating: 50V



Compact, low profile design.

Although this shrouded header has locking features for its mating receptacle, there are no holes in the header shroud that would adversely effect vacuum gripping equipment.

The receptacle has protrusions on both ends for an operator to disengage the receptacle from the header without holding the wires.

### SHD

*1 mm pitch*

Type: Compact & double-row

Current rating: 1A

Voltage rating: 50V



Compact, double-row design.

Although this shrouded header has locking features for its mating receptacle, there are no holes in the header shroud that would adversely effect vacuum gripping equipment.

The receptacle has protrusions on both ends for an operator to disengage the receptacle from the header without holding the wires.

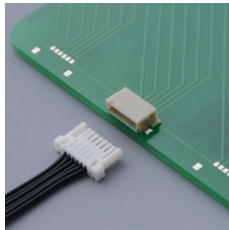
### SHJ

*1 mm pitch*

Type: Crimp & disconnectable

Current rating: 1A (AWG#28)

Voltage rating: 125V



This is a 1.0 mm pitch wire-to-board connector with secure lock mechanism on both sides.

SHJ connector is compact and space-saving design providing high reliability and are suitable for applications such as power supply of LED.

> Crimp style

> For LCD back light lamps

> With securelocking device

### SHL

*1 mm pitch*

Type: Disconnectable & thin type

Current rating: 1A (AWG#28)

Voltage rating: 50V



This is an ultra-thin 1.0 mm pitch wire-to-board connector for thinner and smaller devices, with a mounting height of 1.8 mm for the normal type and 1.4 mm for the offset type.

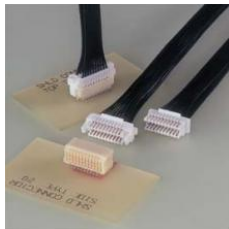
### SHLD

*1 mm pitch*

Type: Compact & double-row

Current rating: 1A (AWG#28)

Voltage rating: 50V



Compact, double-row design.

Mounting height is 5.5mm for side entry type. Just fitting to the high density packaging.

Line-up the type with Secure locking device.

Secure locking device prevents accidental disconnection.

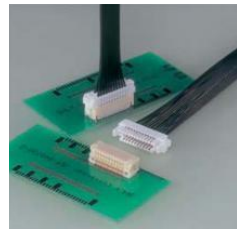
### SHLV

*1 mm pitch*

Type: for LVDS & double-row

Current rating: 1A

Voltage rating: 30V



This is a wire-to-board connector for LVDS (Low Voltage Differential Signaling) interfaces inside digital display devices such as liquid crystal monitors and flat-screen TVs, which has excellent workability and robustness.

It can also be used in general circuits as multi-circuit connector with compact and space-saving.

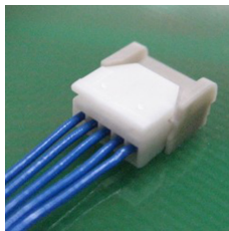
### SFG

*1.1 mm pitch*

Type: For LCD back light lamps

Current rating: 1A (AWG#28)

Voltage rating: 200V



This SFG connector is a wire-to-board connector compatible with small space.

It is used for power supply of LED backlight in Liquid Crystal Display Television set.

> Crimp style

> With secure locking device

### ACH

*1.2 mm pitch*

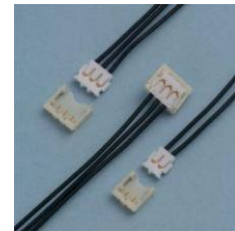
Type: Compact & disconnectable

Current rating:

2A / 1 to 3 circuits (AWG#28)

1.5A / 4-5 circuits (AWG#28)

Voltage rating: 50V



This connector is compact and low profile type, height: 1.4mm and width 4.3mm, 1.2mm pitch wire-to-board connector.

> Crimp style

> Low profile type

### ACHF

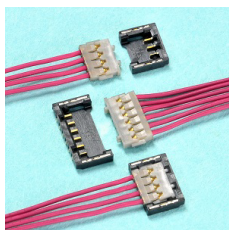
*1.2 mm pitch*

Type: Compact & disconnectable

Current rating: 2A (AWG#28)

(4, 6 : 1A)

Voltage rating: 50V



This ACHF connector is compact and low profile type, height 1.43mm and width 4.95mm, 1.2 pitch wire-to-board connector.

> Crimp style

> Low-profile type

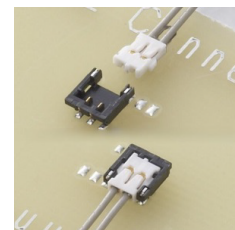
### ACHL

*1.2 mm pitch*

Type: Compact & disconnectable

Current rating: 2A (AWG#28)

Voltage rating: 50V



This connector is compact and low profile type, height 1.2mm and width 4.7mm, 1.2mm pitch wire-to-board connector.

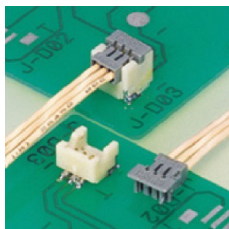
### AGH

*1.25 mm pitch*

Type: Disconnectable

Current rating: 1A

Voltage rating: 50V



This connector system has excellent operational advantages due to its top entry style. In addition, with the wires on the side, it is low profile, similar to a side entry style.

> For mobile phones

> For a battery connection

### GERD

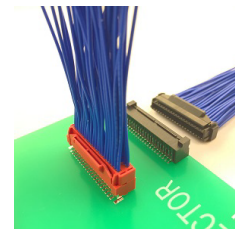
*1.25 mm pitch*

Type: Disconnectable

Current rating: 1.5A (AWG#26)

1.0A (AWG#28) / 0.8A (AWG#30)

Voltage rating: 50V



In order to correspond to the high-density PCB designing, this connector is designed as 1.25 mm pitch Dual row type connector.

The full lineup of 10 to 40 circuits for top and side entry types is provided. Its operability is very well, despite the small size connector with tin-plated.

> With secure locking device

### GEZ

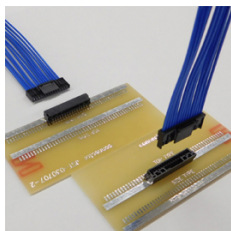
*1.25 mm pitch*

Type: Crimp & disconnectable

Current rating: 1.5A (AWG#26)

1A (AWG#28) / 0.8A (AWG#30)

Voltage rating: 50V



GEZ connector has been developed for market of Pachislot & Pachinko Machine.

This connector contact is interchangeable with the Dual row type GEZD connector, and this low insertion force type contact enables connector mating operation easier.

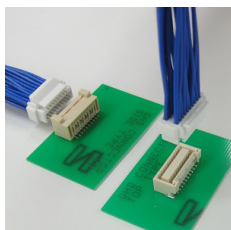
### GHD GOLD PLATED

*1.25 mm pitch*

Type: With secure locking device

Current rating: 1A (AWG#26)

Voltage rating: 50V



To meet the requirement of the high density mounting on PC board of flat panel TV, AV equipments etc., this connector is designed to the double-row type of 1.25mm pitch.

Its operability is very well, in spite of the small size.

> Double-row

> Disconnectable & crimp style

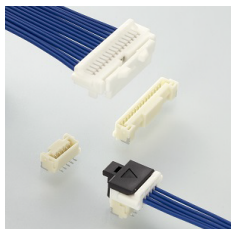
### GVH

*1.25 mm pitch*

Type: With secure locking device

Current rating: 1A (AWG#26)

Voltage rating: 50V



This connector has the sucking area on the top of connector without suction tape.

The side feed type for drawing out the wire laterally that considers the workability of mating and normal side entry type has been developed.

> Crimp style

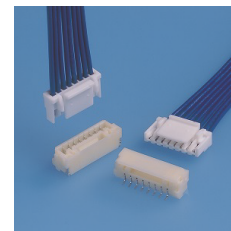
### GH

*1.25 mm pitch*

Type: With secure locking device

Current rating: 1A (AWG#26)

Voltage rating: 50V



Developed for to PDP, LCD or small electronics equipments.

This low insertion force type connector realizes easier mating operation.

The basic concept of the contact part of this connector is equivalent to the performance proven SHL connector.

> Crimp style

### GHD TIN PLATED

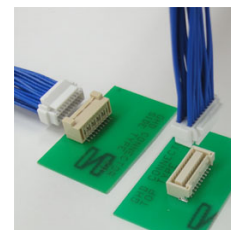
*1.25 mm pitch*

Type: With secure locking device

Current rating: 1.25A (AWG#26)

1.0A (AWG#28) / 0.8A (AWG#30)

Voltage rating: 50V



To correspond to the various high-density PCB designing, this GHD connector is designed as 1.25mm pitch double row type connector.

Provide a full lineup of 10 to 40 circuits for top and side entry types. (8 circuits is currently planned.)

Its operability is very well, in spite of the small size with tin-plated.

### ADH

*1.3 mm pitch*

Type: Compact & disconnectable

Current rating: 3A (Apply only 1A for the 3<sup>rd</sup> circuit of 5-circuits) (AWG#26)

Voltage rating: 30V



This ADH connector is compact and low profile type, height 1.9mm and width 4.3mm, 1.3 pitch wire-to-board connector.

> Crimp style

> Low-profile type



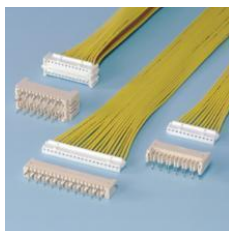
### CZH/CZHW

*1.5 mm pitch*

Type: Compact & disconnectable

Current rating: 2A (AWG#26)

Voltage rating: 100V



These are the crimp type sockets that share the 1.5 mm pitch insulation displacement type CZ/CZW connectors Header and the holder with dual-row socket.

More complicated harness can be designed with these sockets.

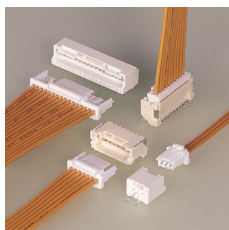
### ZE

*1.5 mm pitch*

Type: With secure locking device

Current rating: 2A (AWG#24)

Voltage rating: 100V



1.5mm pitch secure lock type connector.

Fork-shaped header contact provides the good mating feeling and secure mating operation.

> Crimp style

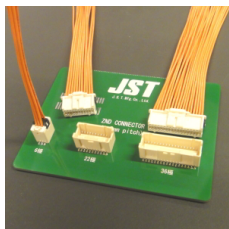
### ZND

*1.5 mm pitch*

Type: With secure locking device

Current rating: 2A (AWG#24)

Voltage rating: 100V



This is the potting treatment compatible type 1.5 mm pitch dual-row SMT mountable crimping connector with secure locking mechanism, corresponding to the high-density board design.

Excellent mating feeling is prepared, and it provides the certain mating operation.

> Crimp style

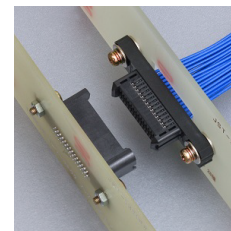
### RTZ

*1.5 mm pitch*

Type: Drawer & double-row

Current rating: 2A (AWG#24)

Voltage rating:



The RTZ connector is a drawer connector with floating mechanism which makes design of equipment easy.

Correspond to the miniaturization of equipment by realizing the downsizing and the space saving with 1.5 mm pitch dual-row and the distance of 19.9 mm at the minimum between board and panel.

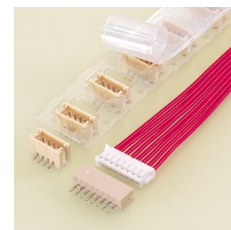
### ZH

*1.5 mm pitch*

Type: Compact & disconnectable

Current rating: 1A (AWG#26)

Voltage rating: 50V



Housing lances.

The dimple at the center of the contact ensures positive contact and low contact resistance at all times.

Fully shrouded header.

The same shrouded header can be used for the ZR insulation displacement connector.

> Crimp style

### ZPD

*1.5 mm pitch*

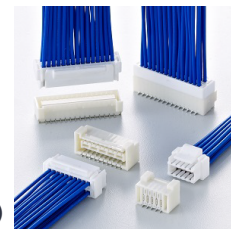
Type: With secure locking device

Current rating:

2A / 10 to 30 circuits (AWG#24)

1.5A / 32 to 40 circuits (AWG#24)

Voltage rating: 100V



This is a wire-to-board connector with 1.5 mm pitch, dual-row structure and secure lock mechanism for high-density board designs.

Low insertion force and good insertion feeling ensure reliable mating operations.

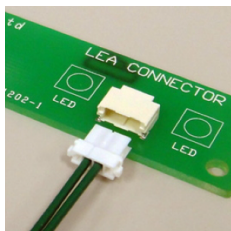
### LEA

*1.8 mm pitch*

Type: With secure locking device

Current rating: 3A

Voltage rating: 300V



Considering that the connector does not affect the luminescence angle of LED chip, this low profile type connector (height:3.0 mm) is designed for connection to LED lamp and realized space saving.

A secure locking mechanism is arranged to this connector in order to consider the handling of wire in actual use, although this is a low profile.

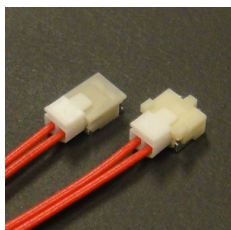
### SFK

*1.8 mm pitch*

Type: With secure locking device

Current rating: 4A (AWG#22)

Voltage rating: 350V



This SFK connector is a wire-to-board connector for connecting power supply and PCB and withstands high voltage.

It is used for power supply of LED backlight in Liquid Crystal Display Television set.

> Crimp style

### PA

*2 mm pitch*

Type: With secure locking device

Current rating: 3A (AWG#22)

Voltage rating:

Standard type 250V

Retainer mountable type 100V



This is a crimp type board-to-wire connector that is the core one of 2.0 mm pitch PA family connectors with secure locking device.

> Disconnectable

> Crimp style

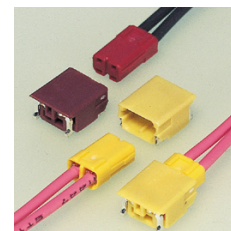
### SFH

*1.8 mm pitch*

Type: Compact & disconnectable

Current rating: 4A (AWG#22)

Voltage rating: 350V



This low profile type connector with height of 3.0mm is designed for connection to stroboscope flash and realized space saving.

> Crimp style

> Low-profile type

### JWPF WTB

*2 mm pitch*

Type: Waterproof & crimp style

Current rating: 3A (AWG#22)

Voltage rating: 100V



This is a 2.0 mm pitch wire-to-board connector with water ingress protection with an IPX7 rating per IEC 60529 (grade 7 per JIS C 0920), suitable for use for the place of which waterproof is required.

> Disconnectable type

### PA HIGH BOX TYPE

*2 mm pitch*

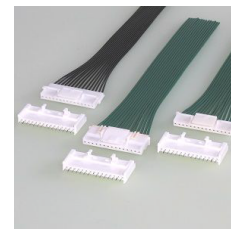
Type: Crimp & disconnectable

Current rating: 3A (AWG#22)

Voltage rating:

Standard type 250V

Retainer mountable type 100V



This is PA connector high-box type and also mates with PAF connector (socket) of insulation displacement type.

> High box type

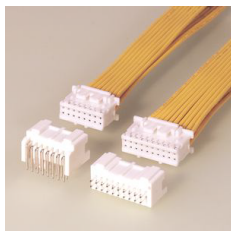
### PAD

*2 mm pitch*

Type: Crimp & disconnectable

Current rating: 3A (AWG#22)

Voltage rating: 250V



This is a 2.0 mm pitch, crimp style, dual-row structure, wire-to-board connector with lock.

- > Double-row
- > With secure locking device

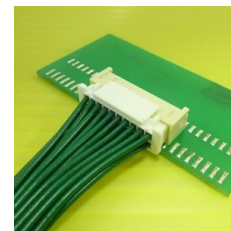
### PBD

*2 mm pitch*

Type: Crimp & disconnectable

Current rating: 3A

Voltage rating: 100V



- > Secure locking structure
- > Sucking area on header
- > High reliability contact
- > Side entry dual-row type
- > Applicator is interchangeable with those of the PHD connector contact
- > With secure locking device

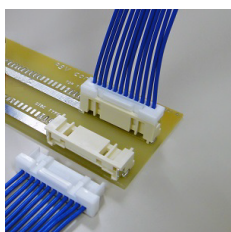
### PBV

*2 mm pitch*

Type: Crimp & disconnectable

Current rating: 2A (AWG#24)

Voltage rating: 100V



This PBV connector, which is mainly used for connecting PCB of flat television, is a crimping type connector and is designed to have a secure locking structure and a sucking area.

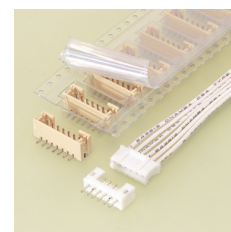
### PH

*2 mm pitch*

Type: Crimp & disconnectable

Current rating: 2A (AWG#24)

Voltage rating: 100V



It is designed to meet the demand for the high-density connection of internal wires to PC boards. It is compact, highly reliable and low in cost.

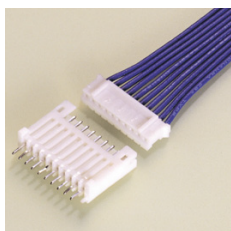
### PH HIGH BOX

*2 mm pitch*

Type: Crimp & disconnectable

Current rating: 2A (AWG#24)

Voltage rating: 100V



PH connector high box type, with 17 mm mounting height and with 4.5 mm thickness.

### PHD

*2 mm pitch*

Type: Crimp & disconnectable

Current rating: 3A (AWG#22)

Voltage rating: 250V



This is a 2.0 mm pitch board-to-wire connector with dual-row structure. In mounting height of 8.8 mm and depth of 5 mm, this connector realizes low profile and space-saving, and supports a compact and high densification of equipment.

- > Double-row



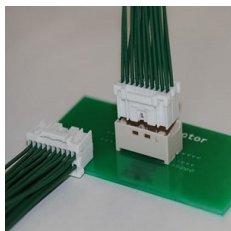
### PID

*2 mm pitch*

Type: Crimp style

Current rating: 3A (AWG#22)

Voltage rating: 250V



This PID is a 2.0mm pitch box type WTB connector with secure lock device, and it has the mechanism for detecting half mating, which is possible to judge electrically whether its state is the complete or incomplete mating by the circuit of detecting half mating provided at the center part of connector.

> Incomplete mating detection

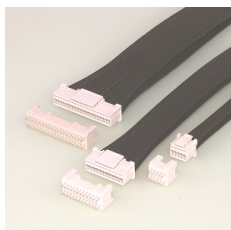
### PND

*2 mm pitch*

Type: Crimp & disconnectable

Current rating: 3A (AWG#22)

Voltage rating: 250V



This is a board-to-wire connector with secure locking specification, which achieved excellent workability and withstanding external force.

Realize 2.0 mm pitch dual-row, and support a high densification of equipment.

> With secure locking device

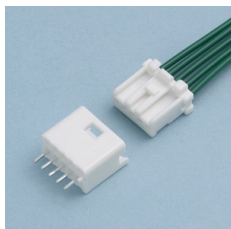
### PNI

*2 mm pitch*

Type: Crimp & compact

Current rating: 3A (AWG#22)

Voltage rating: 100V



This is a 2.0 mm pitch wire-to-board connector with a mechanism to prevent incomplete mating.

> With inertia force mechanism with secure locking device

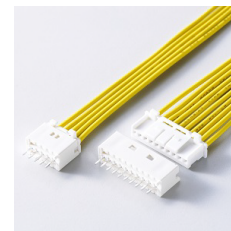
### PLI

*2 mm pitch*

Type: Crimp style

Current rating: 3A (AWG#22)

Voltage rating: 100V



This is a 2.0 mm pitch wire-to-board connector with a mechanism to prevent incomplete mating, and designed as low profile type connector with mounting height of 9.6 mm.

> Compact type

> With secure locking device

> Low-profile type

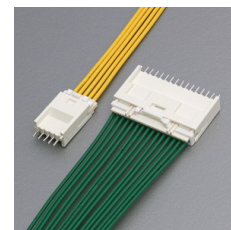
### PNI HIGH BOX

*2 mm pitch*

Type: Crimp & disconnectable

Current rating: 3A

Voltage rating: 100V



This is a board-to-wire connector with secure locking device that has been designed to 2 mm pitch high box type, with a mounting height of 19.95 mm (including retainer) and 6.65 mm in depth. Low insertion force type contact is adopted and it provides excellent operability.

Retainer is available as usage.

> With secure locking device

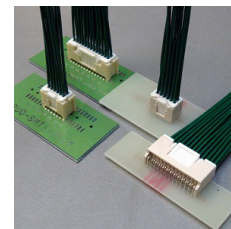
### PUD

*2 mm pitch*

Type: Crimp & disconnectable

Current rating: 3A (AWG#22)

Voltage rating: 250V



Connector with secure locking device, crimp style and double-row. With low insertion force, the table electric connection is demonstrated against the condition such as vibration, pinching and dry circuit. Possible to unfasten the locking even if the header is surrounded with a case wall within height of header because the tip of locking device in receptacle does not protrude from its area.

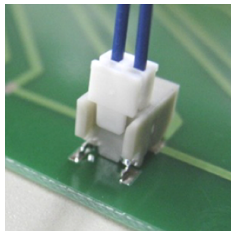
### SFV

*2 mm pitch*

Type: Crimp style

Current rating: 1A (AWG#28)

Voltage rating: 300V



This SFV connector is a wire-to-board connector for connecting power supply and PCB and withstands high voltage.

It is used for power supply of LED backlight in Liquid Crystal Display Television set.

> With secure locking device

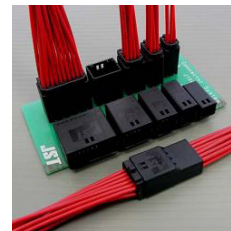
### JFA J1000 SERIES

*2.2 mm pitch*

Type: Crimp & interlock type

Current rating: 6.4A (AWG#18)

Voltage rating: 125V: J1100 series  
250V: J1800 series



Connectors for signal circuit or power supply circuit, applicable to the factory automation, heavy electric machinery, and other industrial equipment in general.

In spite of various kinds of housings available, their contacts are designed to be common.

The applicable tooling can be standardized.

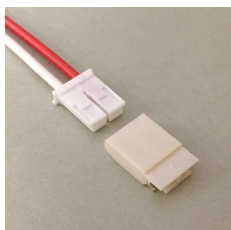
### BHL

*2.3 mm pitch*

Type: Compact & disconnectable

Current rating: 1A (AWG#24)

Voltage rating: 1400V



This is wire-to-board connector for LCD backlight power supply.

The board occupied area is smaller than our BHS connector designed for the same purpose, and the mounting height is 13% lower than the BHS, achieving 2.8 mm.

> Low profile

> For LCD back light lamps

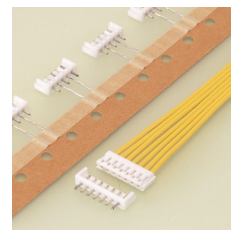
### EH

*2.5 mm pitch*

Type: Crimp & disconnectable

Current rating: 3A (AWG#22)

Voltage rating: 250V



It is designed to meet the demand for the high-density connection of internal wires to PC boards.

> Tin type

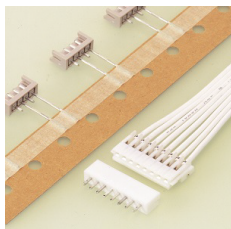
### HR

*2.5 mm pitch*

Type: Crimp & disconnectable

Current rating: 3A (AWG#22)

Voltage rating: 250V



The dimple in the contact ensures positive contact. The same header can be used for either the HR insulation.

displacement connector or the EH crimp style connector.

> Thin design

### JFA J2000 SERIES

*2.5 mm pitch*

Type: Crimp & disconnectable

Current rating: Max 4.6A  
(3 circuits / AWG#20)

Voltage rating: 250V



Connectors for miniaturization of electronic equipment.

Center locking and side locking options can be used depending on the required application.

Receptacle are designed to be common with all JFA connector J2000 series.

### LEX

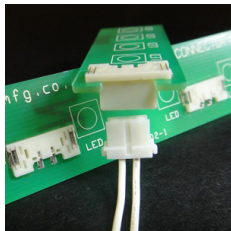
*2.5 mm pitch*

Type: Crimp & disconnectable

Current rating: 3A (AWG#22)

Voltage rating: 300V

Designed as low profile bottom type connector for LED lighting equipment, and achieves the space saving at the connector mounting side. With connector mating operation, secure lock and mechanism for preventing wrong insertion are provided. The load may be applied to the soldering part when mating the connector, the strength of soldering part after mounting the connector on PCB has been largely improved.



### NH

*2.5 mm pitch*

Type: Crimp & disconnectable

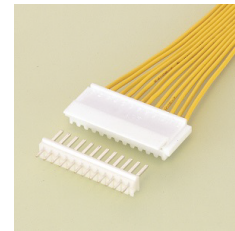
Current rating: 3A (AWG#22)

Voltage rating: 250V

This is a 2.5 mm pitch connector for connecting PCB and wires, and consists of a contact, housing and header.

There are three types of Header: top, side and bottom entry types, which allow wires to be drawn up, down, or parallel to the PCB by combining them.

> With secure locking device



### PXA

*2.5 mm pitch*

Type: Crimp & disconnectable

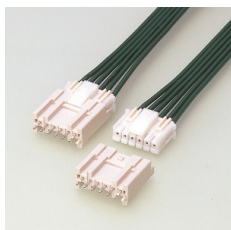
Current rating: 3A (AWG#22)

Voltage rating: 250V

Secondary retainer mountable 2.5mm pitch high-box type, with 20.5mm mounting height.

Fully shrouded header has the walls between every circuit to consider as the structure against vibration or prying.

> With secure locking device



### XA HIGH BOX

*2.5 mm pitch*

Type: Crimp & disconnectable

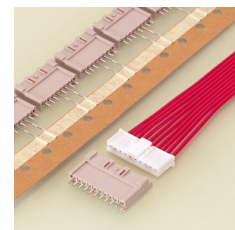
Current rating: 3A (AWG#22)

Voltage rating: 250V

The header is tall and fully shrouded so as to prevent the resin used to coat the PCB coming into contact with the mating pins. Designed for use specifically with resin coated («potted») PCB.

> Header is designed to accept XA mating receptacles

> Secure locking device prevents accidental disconnection



### XA

*2.5 mm pitch*

Type: Crimp & disconnectable

Current rating: .3A (AWG#22#20)

Voltage rating: 250V

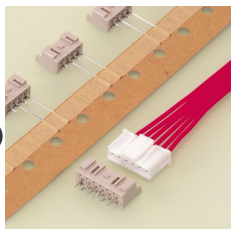
Secure locking device prevents accidental disconnection.

Header wafer is made of solder crack preventive material, glass-filled PA66 nylon.

Header pins are round and reflow-treated, which provides low insertion force.

Shrouded headers on radial-tape are also available.

Headers with polarizing bosses are also available.



### XAD

*2.5 mm pitch*

Type: Crimp & disconnectable

Current rating: 3A (AWG#20)

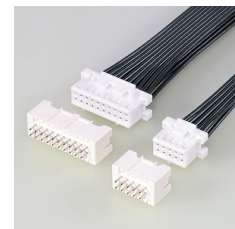
Voltage rating: 250V

Double-row construction.

Header wafer is made of solder crack preventive material, glass-filled PA66 nylon.

Secure locking device prevents accidental disconnection.

> With secure locking device





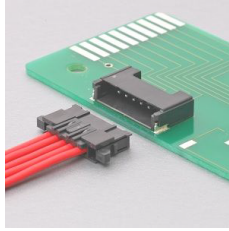
### XAG

*2.5 mm pitch*

Type: Crimp style

Current rating: 3A (AWG#20)

Voltage rating: 250V



This is a 2.5mm pitch, crimp style, wire-to-board connector.

> With secure locking device

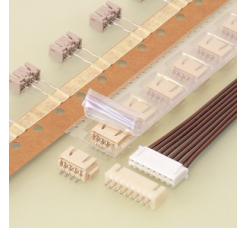
### XH

*2.5 mm pitch*

Type: Crimp & disconnectable

Current rating: 3A (AWG#22)

Voltage rating: 250V



This connector was developed based on the high reliability and versatility of our NH series connectors.

The connector is very small with mounting height of 9.8mm.

> Shrouded header type

### XH HIGH BOX

*2.5 mm pitch*

Type: Crimp & disconnectable

Current rating: 3A (AWG#22)

Voltage rating: 250V



The header is tall and fully shrouded so as to prevent the resin used to coat the PC board coming into contact with the mating pins. Designed for use specifically with resin coated («potted») PCB.

The header is a designed to accept XH mating receptacles.

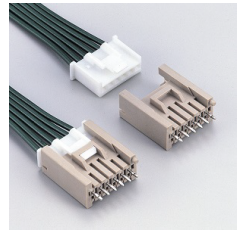
### XM HIGH BOX

*2.5 mm pitch*

Type: Crimp & disconnectable

Current rating: 3A (AWG#22#20)

Voltage rating: 250V



High-box type XM connector with 8.9mm depth and 2.0mm height after assembly.

> With inner type secure locking device

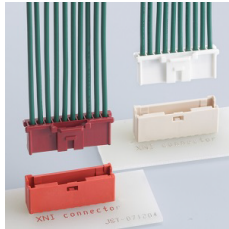
### XNI

*2.5 mm pitch*

Type: Crimp style

Current rating: 3A (AWG#22)

Voltage rating: 250V



This connector is 2.5mm pitch WTB connector that has a mechanism to prevent an incomplete mating by utilizing the inertial force when mating connector.

In all circuits of connector, controlled key for preventing mismatching of mating is added.

> With secure locking device

> Inertial lock structure

### RA CRIMP TYPE

*2.54 mm pitch*

Type: Crimp & disconnectable

Current rating: 1A (AWG#22)

Voltage rating: 300V



Crimp style receptacles that are designed to mate with headers conforming to MIL-C-83503.

> Housing lances

> The guide devices of both housing and header prevent reverse connector insertion

> I/O connector

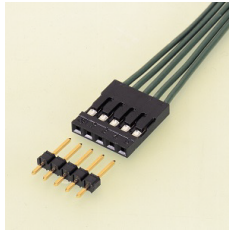
### RE

*2.54 mm pitch*

Type: Crimp & disconnectable

Current rating: 2A (5 circuits  
AWG#24)

Voltage rating: 250V



Well suited for completing the internal connections of office automation equipment, such as personal computers, office computers, and their peripheral devices.

Double-leaf spring contact withstands the stresses caused by repeated mating and unmating.

> Internal connection for OA equipments

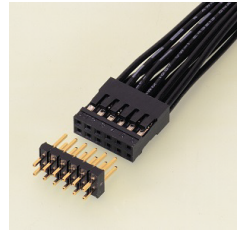
### RF

*2.54 mm pitch*

Type: Crimp & disconnectable

Current rating: 2A (AWG#24)

Voltage rating: 250V



Well suited for completing the internal connections of office automation equipment, such as personal computers, office computers, and their peripheral devices.

Double-leaf spring contact withstands the stresses caused by repeated mating and unmating.

> Internal connection for OA equipments

> Double row

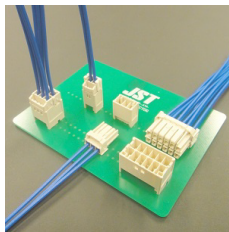
### BNI

*3.3 mm pitch*

Type: Inertial lock structure

Current rating: 4A (AWG#20)

Voltage rating: 300V



This is a 3.3 mm pitch wire-to-board connector with a mechanism to prevent incomplete mating. Three different key patterns per number of circuits in the same model are provided to prevent incorrect mating when multiple pieces of connector are used in close proximity.

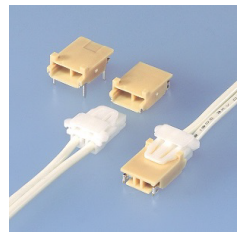
### BD

*3.5 mm pitch*

Type: Crimp & disconnectable

Current rating: 1A (AWG#24)

Voltage rating: 1400V



Board-to-wire connector with high withstanding voltage, used for power supply of LCD (Liquid Crystal Display) back light.

> For LCD back light lamps

> With secure locking device

### BHS

*3.5 mm pitch*

Type: Crimp & disconnectable

Current rating: 1A (AWG#24)

Voltage rating: 1400V



Low profile connectors with high withstanding voltage, designed for connecting liquid crystal display back light lamps to their starters.

Its crimp style contact can be inserted into the housing with little force, thus making them suitable for use with flexible wires such as those insulated with silicone rubber.

> SMT configuration / for LCD back light lamps

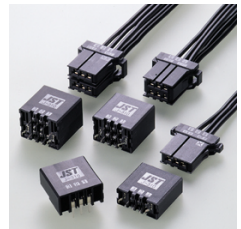
### JFA J300 SERIES

*3.81 mm pitch*

Type: Crimp & disconnectable

Current rating: 15A (Single  
circuit / AWG#14)

Voltage rating: 250V



Connectors for signal circuit or power supply circuit, applicable to the factory automation, heavy electric machinery, and other industrial equipment in general.

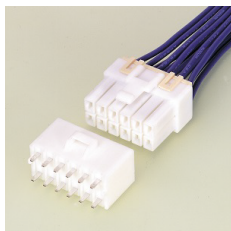
### HL

*3.96 mm pitch*

Type: Crimp & disconnectable

Current rating: 7A (4 circuits / AWG#18)

Voltage rating: 300V



The HL connectors can be used for WTW or WTB connections.

- > The inner-housing lock secures the plug to the receptacle and prevents accidental disconnection.
- > Secondary retainers (optional)
- > Shrouded header type
- > With inner type secure locking device

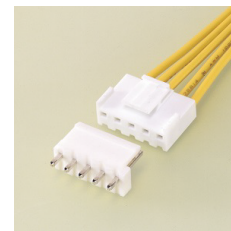
### VH

*3.96 mm pitch*

Type: Crimp & disconnectable

Current rating: 10A (AWG#16)

Voltage rating: 250V



This small, field-proven connector for PC boards is reliable and has a large current carrying capacity.

It can be used with a wide variety of signal, power supply, and output circuits that appear in consumer electronic products.

- > Compact type
- > With locking device

### VH HIGH BOX

*3.96 mm pitch*

Type: Crimp & disconnectable

Current rating: 7A & 10A

Voltage rating: 250V

The header is tall and fully shrouded so as to prevent the resin used to coat the PCB coming into contact with the mating pins. Designed for use specifically with resin coated («potted») PCB. The header is designed to accept VH mating receptacles. The housing has a lock mechanism which prevents the connector from coming loose due to vibration. The mechanism also prevents misinsertion.



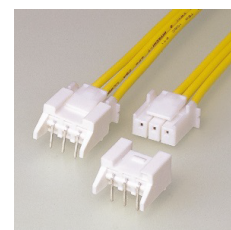
### VU

*3.96 mm pitch*

Type: With secure locking device

Current rating: 5A (AWG#18)

Voltage rating: 250V



VU connector is small type 3.96mm pitch PC board connector for large current and has the high reliability in a power supply circuit, considering the fully shrouded connector header structure against «vibrating connector» and «distorted extraction».

- > Crimp style & disconnectable

### BH

*4 mm pitch*

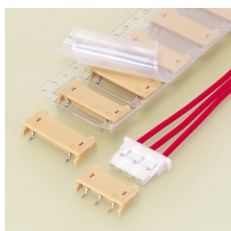
Type: Crimp & disconnectable

Current rating: 1A (AWG#22)

Voltage rating: 600V

Low profile connectors with high withstanding voltage, designed to connect liquid crystal display back light lamps to their starters. Its crimp style contact can be inserted into the housing with little force, thus making them suitable for use with flexible wires such as those insulated with silicone rubber.

- > SMT configuration
- > For LCD back light lamps



### JWPS

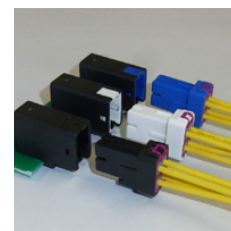
*4 mm pitch*

Type: Crimp & disconnectable

Current rating: 4A (AWG#22)

5A (AWG#20) / 6A (AWG#18)

Voltage rating: 300V



This JWPS connector can be used for the place of which especially waterproof is required.

This is the wire-to-board connector that is grade 7 ingress protection of JIS C 0920 (IPX7 of IEC 60529).

- > Waterproof connector



### PSI

*4 mm pitch*

Type: Secure locking device

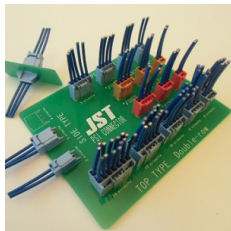
Current rating: 12A

Voltage rating: 300V

This connector is designed for WTB and WTW 4.0mm pitch.

Low insertion force type contact is adopted and it provides excellent operability.

It has the secure locking device that has the mechanism for preventing the inverse insertion. By adopting key shape and multi colors of housing, prevention function of mis-mating is considered.



### DV

*5 mm pitch*

Type: Crimp & disconnectable

Current rating: 5A (AWG#20)

Voltage rating: 250V



One position has a different pitch than the others. It provides the connector with polarization & prevents misinsertion. Each contact has two wiping areas which ensure stable and reliable connection.

- > With locking device
- > Polarization by pin arrangement
- > Two-point contact
- > Housing lances

### HYV

*5 mm pitch*

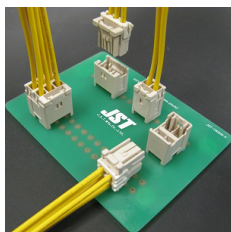
Type: Inertial lock structure

Current rating: 10A

Voltage rating: 300V

This is a 5.0 mm pitch WTB connector with a mechanism to prevent incomplete mating.

The box-shaped structure of the contacts, which prevents the influence of external force, enhances the safety of high-current circuit connections, and the four types of key patterns prevent incorrect mating when using more than one piece of the same circuit types in narrow areas.



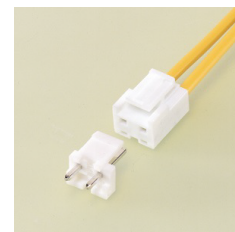
### NV

*5 mm pitch*

Type: Crimp & disconnectable

Current rating: 10A (AWG#16)

Voltage rating: 250V



Suitable for a wide range of applications, from low-voltage, low-current signal circuits to power supply circuits requiring large currents.

- > With locking device

### SV

*5 mm pitch*

Type: Crimp & disconnectable

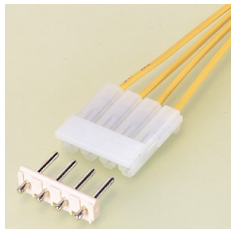
Current rating: 5A (AWG#20)

Voltage rating: 250V

The directional features of the housing prevent reverse contact insertion.

The housings with two or four circuits have locking mechanisms.

This feature provides polarization and prevents misinsertion.



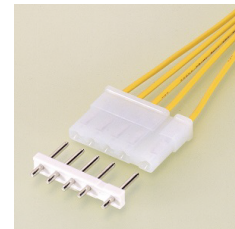
### V

*5 mm pitch*

Type: Crimp & disconnectable

Current rating: 5A (AWG#20)

Voltage rating: 250V



One position has a different pitch than the others. This provides the connector with polarization and prevents misinsertion.

Each contact has two wiping areas which ensure stable and reliable connection.

- > Two-point contact
- > Polarization by pin arrangement

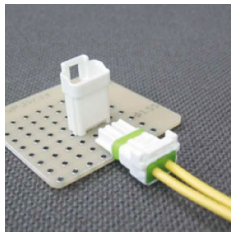
### WPJ

*5 mm pitch*

Type: Crimp & disconnectable

Current rating: 7A (AWG#18)

Voltage rating: 300V



Compact, Water Resist & Durable.

This connector for electrical connection can be used on both waterproof and non-waterproof conditions, depending on usage.

Just by placing a rubber part will change it into a water resistant connector.

Both conditions are using the same header.

### JFA J300 SERIES

*5.08 mm pitch*

Type: Crimp & disconnectable

Current rating: 15A (Single circuit / AWG#14)

Voltage rating: 600V



Connectors for signal circuit or power supply circuit, applicable to the factory automation, heavy electric machinery, and other industrial equipment in general.

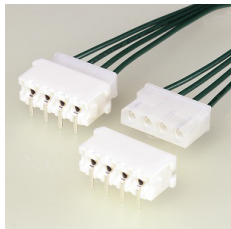
### LC-L

*5.08 mm pitch*

Type: Crimp & disconnectable

Current rating: 5A (AWG#20)

Voltage rating: 250V



This connector is for the secondary power circuit used in the office automation equipment, such as the 3.5inch HDD and MO, including the DVD.

> Secondary power supply for OA equipments

### XL

*5 mm pitch*

Type: Crimp & disconnectable

Current rating: 10A (2 circuits / AWG#16)

Voltage rating: 150V



This is a highly reliable board-to-wire connector developed based on the proven track record of VH connectors, which are already used in numerous electronic and electrical equipment such as home appliances, vending machines, and office machines.

> With locking device

### LC

*5.08 mm pitch*

Type: Crimp & disconnectable

Current rating: 7A (AWG#18)

Voltage rating: 250V



This connector is suited for bringing power to PCB in office automation equipment.

A major application has been in secondary power supply circuits of floppy disk drives.

The plug & header are polarized, thus preventing misinsertion of the connector.

> Secondary power supply for OA equipments

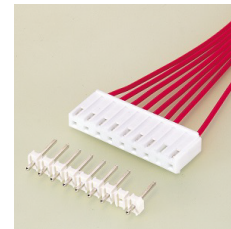
### VB

*5.08 mm pitch*

Type: Crimp & disconnectable

Current rating: 7A (AWG#18)

Voltage rating: 250V



This large current carrying capacity connector can be used with primary power supply circuits of consumer electronic products and various other circuits requiring large currents.

> Box-shaped contact

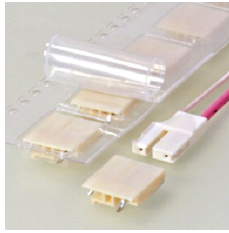
### BHT

*5.1 mm pitch*

Type: Crimp & disconnectable

Current rating: 1A (AWG#24)

Voltage rating: 1500V



Low profile connectors with high withstanding voltage, designed for connecting liquid crystal display back light lamps to their starters.

> For LCD back light lamps

> Low profile type

> Crimp style

### JFA J4000 SERIES

*6 mm pitch*

Type: Crimp & disconnectable

Current rating: 20A (3 circuits / AWG#12)

Voltage rating: 600V



Compact and high current capacity connector. This connector realizes high-density mounting on PCB.

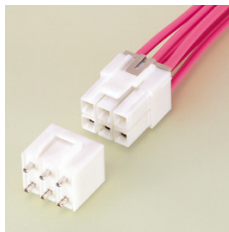
### VL

*6.2 mm pitch*

Type: Crimp & disconnectable

Current rating: 20A (AWG#12)

Voltage rating: 600V



This VL is a 6.2 mm pitch WTW and WTB connector, designed for large current.

Secondary retainer, which prevents from insufficient insertion of contact and coming off contact, may use and large current circuit can be connected certainly and safety.

> High current rating

> With inner type secure locking device

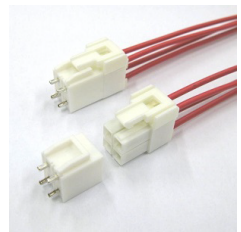
### VL HIGH CURRENT

*6.2 mm pitch*

Type: Crimp & disconnectable

Current rating: 23A (2 circuits / AWG#12)

Voltage rating: 600V



This VL is a 6.2 mm pitch WTB connector.

The connector suitable for the high current has been realized by using highly-conducting material.

> High current rating

### JFA J4000 SERIES

*6.35 mm pitch*

Type: Crimp & disconnectable

Current rating: 20A (3 circuits / AWG#12)

Voltage rating: 600V



Compact and high current capacity connector. This connector realizes high-density mounting on PCB.

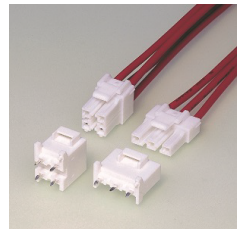
### VYH

*6.35 mm pitch*

Type: Crimp & disconnectable

Current rating: 15A (2 circuits / AWG#14)

Voltage rating: 300V



This VYH connector is designed for WTB 6.5 mm pitch connector corresponding to large current. Retainer, which prevents from insufficient insertion of contact and coming off contact, may use and large current circuit can be connected certainly and safely.

> High current rating



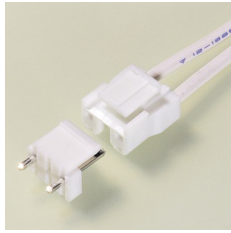
### VA

*7.92 mm pitch*

Type: Crimp & disconnectable

Current rating: 7A (AWG#18)

Voltage rating: 250V



This large current carrying capacity connector can be used with primary power supply circuits of consumer electronic products and various other circuits requiring large currents.

Compact connector (with a mounting height of 17.5mm ) with a large capacity (7A).

>With locking device

### VAJ

*7.92 mm pitch*

Type: Crimp & disconnectable

Current rating: 10A (AWG#16)

Voltage rating: 250V



7.92 mm pitch crimp style, large current carrying capacity connector, that is best suited for various kinds of power supply circuits.

Box-shaped contacts offer reliable connection.

> High current rating

> With locking device

### BH

*8 mm pitch*

Type: Crimp & disconnectable

Current rating: 1A (AWG#22)

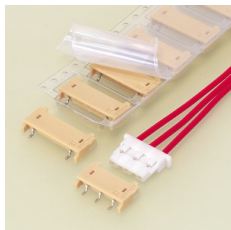
Voltage rating: 600V

Low profile connector with high withstanding voltage, designed to connect liquid crystal display back light lamps to their starters.

Its crimp style contact can be inserted into the housing with little force, thus making them suitable for use with flexible wires such as those insulated with silicone rubber.

> SMT configuration

> For LCD back light lamps



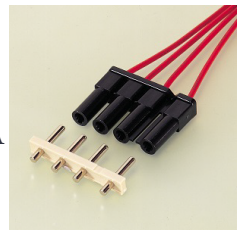
### LV

*8 mm pitch*

Type: Crimp & disconnectable

Current rating: Standard type 5A (AWG#20) Low insertion force type / 7A (AWG#18)

Voltage rating: 250V



This connector can be connected to headers having 2.36mm diameter pins.

The mating section of the contact has a triangular configuration so that the terminal grips the round mating pin at three points.

One position has a different pitch than the others.

### PSI HIGH CURRENT D TYPE

*8 mm pitch*

Type: Crimp style / High current

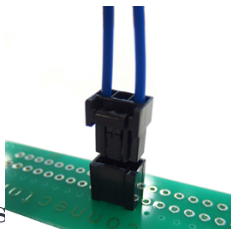
Current rating: 15A

Voltage rating: 600V

Low insertion force type contact is adopted and it provides excellent operability.

It has the secure locking device that has the mechanism for preventing the inverse insertion. It's suitable for the large electric current was realized by using highly-conducting material.

By adopting key shape and multi colors of housing, prevention function of mis-mating with conventional PSI connector is considered.



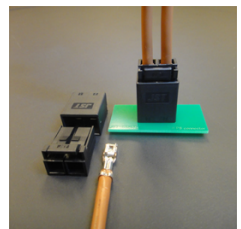
### JFPS

*8.8 mm pitch*

Type: Crimp & compact type

Current rating: 35A (2 circuits AWG#10)

Voltage rating: 600V



Small type connector for large current.

This connector corresponds the rated current of 35A at 2 circuits and is a top entry type board-to-wire connector.

> With secure locking device

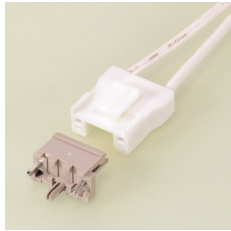
### VT

*11.88 mm pitch*

Type: Crimp & disconnectable

Current rating: 12A (AWG#16)

Voltage rating: 250V



Can be connected to vinyl insulated flat cables (as SPT, HVFF) ranging from AWG #20 to 16 which are used for primary sides of power circuits.

PCB locking device makes temporary mounting and correct positioning onto the board easy.

Misinsertion preventive construction and arm-lock mechanism.

> With locking device

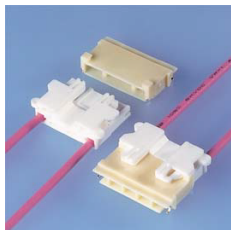
### BD

*13 mm pitch*

Type: Crimp & disconnectable

Current rating: 1A (AWG#24)

Voltage rating: 3000V



WTB crimping type connector with high withstanding voltage, used for power supply of large LCD (Liquid Crystal Display or Liquid Crystal Television) back light.

> For LCD back light lamps

> With secure locking device

### CN

Type: Crimp & disconnectable

Current rating: 1A (AWG#25)

Voltage rating: 250V



Connector for the GPS antenna system of the car navigation system.

The CN connector applies the unique crimping method to the shielding meshed wires, which will result in superior high-frequency characteristics.

> Coaxial connector

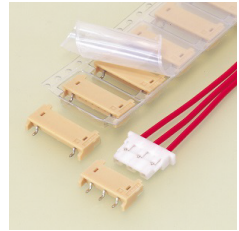
### BH

*12 mm pitch*

Type: Crimp & disconnectable

Current rating: 1A(AWG#22)

Voltage rating: 600V



Low profile connectors with high withstanding voltage, designed for connecting liquid crystal display back light lamps to their starters.

Its crimp style contact can be inserted into the housing with little force, thus making them suitable for use with flexible wires such as those insulated with silicone rubber.

> SMT configuration / For LCD back light lamps

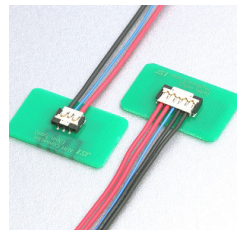
### AUH

Type: Crimp & disconnectable

Current rating: Power supply circuit / 5A (AWG#22)

Signal circuit / 1A

Voltage rating: 30V



This AUH connector is compact & low profile type, height 1.85mm & width 5.2mm, WTB connector. And also 5A in rating current was realized.

> Low profile type

> Compact type

### JFA FOR MOTOR

Type: Connector kit



### JFA METAL SHELL

Type: Crimp & disconnectable

Metal shell type I/O connector which contacts are used also with JFA connector J2000 series and J300 series.

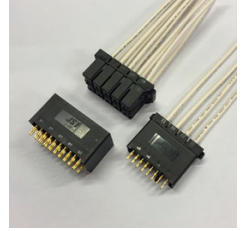


### JFA J-PF3 PRESS FIT TYPE

Type: Press fit & disconnectable

Current rating: 13A (4 circuits / AWG#14)

Voltage rating: 250V



Adopt high reliability press fit and enable solderless mounting.

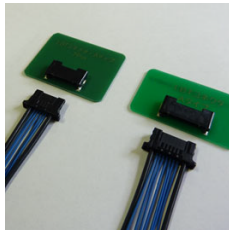
### LBT A TYPE

Type: Hybrid model WTB

Current rating: Power supply 7A (AWG#20) Signal circuit 0.5A (AWG#28)

Voltage rating: 50V

Made to connect the lithium polymer battery or DC-IN, and has the sequence structure for connection to the power supply circuit in preference to connection to the signal circuit by dividing the signal circuit and power supply circuit clearly. This low profile connector (space saving) applies high current by adopting the heat radiation structure.



### SDF

Type: Crimp & disconnectable

Current rating: 5A

This connector is used for 1.3 mm diameter and 1.0 mm square contacts.



### SMF

Type: Crimp & disconnectable

Current rating: 5A

For 1.0mm and 1.3mm diameter pins, having a funnel shaped lead-in to ease insertion and to ensure a balance with its high retaining force.

> Single circuit type



### SPF

Type: Crimp & disconnectable

Current rating: 5A

This connector is used with 2.36mm diameter GT pins.







# CHAPTER 2

## WTB CRIMP

### STYLE BOARD IN

### CONNECTORS

### SZN

*1.5 mm pitch*

Type: Board in / Crimp style

Current rating: 0.7A (AWG#26)

Voltage rating: 50V



This low-profile, board-in connector, with a mounting height of only 4.25mm and a thickness of 2.4mm, is soldered directly onto PCB.

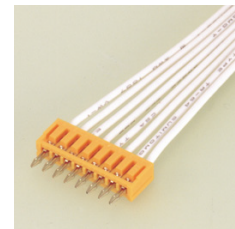
### SAN

*2 mm pitch*

Type: Board in / Crimp style

Current rating: 2A (AWG#24)

Voltage rating: 250V



This multi-circuit board-in connector meets the needs for high-density mounting on PCB efficiently and economically.

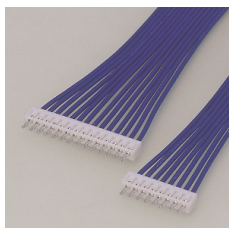
### SGN

*2 mm pitch*

Type: Board in / Crimp style

Current rating: 2A (AWG#24)

Voltage rating: 250V



A dimension of 2.0mm pitch, 4.0mm mounting height and 2.9mm depth. This board-in type connector will enhance the mounting density of the PCB even further as well as improve rationalization and reduce the total cost of production. This product will be suitable for the internal connector of low profile equipment, such as audio equipment (including car audio) and the STB.

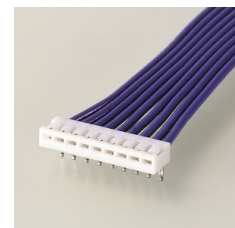
### SJN

*2 mm pitch*

Type: Board in / Crimp style

Current rating: 3A (AWG#22)

Voltage rating: 250V



Side entry type board-in connector, with a mounting height of only 2.8mm and a thickness of 4.9mm.

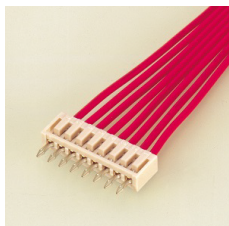
### SCN

*2.5 mm pitch*

Type: Board in / Crimp style

Current rating: 3A (AWG#22)

Voltage rating: 250V



This multi-circuit board-in connector meets the needs for high-density mounting on PC boards efficiently and economically.

### SDN

*3.96 mm pitch*

Type: Board in / Crimp style

Current rating: 7A (AWG#18)

Voltage rating: 250V



This board-in connector is capable of connecting a wide variety of circuits including signal and power supply circuits.

The connector features a slim, low-profile design.



# WTB BOARD IN CRIMP STYLE CONNECTORS

SIN

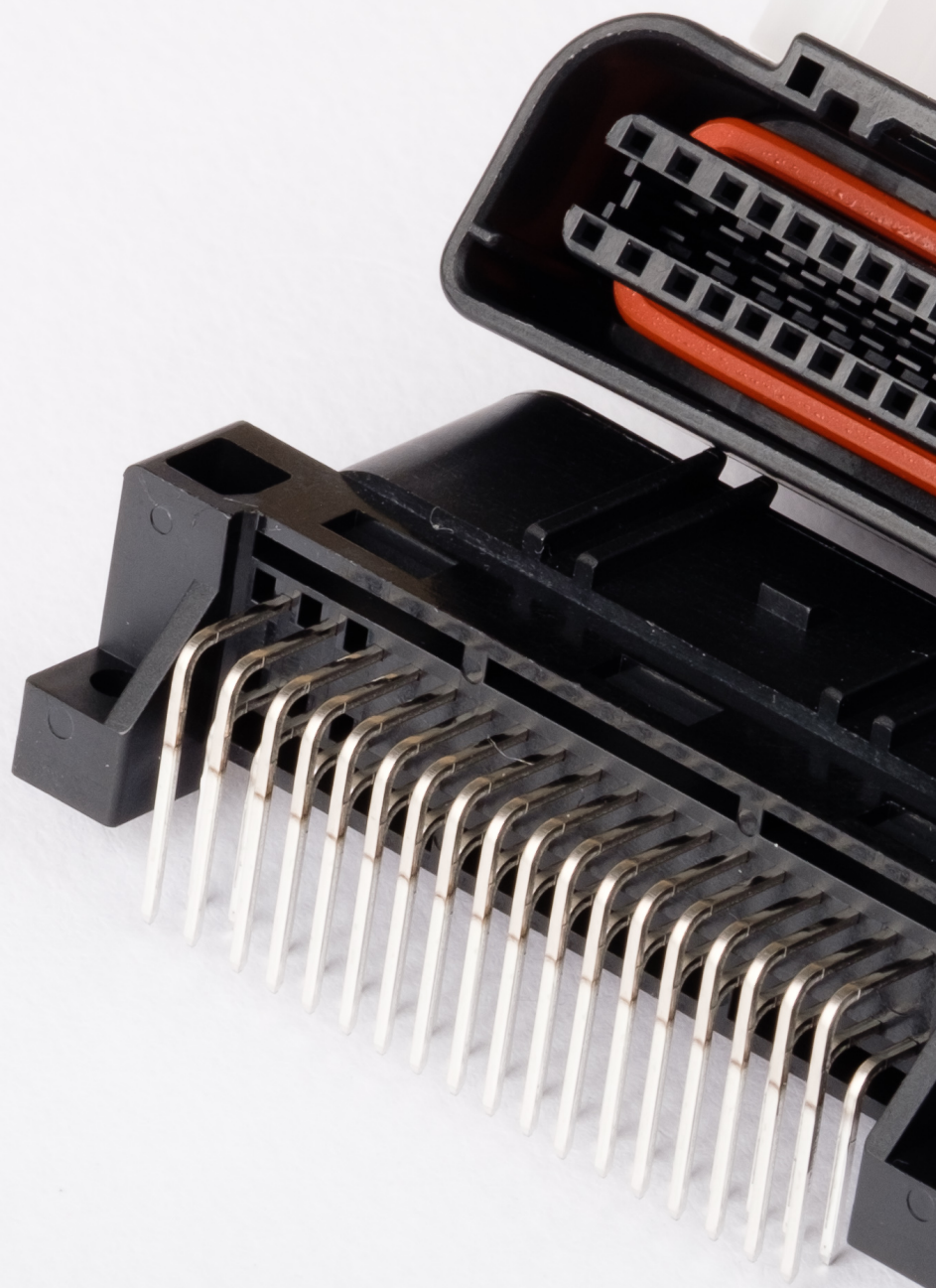
Type: Board in / Crimp style

Current rating: Depends of wires



These are a diverse set of single  
-pole board-in-connectors to which a wide range of  
AWG #30 to #10 wires can be applied.







# CHAPTER 3

## WTB INSULATION DISPLACEMENT CONNECTORS



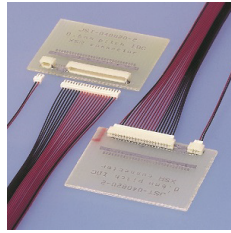
## XSR

*0.6 mm pitch*

Type: IDC & disconnectable

Current rating: 0.2A

Voltage rating: 30V



This is the world's smallest 0.6mm pitch IDC connector for discrete wires.

This wire-to-board miniaturised connector has a mounting height of 1.45mm and depth of 3.0mm.

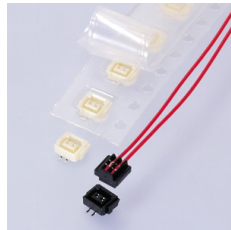
## ASR

*1 mm pitch*

Type: IDC & disconnectable

Current rating: 0.7A

Voltage rating: 50V



- > Ultra-compact
- > Twin U-slot ID section
- > Header is designed for vacuum pick and place robotics
- > Top entry & Wire side-feed type

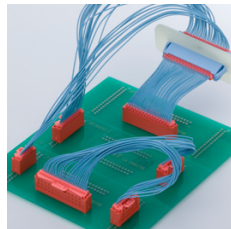
## CSR

*1 mm pitch*

Type: IDC & disconnectable

Current rating: CSR, CS/1.8A (AWG#27)

Voltage rating: 50V



This is a 1.0mm pitch IDC with the secure locking structure to prevent coming off the connector and incomplete mating. 1.8A in rated current was realized by using AWG#27.

The various wide usage can be provided, since multi-IDC-harnesses by automatic IDC machine, crimping type, and header for wire to wire connection are available.

## SUR

*0.8 mm pitch*

Type: IDC & disconnectable

Current rating: 0.5A (AWG#32)  
0.2A (AWG#36)

Voltage rating: 30V



The world's first 0.8mm pitch wire-to-board insulation displacement connector.

Although this shrouded header has locking features for its mating receptacle, there are no holes in the header shroud that would adversely effect vacuum gripping equipment.

- > Compact & Low profile type

## CS

*1 mm pitch*

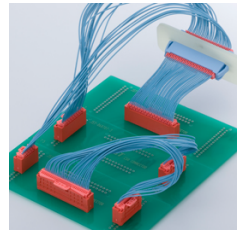
Type: IDC & disconnectable

Current rating:

CSR, CS/1.8A (AWG#27)

CSH, CS/2A (AWG#26)

Voltage rating: 50V



- > Secure locking structure
- > Realization of multi-circuits by low insertion force
- > Countermeasure for unexpected prying insertion

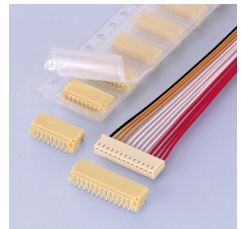
## SR / SZ

*1 mm pitch*

Type: IDC & disconnectable

Current rating: 0.7A

Voltage rating: 50V



Although this shrouded header has locking features for its mating receptacle, there are no holes in the header shroud that would adversely effect vacuum gripping equipment.

The same shrouded header can be used for the SH crimp style connector.

- > Compact design
- > Twin U-slot ID section



## SSR

*1 mm pitch*

Type: IDC & disconnectable

Current rating: 0.5A

Voltage rating: 50V



Although this shrouded header has locking features for its mating receptacle, there are no holes in the header shroud that would adversely effect vacuum gripping equipment.

> Twin U-slot ID section

> Compact design & Low profile type

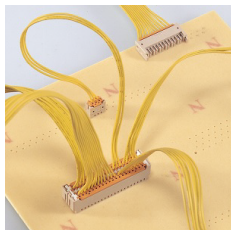
## CZ / CZW

*1.5 mm pitch*

Type: IDC & disconnectable

Current rating: 2A (AWG#26)

Voltage rating: 100V



1.5 mm pitch insulation displacement type CZ connector, holder for making that socket connector in dual-row, and the variety of header for them can support rationalization of manufacturing the complicated harnesses and high density of mounting on PCB.

> Space saving mountable

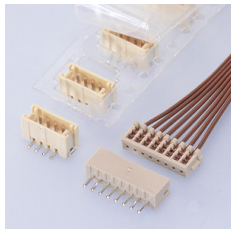
## ZR

*1.5 mm pitch*

Type: IDC & disconnectable

Current rating: 0.7A (AWG#28)

Voltage rating: 50V



The same shrouded header can be used for the ZH crimp style connector.

> Twin U-slot ID section

> Fully shrouded header

> Compact

## GX

*1.25 mm pitch*

Type: IDC & compact type

Current rating: 2A (AWG#26)

Voltage rating: 50V

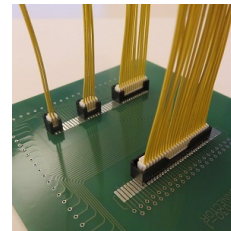
Narrow pitch (1.25 mm)

compatible with AWG # 26 (UL10272/11079).

SMT that promotes automation without suction tape.

Low insertion force type is adopted focusing on workability.

This connector has the lever type friction lock to prevent incomplete insertion by click feeling when inserting.



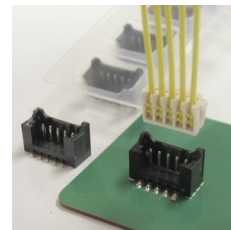
## CZF

*1.5 mm pitch*

Type: Disconnectable

Current rating: 2A (AWG#26)

Voltage rating: 100V



The SMT top entry type headers that can be mated with the 1.5mm pitch CZ connector socket are on the lineup.

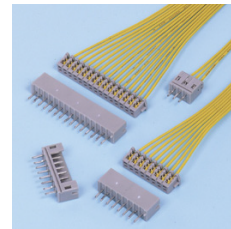
## CK

*2 mm pitch*

Type: IDC & disconnectable

Current rating: 2A (AWG#26)

Voltage rating: 100V



Multi-harness of CK connector(2.0mm) and CZ connector(1.5mm) combination has been realized.

> Low profile type

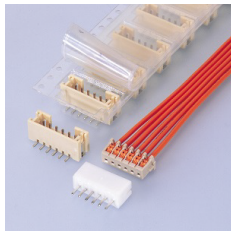
## CR

*2 mm pitch*

Type: IDC & disconnectable

Current rating: 1A

Voltage rating: 100V



This connector is suitable for interconnection of UL1007 electric wires in a wide range of electrical and electronic equipment such as TVs.

The same shrouded header can be used for the KR/KRD IDC or the PH crimp style connector.

> Folded beam double-leaf contact construction

> Twin U-slot ID section

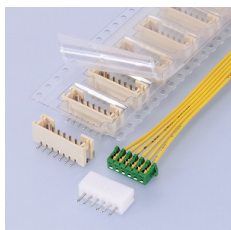
## KR

*2 mm pitch*

Type: IDC & disconnectable

Current rating: 1A (AWG#26)

Voltage rating: 100V



The same shrouded header can be used for the CR/KRD insulation displacement connectors or the PH crimp style connector.

> Folded beam double-leaf contact construction

> Twin U-slot ID section

> Low-profile type

## KRW

*2 mm pitch*

Type: IDC & disconnectable

Current rating: 1A (AWG#26)

Voltage rating: 100V

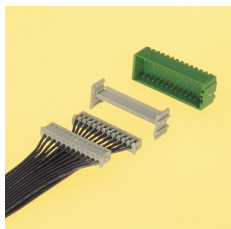
KRW connector allows dual-row

WTB connection using either the KR or PHN connectors.

> Multi-IDC-harnesses are possible.

> Various types of connectors

In addition to the KRW, KR, PHN and TR connectors, there are other 2.0mm pitch connectors available such as the KRD, CR, DA, DD and DS ranges.



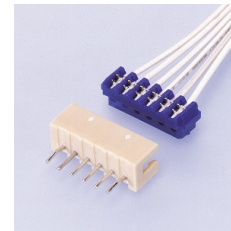
## DR

*2 mm pitch*

Type: IDC & disconnectable

Current rating: 1A (AWG#26)

Voltage rating: 100V



With a mounting height of 5.0 mm and a thickness of 4.8 mm (top entry type), it is the industry-leading space-saving 2.0 mm pitch mating type wire-to-board connector.

> Space saving mountable

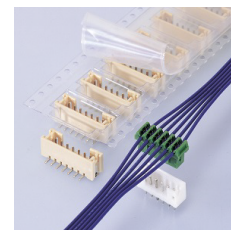
## KRD

*2 mm pitch*

Type: IDC & disconnectable

Current rating: 1A (AWG#26)

Voltage rating: 100V



The KRD connector allows 'daisy chain connections' or 'through connections', with these simple connections, many signals can be bussed to many different PC boards.

> The same shrouded header can be used for the CR/KR IDC of the PH crimp style connectors

> Twin U-slot ID section & fully shrouded header

> Daisy chain connection

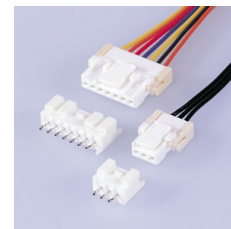
## PAF

*2 mm pitch*

Type: IDC & disconnectable

Current rating: 1A (AWG#26)

Voltage rating: 100V



This is the first versatile IDC with secure locking device for consumer appliance in the industry.

It is one of the 2.0 mm pitch PA family connectors with secure locking device.

The header is shared with the PA connector, and also mates with the WTW PAL connector.

> With secure locking device

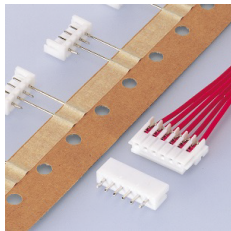
### HR

*2.5 mm pitch*

Type: IDC & disconnectable

Current rating: 2A (AWG#24)

Voltage rating: 250V



The same shrouded header can be used for the EH or HR crimp style connector.

> Thin design

> Twin U-slot ID section

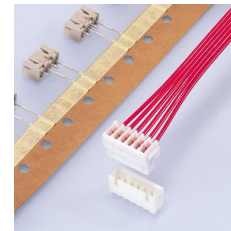
### NR

*mm pitch*

Type: IDC & disconnectable

Current rating: 2A (AWG#24)

Voltage rating: 250V



The same shrouded header can be used for the XH crimp style connector, the NRD and the BR insulation displacement connectors, and the JQ BTB connector.

> Top entry

> Wire side-feed type

> Twin U-slot ID section

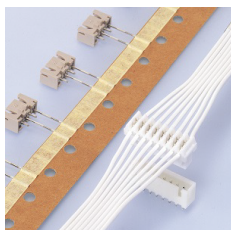
### NRD

*2.5 mm pitch*

Type: IDC & disconnectable

Current rating: 2A (AWG#24)

Voltage rating: 250V



It allows 'daisy chain connections' or 'through connections', with these simple connections, many signals can be bussed to many different PCB.

The same shrouded header can be used for the XH crimp style connector, the NR and the BR iIDC, and the JQ BTB connector.

> Twin U-slot ID section

> Fully shrouded header

### XAF

*2.5 mm pitch*

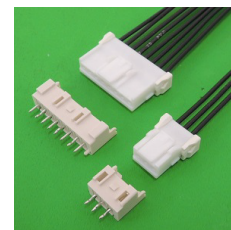
Type: IDC & disconnectable

Current rating: 3A (AWG#22)

Voltage rating: 150V

XAF connector is an IDC socket which is compatible with the existing XA crimp housing (plug housing).

The dipping type, SMT type, and high box type headers or the receptacle housings used for WTW connection can be prepared as the mated counterpart of XAF connector, and the wide range of connection style can be provided depending on the application.



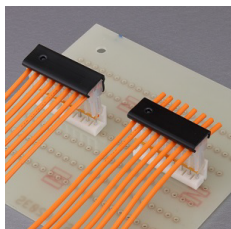
### VR

*1 mm pitch*

Type: IDC & disconnectable

Current rating: 7A (AWG#18)

Voltage rating: 250V



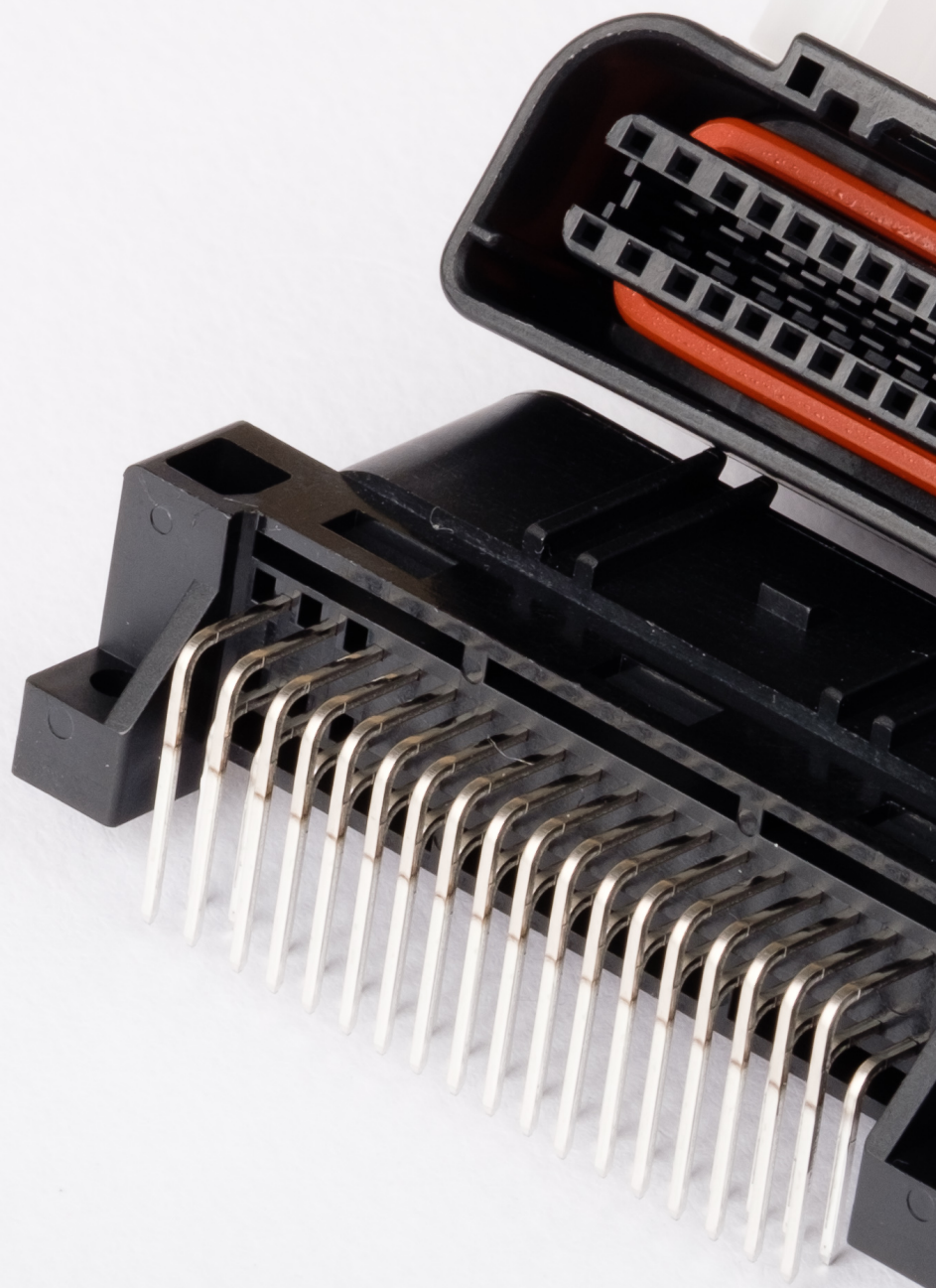
This receptacle can be used for both daisy chain connections and end connections.

The connector suitable for the large electric current has been realized by using highly-conducting material, so that the connection of large current circuit enables.

> Top entry

> Wire side-feed type







# **CHAPTER 4**

## **WTB BOARD IN INSULATION DISPLACEMENT CONNECTORS**

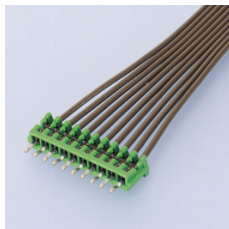
### ZA

*1.5 mm pitch*

Type: Board in & IDC

Current rating: 0.7A (AWG#28)

Voltage rating: 50V



The insulation barrel located between the twin slots firmly grips the wire and protects it from movements due to the heat of soldering or due to handling right after soldering.

- > Twin-slot ID section
- > Insulation barrel construction

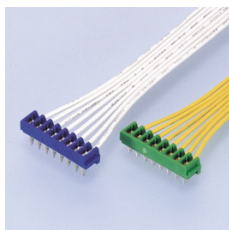
### DD / DS

*2 mm pitch*

Type: Board in & IDC

Current rating: 0.7A

Voltage rating: 100V



- > Strain relief
- > Twin U-slot ID section
- > Compact and low profile
- > Compliant locking solder tails
- > Top entry & wire side-feed entry

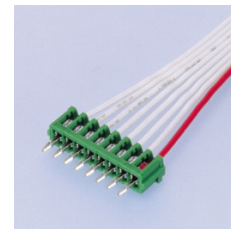
### DA

*2 mm pitch*

Type: Board in & IDC

Current rating: 1A (AWG#26)

Voltage rating: 100V



The DA connector is interchangeable with the SAN crimp style board-in connector in terms of insertion hole size and pitch.

The board insertion section of the contact is resilient to ensure easy and secure insertion onto PC boards.

- > Twin U-slot ID section

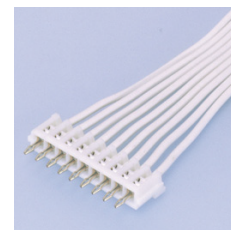
### DB

*2.5 mm pitch*

Type:

Current rating:

Voltage rating:



The DB connector has the same board layout and hose size as crimp style SCN connector.

- > Locking solder tail
- > Twin U-slot ID section





# CHAPTER 5

## WTW CONNECTORS

# JST

## WTW CONNECTORS

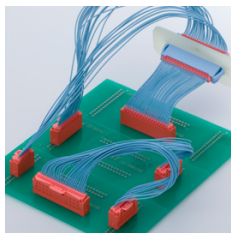
### TCS

*1 mm pitch*

Type: With secure locking device

Current rating: 2A (AWG#26)

Voltage rating: 50V



> Secure locking structure

> Countermeasure for unexpected prying insertion

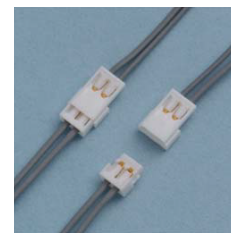
### ACH

*1.2 mm pitch*

Type: With locking device

Current rating: 2A

Voltage rating: 50V



This is the wire-to-wire connector for DC power supply.

> Crimp style

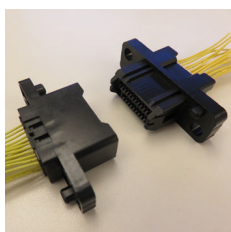
### RWM

*1.5 mm pitch*

Type: Crimp & disconnectable

Current rating: Signal circuit 1/A (AWG#26)

Voltage rating: Signal circuit / 50V



This connector is a dual row type drawer connector with combined signal to connect the units and absorbs misalignment between units.

This is drawer connector suitable for the place which is few in insertion and withdrawal cycles.

> Drawer connector / Double row

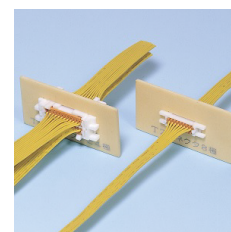
### TZ / TZW

*1.5 mm pitch*

Type: With panele locking device

Current rating: 2A (AWG#26)

Voltage rating: 100V



These are the single/dual-row units to connect each socket among the IDC type CZ/CZW or the crimp type CZH/CZHW connectors with 1.5 mm pitch.

These units improve the degree of freedom in designing the wiring inside the equipment.

> Convertible unit into WTW connection

> Matable with CZ receptacle

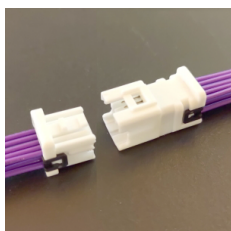
### ZIM

*1.5 mm pitch*

Type: Crimp style

Current rating: 2A (AWG#24)

Voltage rating: 100V



This is WTW connector with 1.5 mm pitch dual-row construction.

It is hardly affected by external forces and prevents the lock from coming off.

> With inner type secure locking device

> Inertial lock structure

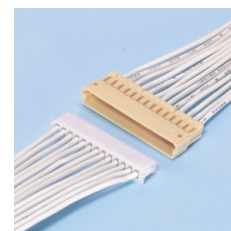
### ZM

*1.5 mm pitch*

Type: Crimp style

Current rating: 0.7A (AWG#28)

Voltage rating: 50V



This is a space-saving 1.5 mm pitch WTW connector that mates with both crimp and IDC type sockets.

The fully shrouded structure is resistant to irregular external forces such as prying during insertion and withdrawal.

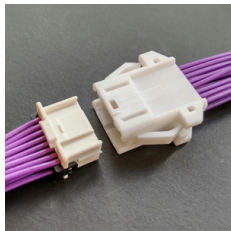
### ZND

*1.5 mm pitch*

Type: Crimp style & double-row

Current rating: 2A (AWG#24)

Voltage rating: 100V



This is the 1.5 mm pitch dual-row type WTW connector with secure locking device that is correspondent to the high-density equipment design. A good mating feel makes the occurrence of incomplete mating suppressed.

- > With secure locking device
- > Compact

### ZWP

*1.5 mm pitch*

Type: Crimp style

Current rating: 2A (AWG#24)

Voltage rating: 50V



This is the waterproof type 1.5 mm pitch WTW connector incorporating the inner lock structure.

- > With inner type secure locking device
- > Waterproof connector

### JWPF

*2 mm pitch*

Type: Crimp style & Waterproof

Current rating: 3A (AWG#22)

Voltage rating: 100V



Compact waterproof connector, using 025 contacts and a single piece solid wire seal.

Superior contact performance is provided by the double-leaf construction, consisting of a main and assist leaf spring.

- > Housing lances
- > Inter-housing lock

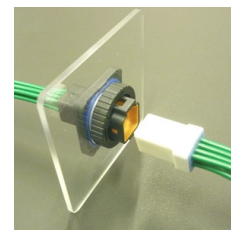
### JWPF PANEL LOCK TYPE

*2 mm pitch*

Type: Crimp style & Waterproof

Current rating: 3A (AWG#22)

Voltage rating: 100V



This is a 2.0 mm pitch WTW connector of the panel lock type with grade 7 of ingress protection of JIS C 0920 (IPX7 of IEC 60529), suitable for use for the place of which waterproof is required.

- > With panel locking device

### PAL

*2 mm pitch*

Type: Crimp style

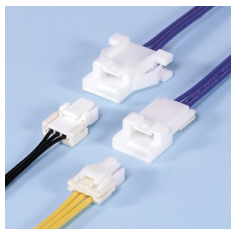
Current rating: 3A (AWG#22)

Voltage rating: 100V

This is a plug type crimp style connector for WTW in the 2.0 mm pitch PA family connectors with secure locking device.

It is applicable for mating with both crimp and insulation displacement style PAF connector socket. 2 types connector such as a panel lock with retainer mountable type and a free hanging type can be prepared.

- > With secure locking device



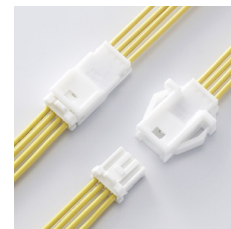
### PNI

*2 mm pitch*

Type: Crimp style

Current rating: 3A (AWG#22)

Voltage rating: 100V



This connector is a 2.0 mm pitch WTW connector, having incomplete mating prevention mechanism.

- > With secure locking device
- > Inertial lock structure



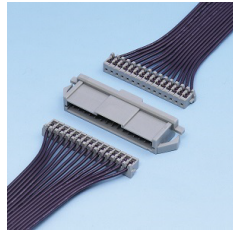
### TR/TRW

*2 mm pitch*

Type: Crimp style

Current rating: 1A (AWG#26)

Voltage rating: 100V



> With panel lock devices

<applicable to 0.8mm to 2.0mm thick panels>

Crimp style PHN and insulation displacement KR/CR connector receptacles can be accommodated by the TR connector.

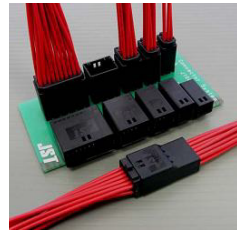
### JFA J1000 SERIES

*2.2 mm pitch*

Type: Crimp style

Current rating: 6.4A (3 circuits/  
AWG#18)

Voltage rating: 125V:J1100series  
250V:J1800series



Connectors for signal circuit or power supply circuit, applicable to the factory automation, heavy electric machinery, and other industrial equipment in general.

In spite of various kinds of housings available, their contacts are designed to be common.

The applicable tooling can be standardized.

### HM

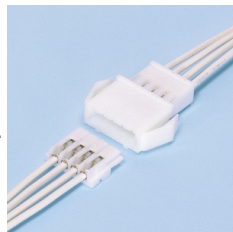
*2.5 mm pitch*

Type: Matable with crimp style

Current rating: Insulation displacement HR/2A,

Crimp style HR/3A

Voltage rating: 250V



Introducing a 2.5mm pitch plug styled wire-to-wire HM connector that supports both HR crimp and HR insulation displacement receptacles which is cost-efficient and highly reliable.

> IDC style HR receptacle

### JFA J2000 SERIES

*2.5 mm pitch*

Type: Crimp style

Current rating: MAX 4.6A  
(3 circuits/AWG#20)

Voltage rating: 250V



Connectors for miniaturization of electronic equipment.

Center locking and side locking options can be used depending on the required application.

Receptacle and tab contacts are designed to be common with all JFA connector J2000 series.

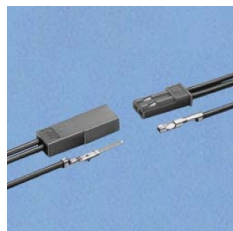
### RCY

*2.5 mm pitch*

Type: Crimp style

Current rating: MAX 3A

Voltage rating: MAX 250V



Space-saving and low-profile 2.5 mm pitch WTW connector.

The free spring in the socket contact ensures excellent insertion / withdrawal operation and stable contact performance.

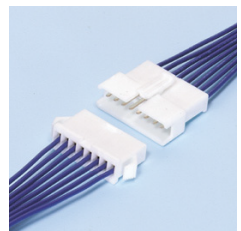
### SM

*2.5 mm pitch*

Type: Crimp style

Current rating: MAX 3A

Voltage rating: MAX 250V



The contacts are individually surrounded by housing walls.

> High contact pressure

> Secure lock mechanism

> Mountable on panels of various thickness without using tools

> With locking device

# JST

## WTW CONNECTORS

### THR

*2.5 mm pitch*

Type: Matable with HR receptacle

Current rating: Insulation displacement HR/MAX 2A

Crimp style HR/MAX 3A

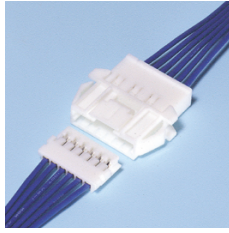
Voltage rating: MAX 250V

Matable with HR sockets

Both crimp style and insulation displacement HR connector sockets can be accommodated by the THR connector.

> Mountable on panels of various thickness without using tools

> Secure lock mechanism.



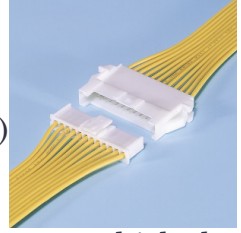
### XA

*2.5 mm pitch*

Type: Crimp style

Current rating: 3A (AWG#22,#20)

Voltage rating: 250V



This is a 2.5 mm pitch WTW connector which the socket is common with XA connector for WTB connection.

In addition to two types of free hanging and panel mount, this product also provides a lineup of re-tainer compatible products.

> With secure locking device

### XAD

*2.5 mm pitch*

Type: Crimp style & double row

Current rating: 3A (AWG#20)

Voltage rating: 250V



This is dual-row panel mountable WTW connector for the XAD connector for printed circuit board (wire side).

> With secure locking device

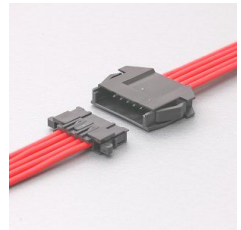
### XAG

*2.5 mm pitch*

Type: With secure locking device

Current rating: 3A (AWG#20)

Voltage rating: 250V



This is a 2.5mm pitch, crimp style, WTW connector.

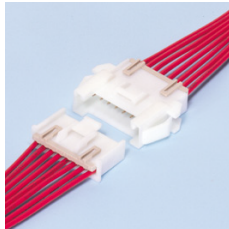
### XM

*2.5 mm pitch*

Type: Crimp style

Current rating: 3A

Voltage rating: 250V



The inner-housing lock secures the plug to the receptacle and prevents accidental disconnection. Secondary retainers provide added protection against non-insertion or disconnection.

Mountable on panels of various thickness without using tools.

> Housing lances

> With inner type secure locking device

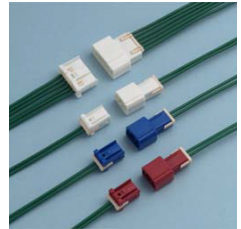
### XMA

*2.5 mm pitch*

Type: Crimp style

Current rating: 3A (AWG#22)

Voltage rating: 250V



This connector is a 2.5mm pitch WTW connector, having incomplete mating prevention mechanism. 2-circuit and 3-circuit connectors have control key to prevent connector from mating with incorrect circuits, thus, several same circuit connectors can be used.

> With locking device

# JST

## WTW CONNECTORS

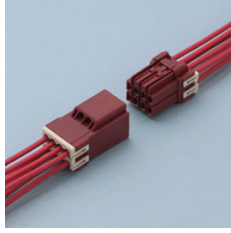
### HIL

*3.3 mm pitch*

Type: Crimp style

Current rating: 5A (2 circuits / AWG#18)

Voltage rating: 300V



This HIL connector is 3.3mm pitch WTW connector that has a mechanism to prevent an incomplete mating when mating connector.

> With inertia force mechanism with secure locking device

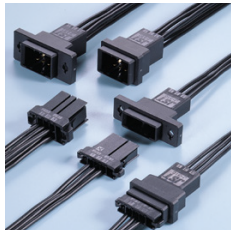
### JFA J300 SERIES

*3.81 mm pitch*

Type: Crimp style

Current rating: 15A (single circuit / AWG#14)

Voltage rating: 250V



Available in both WTB and WTW connection, the JFA connector is applicable to a wide range of applications e.g. from signal to output circuits.

### HL

*3.96 mm pitch*

Type: Crimp style

Current rating: MAX 7A

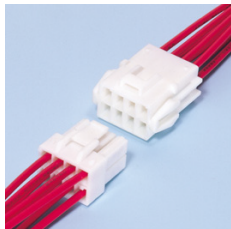
Voltage rating: MAX 300V

The low insertion force contacts reduce surface finish wear and reduce the effects of stress relaxation.

The inner-housing lock secures the plug to the receptacle and prevents accidental disconnection.

The panel lock is designed to prevent tangling with wires and accidental breakage because of handling.

> Housing lances



### BHS

*3.5 mm pitch*

Type: For LCD back light lamps

Current rating: 1A

Voltage rating: 1400V



WTW version connectors, designed for connecting liquid crystal display back light lamp to their starters.

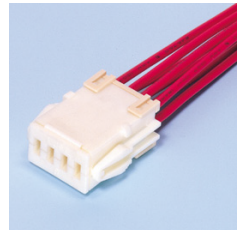
### BL

*3.96 mm pitch*

Type: Crimp style

Current rating: MAX 7A/line

Voltage rating: MAX 300V



The contacts for short-circuit connection are to be mounted in the housing.

Secondary retainers enhance safety in case of partial insertion or accidental release of the contact. The panel lock is designed to prevent tangling with wires and accidental breakage because of handling.

> Housing lances / For short-circuit connection

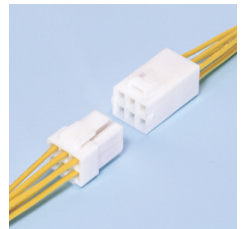
### SL

*3.96 mm pitch*

Type: Crimp style

Current rating: MAX 7A

Voltage rating: MAX 300V



The low insertion force contacts reduce surface finish wear and reduce the effects of stress relaxation.

The inner-housing lock secures the plug to the receptacle and prevents accidental disconnection.

>Housing lances

> With inner type secure locking device



# JST

## WTW CONNECTORS

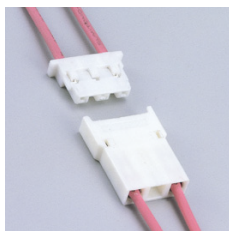
### BHM

*4 mm pitch*

Type: For LCD back light lamps

Current rating: 1A

Voltage rating: 600V



Connector for liquid crystal display back light lamps.

Box shaped construction of the housing prevents distortion during mating/unmating of the housings.

Withstanding voltage is also considered.

> Contact lances

### JWPS

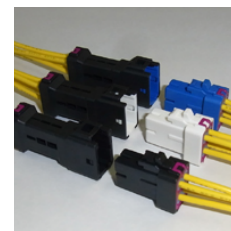
*4 mm pitch*

Type: Crimp style & Waterproof

Current rating: 4A (AWG#22)

5A (AWG#20) 6A (AWG#18)

Voltage rating: 300V



This JWPS connector can be used for the place of which especially waterproof is required.

This is the WTW connector that is grade 7 ingress protection of JIS C 0920 (IPX7 of IEC 60529).

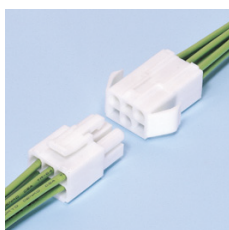
### EL

*4.5 mm pitch*

Type: Crimp style

Current rating: MAX 10A

Voltage rating: MAX 300V



The contacts for the compact EL connector can be easily inserted into the connector housings.

The plug housing and the receptacle housing can be smoothly mated even if they are mechanically distorted.

> With locking device

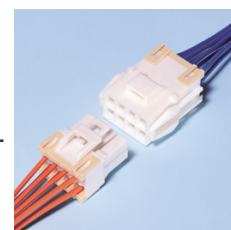
### YL

*4.5 mm pitch*

Type: Crimp style

Current rating: 10A (7A when retainers are mounted)

Voltage rating: 300V



The inner-housing lock secures the plug to the receptacle and prevents accidental disconnection.

The secondary retainer enhance safety in case of partial insertion or accidental release of the contact.

> Housing lances

> With inner type secure locking device

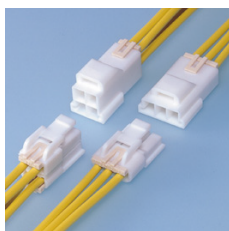
### YLN

*4.5 mm pitch*

Type: Crimp style

Current rating: 10A (7A when retainers are mounted)

Voltage rating: 300V



The YLN connector adds variation in shape to the existing color variations of the YL connector in order to improve identification of connectors.

This connector has a mechanism to prevent incomplete mating by utilizing the inertia force generated when the plug and receptacle are mated and therefore, ensures complete mating.

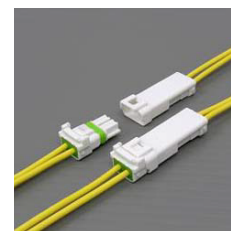
### WPJ

*5 mm pitch*

Type: Crimp style & Waterproof

Current rating: 7A (AWG#18)

Voltage rating: 300V



Compact, Water Resist and Durable.

This connector for electrical connection can be used on both water and non-water resistance conditions, depending on usage.

# JST

## WTW CONNECTORS

### **XL**

*5 mm pitch*

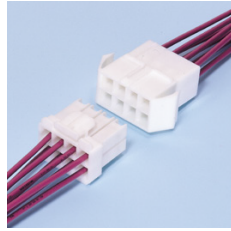
Type: Crimp style

Current rating: MAX 10A

Voltage rating: MAX 300V

The box-shaped contacts serve as socket contacts in a wide variety of applications from low-voltage, low-current signal circuits to power supply circuits.

Since the contacts are individually and totally surrounded by housing walls (egg-crate style), and since the contact pitch is 5.0mm, the electrical creep distances and dielectric spacing are great enough to meet most safety requirements.



### **ZL**

*5 mm pitch*

Type: Crimp style

Current rating: MAX 10A

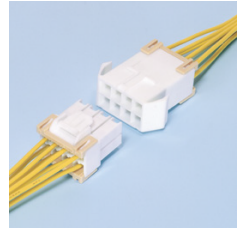
Voltage rating: MAX 300V

The box-shaped contacts serve as socket contacts in a wide variety of applications from low-voltage, low-current signal circuits to power supply circuits.

Mountable on panels of various thickness without using tools

> Housing lances

> Secondary retainers



### **JFA J300 SERIES**

*5.08 mm pitch*

Type: Crimp style

Current rating: 15A (Single circuit/AWG#14)

Voltage rating: 600V

Available in both wire-to-board and wire-to-wire connection, the JFA connector is applicable to a wide range of applications e.g. from signal to output circuits.



### **BHT**

*5.1 mm pitch*

Type: For LCD back light lamps

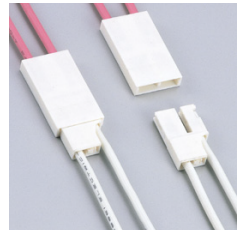
Current rating: 1A

Voltage rating: 1500V

Designed for connecting liquid crystal display back light lamps to their starters.

With the enough creep distance at the high voltage side, voltage rating can be as high as 1,500V. Applicable either to WTW connection or WTB-connection.

Pin contact is interchangeable with that of WTW type BHS connectors.



### **JFA J300 SERIES**

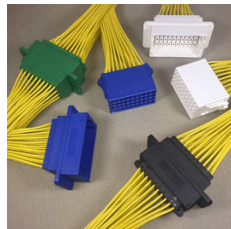
*5.4 mm pitch*

Type: Crimp style

Current rating: 5A(AWG#16, When applying to all circuits.)

Voltage rating: 600V

By taking the advantage of low insertion force of JFA connector, only the simple construction of a housing and contacts provides the collective connection of multi-circuit of power supply line.



### **VL HIGH CURRENT TYPE**

*6.2 mm pitch*

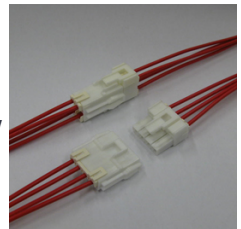
Type: Crimp style

Current rating: 23A (1, 2 circuits / AWG#12)

Voltage rating: 600V

This VL connector is 6.2 mm pitch WTW and WTB connector, designed for large current.

The connector suitable for the large electric current has been realized by using highly-conducting material, so that the connection of large current circuit enables



# JST

## WTW CONNECTORS

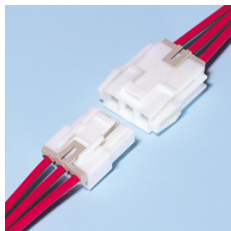
### VL

*6.2 mm pitch*

Type: Crimp style

Current rating: MAX 20A

Voltage rating: MAX 600V



This VL connector is 6.2 mm pitch WTW & WTB connector, designed for large current up to 20 A (1 or 2-circuit with 3.5mm<sup>2</sup> wire).

Secondary retainer, which prevents from insufficient insertion of contact and coming off contact, may use and large current circuit can be connected certainly and safety.

> With inner type secure locking device

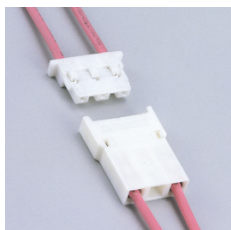
### BHM

*8 mm pitch*

Type: For LCD back light lamps

Current rating: 1A

Voltage rating: 600V



Connector for liquid crystal display back light lamps.

Box shaped construction of the housing prevents distortion during mating/unmating of the housings.

Withstanding voltage is also considered.

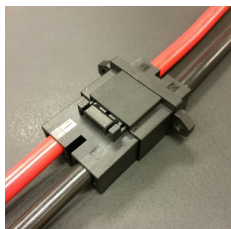
> Contact lances

### FAH

*16 mm pitch*

Current rating: 50A (AWG#8)

Voltage rating: 600V



One-touch connection and disconnection connector corresponding to high current.

This is a WTW connector, which current rating is 50 A capability in 2-circuit, and male and female contacts of this connector is designed as the same shape.

### MWP

*7 mm pitch*

Type: Crimp style & Waterproof

Current rating: MAX 7A

Voltage rating: MAX 300V



The low insertion force contacts reduce surface finish wear and reduce the effects of stress relaxation.

The inner-housing lock secures the plug to the receptacle and prevents accidental disconnection.

> Housing lances

### JFA J5000 SERIES

*11 mm pitch*

Type: Crimp style

Current rating: 50A (single circuit/AWG#8)

Voltage rating: 600V



This connector is corresponding to large current up to 50 A with single circuit (when using AWG #8).

The 4 and 6 circuits of the J5200 series Dual-row type can select either the bulk insertion of the receptacle housing or the module types.

### FAH SCREW LOCK TYPE

*16 mm pitch*

Current rating: 90A (AWG#4)

Voltage rating: 600V



This is wire to wire connector, of which current rating is 90 A capability in 2-circuit, and connects a crimp style terminal and bus bar with screws.



# JST

## WTW CONNECTORS

### CL

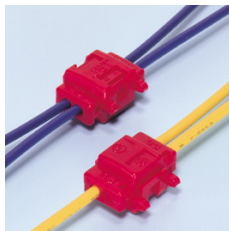
Type: IDC style

Current rating:

MAX 7A (CL-2218T, CL-2218S)

MAX 15A (CL-1814T, CL-1814S)

Voltage rating: 300V



The CL is a low-voltage, insulation displacement connector that can be applied using simple tools.

> Branch/Short-circuit connection

### DAC

Type: I/O & Hybrid connector

Current rating:

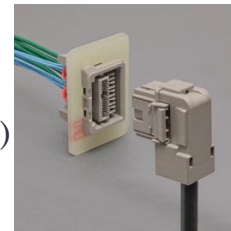
Signal circuit / 1.5A (AWG#27#26)

Power supply circuit / 6A  
(AWG#18)

Voltage rating:

Signal circuit / 50V

Power supply circuit / 300V



Hybrid type I/O connector with combined signal and power supply circuits.

### OTZ

Type: I/O & Hybrid connector

Current rating:

Signal circuit / 1.0A(AWG#26)

Power supply circuit / 5A  
(AWG#20)

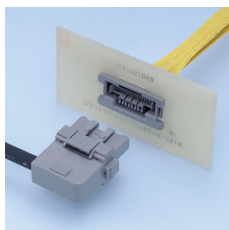
Voltage rating:

Signal circuit / 50V

Power supply circuit / 300V

It's a hybrid type I/O connector with combined signal and power supply circuits. Molded spring structure realized the curtailment of number of component.

> Space saving & Lever lock function



### RFC

Type: I/O & Drawer connector

Current rating:

Signal circuit/1.0A (AWG#27,#26)

Power supply circuit / 15A  
(AWG#14)

Voltage rating: Signal circuit / 50V - Power supply circuit / 250V



Signal / hybrid type drawer connector for unit connection.

The RFC connector absorbs misalignment between the two units and also excels in durability.

### RIC

Type: Drawer & double row

Current rating:

Signal circuit / 1.0A (AWG#26)

Power supply circuit / 15A  
(AWG#14)

Voltage rating: Signal circuit / 50V

Power supply circuit / 250V

This connector is a hybrid type double-row drawer connector to connect the units, absorbs misalignment between units, and excels durability.

RCZ connector with lever locking device is adopted as applicable socket to prevent coming off the socket and incomplete mating.



### RIY

Type: Drawer & double row

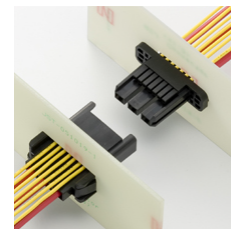
Current rating:

Signal circuit / 2A (AWG#24)

Power supply circuit / 15A  
(AWG#14)

Voltage rating: Signal circuit / 50V

Power supply circuit / 250V



This connector is a hybrid type double-row drawer connector with combined signal and power supply circuits to connect the units.

In the signal part, the number of parts reduced by connecting the crimping contact directly.

# JST

## WTW CONNECTORS

### RIZ

Type: Drawer & Single row

Current rating:

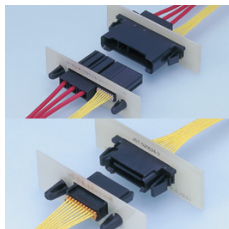
Signal circuit / 1.0A (AWG#26)

Power supply circuit / 15A  
(AWG#14)

Voltage rating: Signal circuit / 50V - Power supply circuit / 250V

In unit connection, it's a hybrid type connector with combined signal and power supply circuits, absorbs misalignment between units, and excels durability.

Pitch for signal circuits is 1.5mm & single row realizes slim design 9.0mm and space reducing.



### RIZ L-TYPE

Type: Drawer & Single row

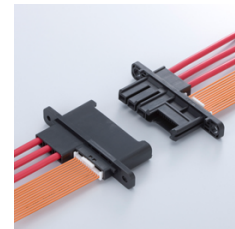
Current rating:

Signal circuit / 1.0A (AWG#26)

Power supply circuit / 15A  
(AWG#14)

Voltage rating: Signal circuit / 50V - Power supply circuit / 250V

It's a hybrid type single-row drawer connector combined signal & power supply circuits connector to connect the units, absorbs misalignment between units, and excels durability. RIZ connector with lever locking device is adopted as applicable socket to prevent incomplete mating.



### RPJ

Type: For rack & panel

Current rating: 2A (AWG#24)

Voltage rating: 250V

The pin and socket are adopted to use as the small rack panel connector.

Adoption of pin and socket contacts achieves the miniaturization of connector.

The floating function adopted for receptacle housing (26 circuits) and plug housing (20 circuits) absorbs misalignment

> Compact design



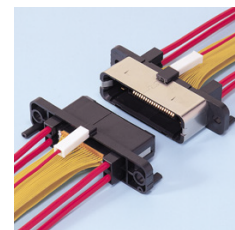
### RPZ

Type: I/O & drawer connector

Current rating: Signal circuit / 1.0A (AWG#26) - Power supply circuit / 15A (AWG#14) - Tab / 10A (PS connector AWG#16)

Voltage rating: Signal circuit / 50V - Power supply circuit / 250V

Power supply circuit and signal circuit integrated hybrid type drawer connector. With low insertion force mechanism, mating/unmating life of 20,000 cycles are guaranteed. Both plug and receptacle have the ESD shielding shell. For the grounding purpose, #110 tab is equipped with this connector.



### RVE

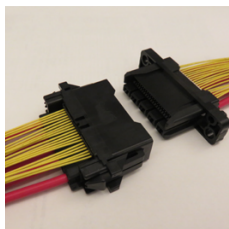
Type: I/O & drawer connector

Current rating: Signal circuit / 1.0A (AWG#26) - Power supply circuit / 15A (AWG#14)

Voltage rating: Signal circuit/50V  
Power supply circuit / 250V

This connector is a hybrid type drawer connector to connect the unit, absorbs misalignment between units, and it is possible to install with panel lock on plug side.

This is drawer connector suitable for the place which is few in insertion and withdrawal cycles.



### RWZ

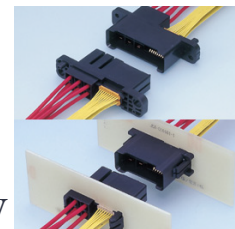
Type: Double row connector

Current rating: Signal circuit / 1.0A (AWG#26) - Power supply circuit / 15A (AWG#14)

Voltage rating: Signal circuit/50V  
Power supply circuit / 250V

In unit connection, this RWZ connector is a hybrid type double row drawer connector with combined signal and power supply circuits, absorbs misalignment between units, and excels durability.

Pitch for signal circuits is 1.5mm realizes space reducing of drawer connector.



### RWZ L-TYPE

Type: Drawer connector

Current rating: Signal circuit / 1.0A (AWG#26) - Power supply circuit / 15A (AWG#14)

Voltage rating: Signal circuit/50V  
Power supply circuit / 250V



This connector is a hybrid type double-row drawer connector combined signal and power supply circuits connector to connect the units.

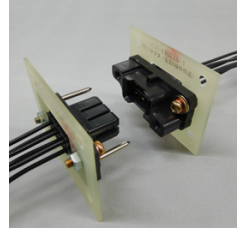
RWZ connector with lever locking device is adopted as applicable socket to prevent incomplete mating.

### RWZ POWER SUPPLY SYST.

Type: Space saving

Current rating: 15A (6-circuits AWG#14)

Voltage rating: 250V



This is the power supply system drawer connector which realized excellent toughness and durability by performing the secure guide and positioning when mating with assembled metal pin to the receptacle. In addition to the ease of robust design of the connection in equipment, provide safety and security.

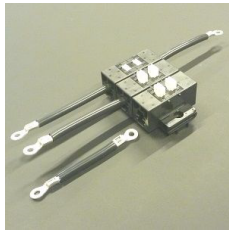
> Drawer & double row connector

### TBX

Type: Crimp & spring type

Current rating: 50A

Voltage rating: 600V



This is a short circuit type power supply system wire-to-wire connector that is configurable up to 4 lines.

For example, for one line on the input side, the output side can be branched into 1 to 3 lines according to a use application.

It is also possible to its reverse.

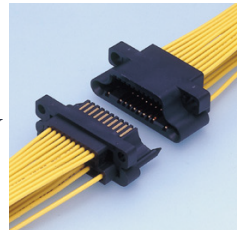
Use by mounting the crimped ring tongue terminal R8-5.

### TSD

Type:I/O & drawer connector

Current rating: 2A (AWG#24)

Voltage rating: Signal circuit/30V  
Power supply circuit / 300V



This hybrid type drawer connector shares a single design contact between signal and power lines.

> The signal contact can be used both for the power and for the signal connections.

> Misalignment correction

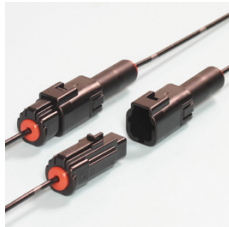
> Highly-reliable contact performance

### WPK

Type: Crimp style & waterproof

Current rating: 7A (0.85 sq mm)

Voltage rating: 12V



This connector is compact and excels in waterproof and durability.

This connector can be used for the place which especially waterproof is required.

Its waterproof grade is 7 ingress protection of JIS C 0920 (IEC 60529 IPX7).





# CHAPTER 6

## GLOW WIRE CONNECTORS

### JWPF WTB

*2 mm pitch*

Type: Waterproof & crimp style

Current rating: 3A (AWG#22)

Voltage rating: 100V



This is a 2.0 mm pitch WTB connector with water ingress protection with an IPX7 rating per IEC 60529 (grade 7 per JIS C 0920), suitable for use for the place of which waterproof is required.

> Disconnectable type

### PA WTB

*2 mm pitch*

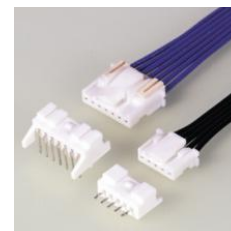
Type: With secure locking device

Current rating: 3A (AWG#22)

Voltage rating:

Standard type 250V

Retainer mountable type 100V



This is a crimp type WTB connector that is the core one of 2.0 mm pitch PA family connectors with secure locking device.

> Disconnectable

> Crimp style

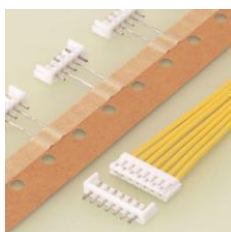
### EH WTB

*2.5 mm pitch*

Type: Crimp & disconnectable

Current rating: 3A (AWG#22)

Voltage rating: 250V



It is designed to meet the demand for the high-density connection of internal wires to PC boards.

> Tin type

### XAD WTB

*2.5 mm pitch*

Type: Crimp & disconnectable

Current rating: 3A (AWG#20)

Voltage rating: 250V



Double-row construction.

Header wafer is made of solder crack preventive material, glass-filled PA66 nylon.

Secure locking device prevents accidental disconnection.

> With secure locking device

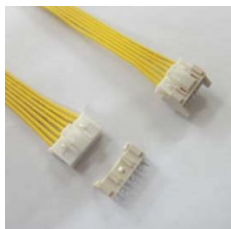
### XA WTB

*2.5 mm pitch*

Type: Crimp & disconnectable

Current rating: 3A (AWG#22#20)

Voltage rating: 250V



Compatible with glow wire test.

> Disconnectable

> With secure locking device

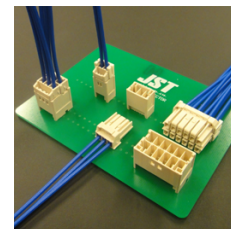
### BNI WTB

*3.3 mm pitch*

Type: Inertial lock structure

Current rating: 4A (AWG#20)

Voltage rating: 300V



This is a 3.3 mm pitch WTB connector with a mechanism to prevent incomplete mating.

Three different key patterns per number of circuits in the same model are provided to prevent incorrect mating when multiple pieces of connector are used in close proximity

### SDN WTB BOARD IN

*3.96 mm pitch*

Type: Board in / Crimp style

Current rating: 7A (AWG#18)

Voltage rating: 250V



This board-in connector is capable of connecting a wide variety of circuits including signal and power supply circuits.

The connector features a slim, low-profile design.

### VH WTB

*3.96 mm pitch*

Type: Crimp & disconnectable

Current rating: 10A (AWG#16)

Voltage rating: 250V



This small, field-proven connector for PC boards is reliable and has a large current carrying capacity.

It can be used with a wide variety of signal, Power supply, and output circuits that appear in consumer electronic products.

> Compact type

> With locking device

### EL WTW

*4.5 mm pitch*

Type: Crimp style

Current rating: MAX 10A

Voltage rating: MAX 300V



The contacts for the compact EL connector can be easily inserted into the connector housings.

The plug housing and the receptacle housing can be smoothly mated even if they are mechanically distorted.

> With locking device

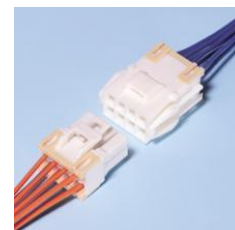
### YL WTW

*4.5 mm pitch*

Type: Crimp style

Current rating: 10A (7A when retainers are mounted )

Voltage rating: 300V



The inner-housing lock secures the plug to the receptacle and prevents accidental disconnection.

The secondary retainers enhance safety in case of partial insertion or accidental release of the contact.

> Housing lances

> With inner type secure locking device

### YLN WTW

*4.5 mm pitch*

Type: Crimp style

Current rating: 10A (7A when retainers are mounted )

Voltage rating: 300V



The YLN connector adds variation in shape to the existing color variations of the YL connector in order to improve identification of connectors.

This connector has a mechanism to prevent incomplete mating by utilizing the inertia force generated when the plug and receptacle are mated and therefore, ensures complete mating.

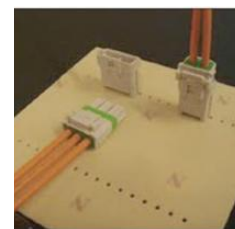
### WPJ WTW

*5 mm pitch*

Type: Crimp style & Waterproof

Current rating: 7A (AWG#18)

Voltage rating: 300V



Compact, Water Resist and Durable.

This connector for electrical connection can be used on both water and non-water resistance conditions, depending on usage.



### NV

*5 mm pitch*

Type: Crimp & disconnectable

Current rating: 10A (AWG#16)

Voltage rating: 250V



Suitable for a wide range of applications, from low-voltage, low-current signal circuits to power supply circuits requiring large currents.

> With locking device

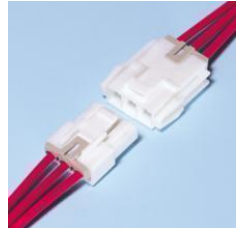
### VL WTB

*6.2 mm pitch*

Type: Crimp & disconnectable

Current rating: 20A (AWG#12)

Voltage rating: 600V



This VL is a 6.2 mm pitch WTW and WTB connector, designed for large current.

Secondary retainer, which prevents from insufficient insertion of contact and coming off contact, may use and large current circuit can be connected certainly and safety.

> High current rating

> With inner type secure locking device

### PS CHAIN & TERMINALS

Type: Other

Current rating: 25A (#250(S)  
AWG#10)

Voltage rating: 250V



> Secure locking mechanism and Low insertion force

> Stable contacting performance

> Misinsertion (reverse insertion) prevention structure for the contact & misinsertion prevention structure for the tab (Short type housing)

> Glow wire compatible products are also available for short type housings performance



# CHAPTER 7

## BOARD TO BOARD CONNECTORS

# JST

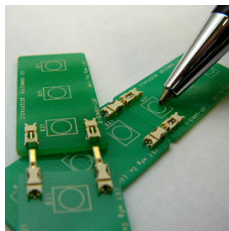
## BTB CONNECTORS

### LEL

Type: Absorbing PCB misalignment,  
PCB horizontal mounting type

Current rating: 1.6A (AWG#28)

Voltage rating: 100V



Considering about luminescence property of LED package, this LEL is designed as low profile type connector for LED lighting, and achieves the space saving. The horizontal connection between PCBs enables and the mechanism of absorbing the PCB misalignment has been installed considering the parallel use for the connector. Bellows type contact that has a high contact pressure and a high durability performance (receptacle side) and enough mating stroke provides the stable contact performance even if the PCB expands and contracts due to heat.

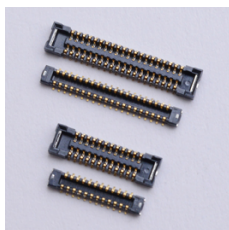
### JAK

*0.4 mm pitch*

Type: With locking device

Current rating: 0.3A

Voltage rating: 30V



This is space saving type BTB connector with 0.4mm pitch, 0.8mm between PCB and 2.0mm product width.

> PCB perpendicular mounting type

> Disconnectable

### JAS

*0.4 mm pitch*

Type: Shrouded header type

Current rating: 0.3A

Voltage rating: 30V



This connector is 0.4 mm pitch SMT type BTB connector with parallel connection.

> PCB parallel mounting type

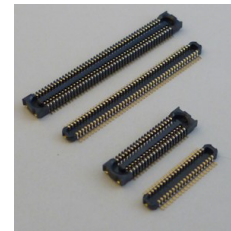
### JKGN

*0.35 mm pitch*

Type: Shrouded header type

Current rating: 0.5A

Voltage rating: 30V



This connector is 0.35 mm pitch BTB (FPC) connection connector with mounting height 1.0 mm, product width 2.88 mm.

> PCB parallel mounting type

> Space saving

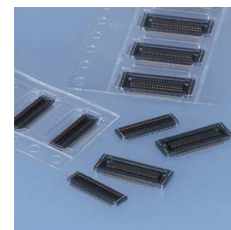
### JAN

*0.4 mm pitch*

Type: Shrouded header type

Current rating: 0.2A

Voltage rating: 30V



Connector with stacking height 1.0mm and 0.4mm pitch, which is the lowest-profile connector in the [electro mechanical component] industry.

In consideration of operability at user side, although it is 1.0mm low profile, when mating receptacle with plug, the connector structure, where the large amount of guiding connector can be taken, is adopted, and differentiates JAN connector added value.

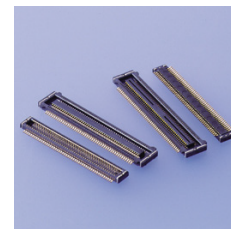
### JAV

*0.4 mm pitch*

Type: Shrouded header type

Current rating: 0.3A

Voltage rating: 30V



0.4mm pitch, SMT, low-profile connection with parallel connection.

> PCB parallel mounting type



# JST

## BTB CONNECTORS

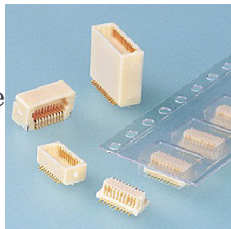
### JMC

*0.5 mm pitch*

Type: Full automatic IDC machine

Current rating: 0.5 A

Voltage rating: 50V



This JMC connector is 0.5 mm pitch SMT type BTB connector which realizes miniaturizing and space saving.

Plug connector has the various connection types such as top/side entry types including the stacking height variation and receptacle connector has the fixed/absorption misalignment types.

> Compact type & Space saving mountable

### JMD

*0.5 mm pitch*

Type: Shrouded header type

Current rating: 0.5A

Voltage rating: 50V



This connector is 0.5mm pitch SMT type BTB connector with horizontal and vertical connection.

> PCB parallel or perpendicular mounting type

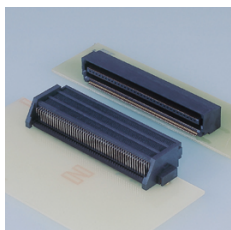
### JU

*0.6 mm pitch*

Type: Shrouded header type

Current rating: 0.5A

Voltage rating: 50V



This JU connector is a BTB connector which has many circuits such as Maximum 200 circuits.

Its mating portion is designed with a full shrouded box style which prevents the contamination of splashed flux.

> Fully shrouded box style design

> PCB horizontal, parallel or perpendicular mounting type

### JUX

*0.6 mm pitch*

Type: Shrouded header type

Current rating: 0.5A

Voltage rating: 50V



This connector is small 0.6 mm pitch dual-row BTB connector for high density mounting.

> Compact type

> PCB parallel or perpendicular mounting type

### HTB

*0.635 mm pitch*

Type: Absorbing PCB misalignment

Current rating: 0.5A

Voltage rating: 50V



This HTB connector is 0.635mm pitch SMT type BTB connector with parallel and perpendicular connection.

> PCB perpendicular mounting type

> Absorbing PCB misalignment type

> PCB horizontal mounting type

### RHM

*1 mm pitch*

Type: Shrouded header type

Current rating: 0.5A

Voltage rating: 50V



The plug consists of upper and lower parts in order to save space.

This connector enables also flexible application by using either upper or lower parts individually.

> PCB parallel mounting type

# JST

## BTB CONNECTORS

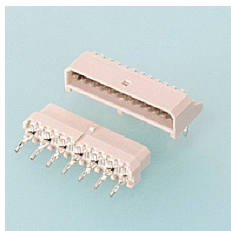
### JE

*1.25 mm pitch*

Type: Shrouded header type

Current rating: 1A

Voltage rating: 50V



- > High pressure, dual beam, fork contact
- > Box-shaped housing
- > PCB perpendicular mounting type

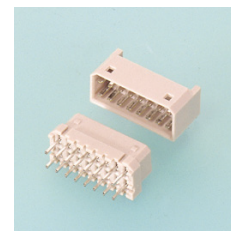
### JED

*1.25 mm pitch*

Type: Shrouded header type

Current rating: 1A

Voltage rating: 50V



- > Double-row construction
- > High pressure, dual beam, fork contact
- > Box-shaped housing
- > Double row
- > PCB parallel or perpendicular mounting type

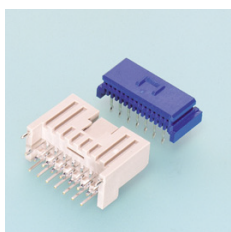
### JET

*1.25 mm pitch*

Type: With locking device

Current rating: 1A

Voltage rating: 50V



Self-supporting style board-to-board connectors. Both secure lock and friction lock type receptacles are available.

The connector halves can be easily mated, yet have a high retention force because of the housing lock mechanism.

- > PCB perpendicular mounting type
- > With staggered solder tails

### JXV

*1.27 mm pitch*

Type: Shrouded header type

Current rating: 1A

Voltage rating: 50V



This connector is BTB connector that the flat horizontal connection between boards enables in electronic equipment. For SMT type of high-density 1.27mm pitch, the rating current of industry leading 1.0A has been enabled. This connector is firm, good mating feeling and most suitable for connecting function board to the same horizontal direction.

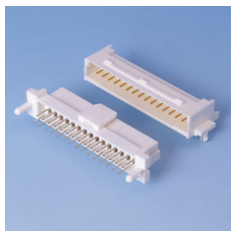
### JDV

*1.5 mm pitch*

Type: With locking device

Current rating: 1A

Voltage rating: 50V



- > Staggered solder tails
- > Two types of locking devices (secure lock type & friction lock type) are available.
- > PCB perpendicular mounting type
- > With staggered solder tails

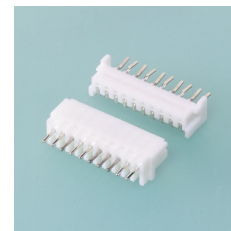
### MQ

*2 mm pitch*

Type: Shrouded header type

Current rating: 1A

Voltage rating: 250V



Measuring 2.0 mm in pitch, 9.2 mm in mounting height and 5.5 mm in thickness, this BTB connector makes high-density mounting of components in electronic products possible. It is ideal for small electronic products, such as portable VCAs and video cameras, which require high-density mounting and high reliability.

- > Compact type & PCB parallel or perpendicular mounting type

# JST BTB CONNECTORS

## HVQ

*2.5 mm pitch*

Type: With locking device

Current rating: 3A

Voltage rating: 250V



Used to interconnect PC boards in parallel, vertically or horizontally.

- > Folded beam construction
- > Molded-in header
- > PCB horizontal
- > Parallel or perpendicular mounting type

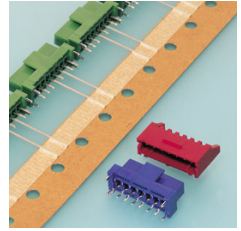
## JL

*2.5 mm pitch*

Type: Shrouded header type

Current rating: 3A

Voltage rating: 250V



Both secure lock and friction lock connectors are available.

- > High contact pressure
- > Housing lock assures good connection even after severe shock & vibration
- > With secure locking device
- > PCB perpendicular mounting type

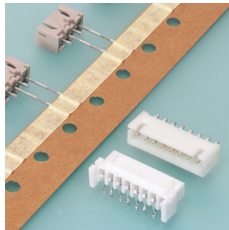
## JQ

*2.5 mm pitch*

Type: Shrouded header type

Current rating: 3A

Voltage rating: 250V



- > High contact pressure
- > Fully shrouded header
- > The header is interchangeable with those of crimp style XH connector and insulation displacement NR/NRD connectors
- > PCB horizontal
- > Parallel or perpendicular mounting type

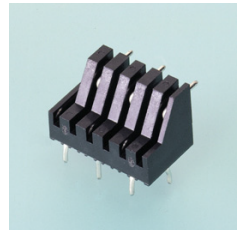
## MBS HEADER

*2.5 mm pitch*

Type: PCB perpendicular mounting type

Current rating: 1A

Voltage rating: 250V



Headers for BTB connection

- > Staggered pins
- > The MBS header has a locking boss that allows it to be temporarily mounted on the PCB

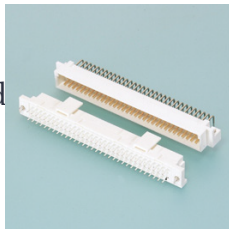
## DIN

*2.54 mm pitch*

Type: Conformed to DIN standard

Current rating: 1A

Voltage rating: 50V



Conforms to DIN standards.

- > The receptacle housing has a locking device to securely hold the plug housing
- > Hook pins to assure connection of the boards

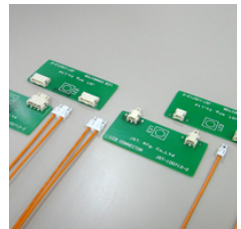
## LEB

*4 mm pitch*

Type: Crimp & disconnectable

Current rating: 3A

Voltage rating: 300V



Considering about luminescence property of LED device, this LEB connector is designed as low profile type connector (height: 2.7mm) for LED lighting, and achieves the space saving. The horizontal connection between PCBs enables and the mechanism of absorbing the PCB misalignment has been installed considering the parallel use for the connector. Fork type contact that has a high contact pressure (receptacle side) and enough mating stroke provide the stable contact performance even if the PCB expands and contracts due to heat.

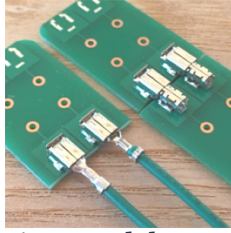


# **JST** BTB CONNECTORS

## **LEK**

Type: Absorbing PCB misalignment type

Current rating: 3A



This LEK connector is BTB connector that does not use the housing and has a positive lock.

This enables to absorb misalignment when mating connector.

> PCB horizontal mounting type

> BTB connector with secure lock device



# CHAPTER 8

## FFC / FPC

## CONNECTORS

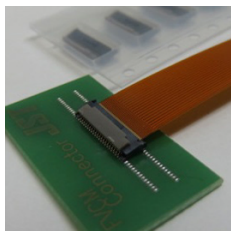
### FVCM

*0.2 mm pitch*

Type: ZIF & SMT type

Current rating: 0.2A

Voltage rating: 50V



This FVCM connector is the first mid-flip type 0.2 mm pitch connector for FPC in the connector industry.

It is designed for the use of multipolarization, operability and both upper and lower contacts.

Moreover, it inherits from tilt type, and it improves the freedom of design for placing at the PC board dramatically.

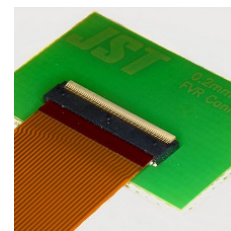
### FVR

*0.2 mm pitch*

Type: ZIF & SMT type

Current rating: 0.2A

Voltage rating: 50V



This is low profile and space saving type connector for FPC with 0.2 mm pitch, 0.95 mm height, and 3.0 mm depth.

Back flip type of double-sided contact improves the freedom for routing of FPC.

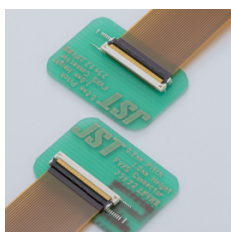
### FVX

*0.2 mm pitch*

Type: ZIF & SMT type

Current rating: 0.2A

Voltage rating: 50V



This connector has been developed for small portable equipment for which low profile and miniaturization are required.

By using FPC with protrusions, the positioning accuracy of FPC is improved.

> Low profile type

> With side lock mechanism

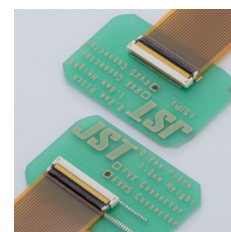
### FVXS

*0.2 mm pitch*

Type: ZIF & SMT type

Current rating: 0.2A

Voltage rating: 50V



This connector has been developed for small portable equipment for which low profile and miniaturization are required.

This connector also has the structure that tension due to handling of FPC is absorbed by socket and reinforcing tab.

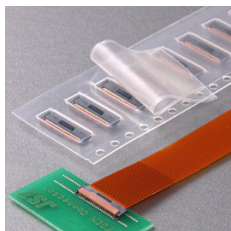
### FGEM

*0.25 mm pitch*

Type: ZIF & SMT type

Current rating: 0.2A

Voltage rating: 50V



This FGEM connector is the first mid-flip type 0.25mm pitch connector for FPC in the connector industry.

By adding the tilt type, PC insertion workability improved and located parts to near the connector, and high-density mounting was enabled.

### FXR

*0.3 mm pitch*

Type: ZIF & SMT type

Current rating: 0.2A

Voltage rating: 50V



This FXR connector is ZIF type connector for FPC with only 1.0mm height.



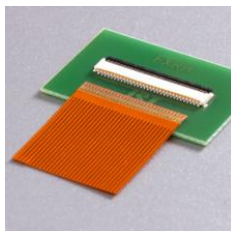
### FXRH

*0.3 mm pitch*

Type: ZIF & SMT type

Current rating: 0.2A

Voltage rating: 50V



This FXRH connector is ZIF type connector for FPC with only 0.9mm height.

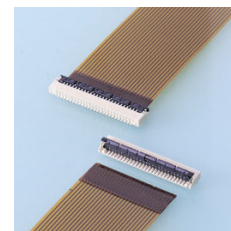
### FXS

*0.3 mm pitch*

Type: ZIF & SMT type

Current rating: 0.2A

Voltage rating: 50V



Space saving flip lock type connector, with 1.8mm height and 3.85mm depth.

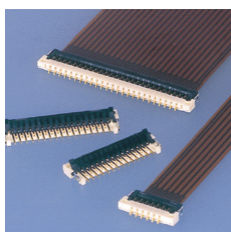
### FXV

*0.3 mm pitch*

Type: Double zero insertion force

Current rating: 0.2A

Voltage rating: 50V



The FXV connector is a market requires space saving and low profile 0.3mm pitch connector, and designed for corresponding to FPC with protrusions.

- > SMT and low profile type
- > With side lock mechanism

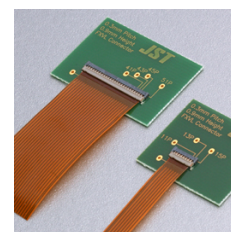
### FXVL

*0.3 mm pitch*

Type: Double zero insertion force

Current rating: 0.2A

Voltage rating: 50V



This FXVL connector is a space saving and low profile connector for FPC demanded from the market, and realizes 0.3mm pitch connector with a mounting height of 0.9mm and depth of 2.68mm. In 0.3mm pitch FPC connector, the smallest product in mounting area on the board has been provided.

- > SMT type

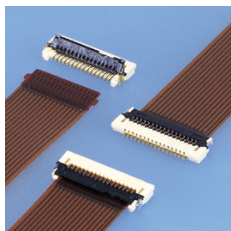
### FXZ

*0.3 mm pitch*

Type: ZIF & SMT type

Current rating: 0.2A

Voltage rating: 50V



In addition to achieving space saving and low-profile features demanded by the market, this connector also realizes superb operability by adopting a FPC with protrusion.

The use of the FPC provides secure and foolproof mating at the customers' production site.

- > Low profile with side lock mechanism

### FXZ

*0.3 mm pitch*

Type: Double zero insertion force

Current rating: 0.2A

Voltage rating: 50V



This connector realizes space saving and low profile features demanded by the market, and it provides excellent operability.

Various number of circuits can be available.

- > SMT

### FXZT

*0.3 mm pitch*

Type: Zero insertion force type

Current rating: 0.2A

Voltage rating: 50V



Vertical 0.3mm pitch ZIF type connector.

This connector was mainly developed to connect FPC and subminiature digital products such as DVC, DSC, PDAs and so on.

> SMT type

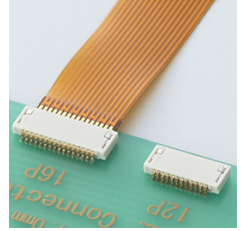
### FZ

*0.4 mm pitch*

Type: Snap-in & SMT type

Current rating: 0.5A

Voltage rating: 50V



This is very small Non-ZIF type 0.4mm pitch connector.

Double-sided contact structure.

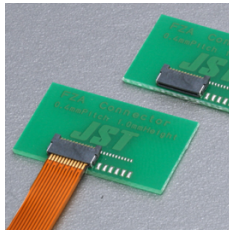
### FZA

*0.4 mm pitch*

Type: Snap-in & SMT type

Current rating: 0.5A

Voltage rating: 50V



This FZA connector is a renewal product of current FZ connector.

0.4mm pitch Non-ZIF small type connector with a mounting height of 1.0mm and 3.0mm in depth.

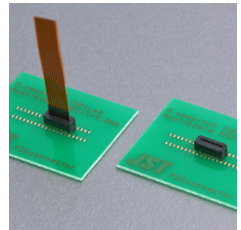
### FZC

*0.4 mm pitch*

Type: Snap-in & SMT type

Current rating: 0.5A

Voltage rating: 50V



This is low profile 0.4mm pitch Non-ZIF top entry type connector with a mounting height of 2.5mm.

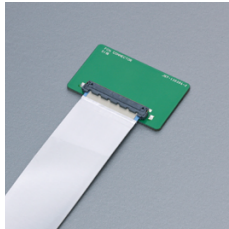
### FCH

*0.5 mm pitch*

Type: Snap-in & SMT type

Current rating: 0.3A

Voltage rating: 50V



This is 0.5mm pitch connector for FPC which has the exclusive GND contact and enables high-speed transmission with connecting to the impedance controlled FPC.

Adopting the auto lock mechanism that makes lock by performing the one action of snap-in-work, the workability improvement is realized.

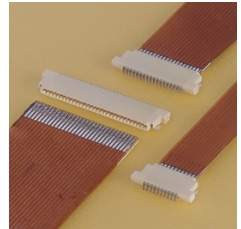
### FH

*0.5 mm pitch*

Type: Snap-in & SMT type

Current rating: 0.5A

Voltage rating: 50V



The large miniaturization at pitch direction and depth direction and low-profile as 1.2mm mounting height are realized. FH connector is miniaturized and space saving Non-ZIF type connector for FPC.

> Double-sided contact

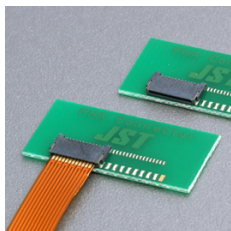
### FHA

*0.5 mm pitch*

Type: Snap-in & SMT type

Current rating: 0.5A

Voltage rating: 50V



This FHA connector is a renewal product of current FHJ connector.

This is Non-ZIF type connector for the 0.3mm thickness FPC with a mounting height of 1.1mm, small and space saving type.

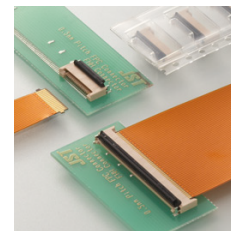
### FHH

*0.5 mm pitch*

Type: Zero insertion force type

Current rating: 0.5A

Voltage rating: 50V



This is connector with the double-sided contact for FPC.

As FPC with protrusions is used for this FHH connector, prevention of incomplete insertion and mis-insertion are realized and connection reliability is improved.

> SMT type

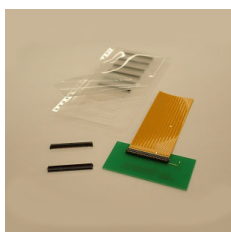
### FHHS

*0.5 mm pitch*

Type: High-speed transmission

Current rating: 0.5A

Voltage rating: 50V



This is 0.5 mm pitch, back flip type FPC connector for 0.3 mm thick FPC.

Realized space saving with thin of 1.0 mm mounting height.

> Back flip mechanism

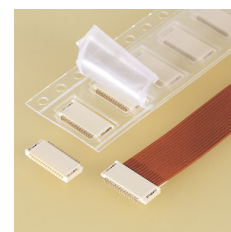
### FHJ

*0.5 mm pitch*

Type: Snap-in & SMT type

Current rating: 0.5A

Voltage rating: 50V



Non-ZIF type low-profile of 1.2mm mounting height. 0.3mm thick standard type FPC is applicable.

### FHN

*0.5 mm pitch*

Type: Auto-locking mechanism

Current rating:

0.5A (20-circuits or less)

0.3A (21-circuits or more)

Voltage rating: 50V



Adopting the auto-locking mechanism which locks by one action when having FFC/FPC inserted into connector, insertion workability and reliability are much improved.

> Back flip mechanism

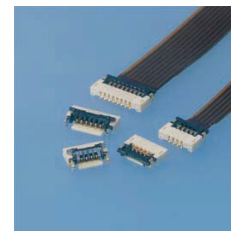
### FHS

*0.5 mm pitch*

Type: Zero insertion force type

Current rating: 0.5A

Voltage rating: 50V



FHS connector is a space-saving type connector for FPC with 3.1mm depth, though it is low profile of 0.9mm mounting height. 0.2mm thick standard FPC.

> SMT type



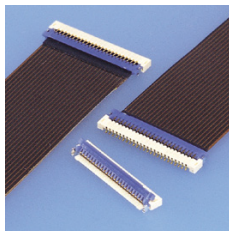
### FHSY

*0.5 mm pitch*

Type: Zero insertion force type

Current rating: 0.5A

Voltage rating: 50V



This ZIF type 'flip lock' FPC connector achieves a low-profile feature of a 0.9mm mounting height despite the thickness of the FPC being 0.3mm.

> SMT type

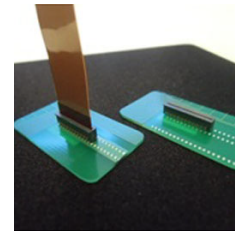
### FHT

*0.5 mm pitch*

Type: Snap-in & SMT type

Current rating: 0.5A

Voltage rating: 50V



Adopting Non-ZIF type (engagement can be done by single action.)

> Achieving Low profile and Space saving

> Dealing with Halogen-free

> SMT type

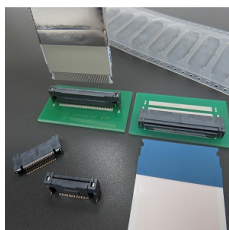
### FHTG

*0.5 mm pitch*

Type: Snap-in & SMT type

Current rating: 0.5A

Voltage rating: 50V



By providing a unique lock mechanism for confirming the mating, it is possible to insert the FFC with one action and pull out the FFC without unlocking, realizing good workability.

> Auto-locking mechanism

### FHY

*0.5 mm pitch*

Type: Zero insertion force type

Current rating: 0.5A

Voltage rating: 50V



This connector for the 0.3mm thickness FPC with a mounting height of 1.3mm. FPC with protrusion prevents incomplete insertion and mis-insertion, so that it provides reliable connection.

> SMT type

> With side lock mechanism

> For long distance between 2 PCBs

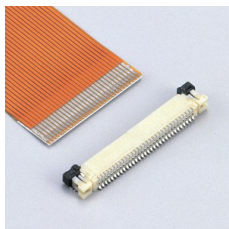
### FKZ

*0.5 mm pitch*

Type: Zero insertion force type

Current rating: 0.5A

Voltage rating: 50V



This is a space saving type connector for FPC. ZIF type is adopted due to improving the wear resistance and the mating life of the connector.

### FLH

*0.5 mm pitch*

Type: Zero insertion force type

Current rating: 0.5A

Voltage rating: 50V



Thin with the mounting height of only 1.2mm, yet applicable to 0.3mm thick FPCs.

> In-line surface mount tails

> The housing is made of heat resistant resin to allow reflow soldering

> The connector is available in either the normal or reverse configurations

> SMT type

### FLT

*0.5 mm pitch*

Type: Snap-in & SMT type

Current rating: 0.5A

Voltage rating: 50V



- > Top entry type
- > The housing is made of heat resistant plastic to allow reflow soldering
- > Staggered surface mount tails
- > Low insertion force with staggered mating points design

### FLZ

*0.5 mm pitch*

Type: Zero insertion force type

Current rating: 0.5A

Voltage rating: 50V



- > The housing is made of heat resistant plastic to allow reflow soldering
- > In-line surface mount tails
- > The connector is available in either the normal or reverse configurations
- > SMT type

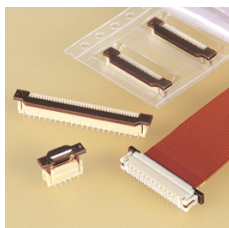
### FLZT

*0.5 mm pitch*

Type: Zero insertion force type

Current rating: 0.5A

Voltage rating: 50V



Top entry type 0.5mm pitch FPC connector. Solder tails are of a staggered design.

- > Both normal and reverse types are available so that the designer can choose the FPC direction at his option
- > SMT type

### FLZX

*0.5 mm pitch*

Type: Zero insertion force type

Current rating: 0.5A

Voltage rating: 50V



Applicable to standard 0.3mm thickness FFC or FPC.

- > Partial operation, even with big number of circuits, is achieved thanks to 'flip lock' type
- > SMT type

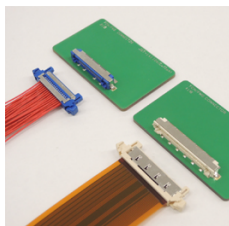
### FWG

*0.5 mm pitch*

Type: Space saving

Current rating: 0.3A

Voltage rating: 50V



This is crimp style disconnectable connector with 0.5 mm pitch lock for high-speed transmission which can be chosen discrete wires, FPC or FFC depending on usage.

By assuming the use of multiple pieces of connector in the vicinity, prevention of mis-mating is provided by 4 kinds of key pattern in each circuit and 4 different colors of housing.

### FY

*0.5 mm pitch*

Type: Snap-in & SMT type

Current rating: 0.3A

Voltage rating: 30V



0.5mm pitch non-ZIF snap-in type FFC connector.

### FAZ

*1 mm pitch*

Type: Zero insertion force type

Current rating: 1A

Voltage rating: 50V



The FAZ connector is SMT type for PC board connector, which is a Zero Insertion Force (ZIF) type for FFC connection with a lead pitch 1.0 mm.

> SMT type

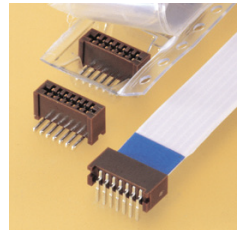
### FM

*1 mm pitch*

Type: Snap-in, DIP & SMT type

Current rating: 0.5A

Voltage rating: 50V



> Double-sided contact

> Easy mating with the FFC/FPC, by snap-in design

> Both Dip (through-hole) and SMT types are available.

> SMT type connectors have heat-resistant housings so that solder reflow is possible.

### FMN

*1 mm pitch*

Type: Snap-in, DIP & SMT type

Current rating: 0.5A

Voltage rating: 50V



This connector is 1.0 mm pitch for FFC connection. Realized low cost multi-core by adopting contact structure on one side.

In addition, it is a multi-entry type connector that has both DIP and SMT types.

### FMS

*1 mm pitch*

Type: Snap-in & SMT type

Current rating: 0.5A

Voltage rating: 50V



> Compact

> 2.8mm in mounting height and 6.3mm in depth

> Double-sided contact

> Easy mating with the FFC/FPC, by snap-in design

### FMZ

*1 mm pitch*

Type: Zero insertion force type

Current rating: 0.5A

Voltage rating: 50V



> Double-leaf contact

> Temporary retention feature

After the FFC is inserted, but before the locking slide is actuated, a retention feature prevents the FFC leads from moving or coming out.

> DIP type

### FPZ

*1 mm pitch*

Type: Zero insertion force type

Current rating: 0.5A

Voltage rating: 50V



> Connection can be made simply by inserting the leads into the connector and pressing the slider. Once the leads are inserted, they are held by the 4-side guides located inside the slider so that they will not dislocate or come off.

> SMT type



### FUN

*1 mm pitch*

Type: Board-in connector, for FFC

This board-in type connector provides direct soldering connection between the conductors of the 1.0mm pitch FFC and the PC board.

- > Small pitch as 1.0mm pitch for FFC board-in type
- > Lower assembly costs



### FE

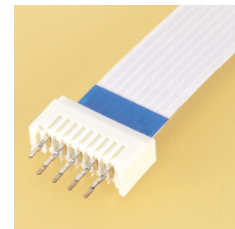
*1.25 mm pitch*

Type: Snap-in & DIN type

Current rating: 1A

Voltage rating: 200V

- > Low insertion force and high contact pressure
- > The FFC is securely connected by simply inserting their leads into the connector
- > The contact's solder dip section has a retention mechanism that allows the connector to be temporarily mounted on the PC board and prevents the connector from floating when soldered



### FFS

*1.25 mm pitch*

Type: Snap-in & DIN type

Current rating: 0.5A

Voltage rating: 50V

- > Double-sided contact
- > The FFC is securely connected by simply inserting their leads into the connector



### FDZ

*2.54 mm pitch*

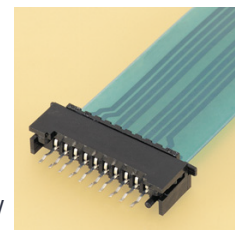
Type: Zero insertion force type

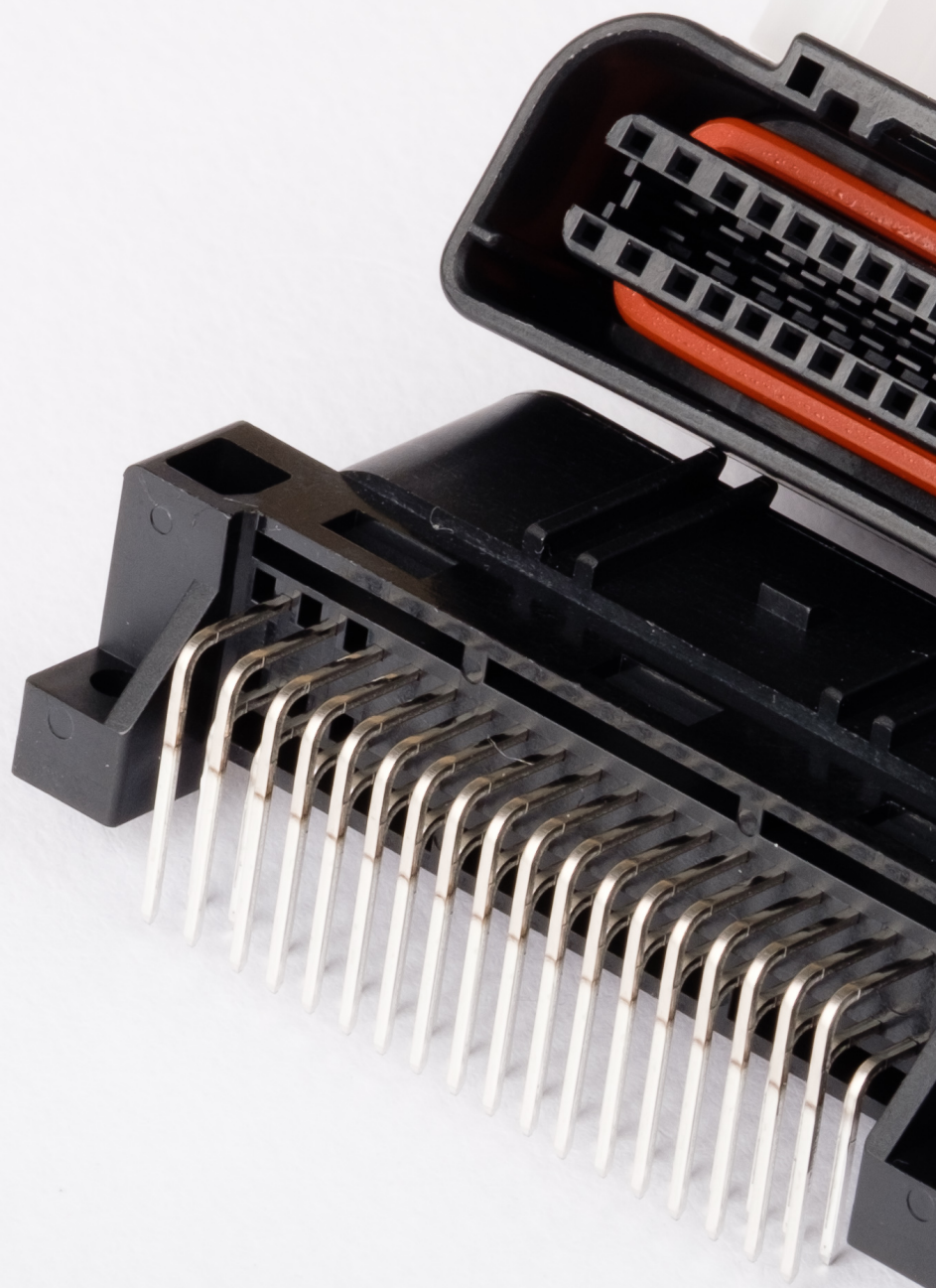
Current rating:

Tin-plated copper foil lead / 1.0A,  
Silver paste carbon-printed lead / 50mA

Voltage rating: 250V

- > Double-sided contact
- > The contact solder tail has a board retention feature that allows the connector to be temporarily held on the PC board while it is being soldered
- > DIP type







# CHAPTER 9

## RIBBON CABLE CONNECTORS



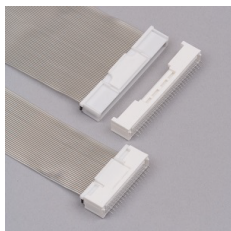
### FCT

*1 mm pitch*

Type: For FFC & Board-in type

Current rating: 1A

Voltage rating: 50V



This connector realizes high cost performance, to be designed with the new connector concept that the conductors of flat cable that was fixed up in the plug housing are directly touched to the base contacts.

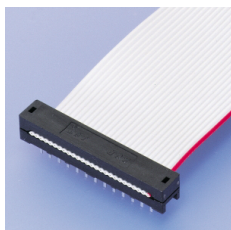
### RC

*2.54 mm pitch*

Type: IDC & board-in type

Current rating: 1A

Voltage rating: 300V



This is a board-in type insulation displacement connector (IDC) for 1.27 mm pitch flat ribbon cables.

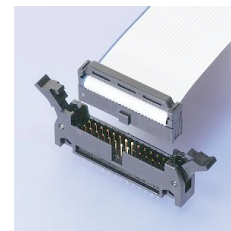
### RA IDC TYPE

*2.54 mm pitch*

Type: IDC style

Current rating: 1.0A (AWG#28)

Voltage rating: 300V



Connectors for 1.27mm pitch ribbon cable

> Twin U-slot ID section

> Selective gold-plated posts

> The RA series receptacles and header are interchangeable with the similar type connectors commercially available

> Contact JST for details



# CHAPTER 10

## INTERFACE CONNECTION CONNECTORS

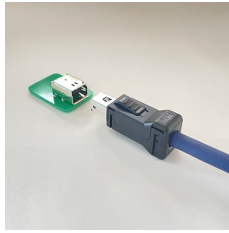
### MUF

*0.8 mm pitch*

Type: Shielded interface

Current rating: 1A

Voltage rating: 30V



This connector is the shielded interface connector with locking mechanism.

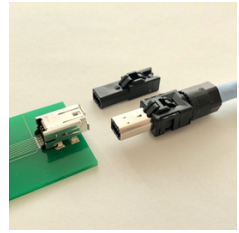
### CIF

*1.27 mm pitch*

Type: Bypass connection

Current rating: 0.5A

Voltage rating: 30V



This connector is an interface connector with shielding where equipped the function to locking.  
> Cable connector

### DSUB J SERIES

Type: Rectangular connector

Current rating: 3A

Voltage rating: 250V



> The socket contacts are highly elastic, which in turn ensures reliable connection even after many mating cycles  
> The dimples in the plug shell ensure continuity between it and the socket shell, thus providing complete shielding

### DSUB JH SERIES

Type: Rectangular connector

Current rating: 3A

Voltage rating: 250V



> Thin design  
The depth is trimmed to 8.5mm, reducing the surface mounting area by 33% compared with our J series subminiature connectors.  
> Space saving mountable

### DSUB JK SERIES

Type: Rectangular connector

Current rating: 1A

Voltage rating: 250V



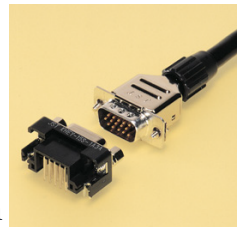
> High density design  
The JK series of D subminiature connectors have 15 circuits in a standard 9-circuit shell by virtue of its 3-row, 2.286mm pitch construction, 1.7 times as dense as the J series.  
> High-density mountable type

### DSUB KH SERIES

Type: Rectangular connector

Current rating: 1A

Voltage rating: 250V



> The depth is trimmed to 13mm reducing the surface mounting area by 20% compared with our JK series subminiature connectors  
> High-density mountable type  
> Space saving mountable



### EP

Type: For 4 circuits plug

Current rating: 2A

Voltage rating: 30V



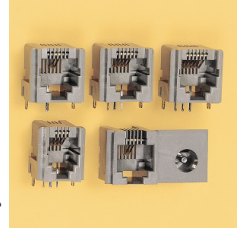
This EP connector is a connector for the plug of 3.5 mm in diameter with switch function.

### MJ

Type: Modular Jack connector

Current rating: 1.3A

Voltage rating: 250V



> The MJ connector has an upper contact point design.

With this construction, the contact points are free from dust even before the connector is mated with the modular plug.

> The MJ connector has metal hooks, which provides click feeling when mounted on a PC board, and are soldered later.

### MJ 8 CIRCUITS TYPE

Type: Modular Jack connector

Current rating: 1.3A

Voltage rating: 250V



FFC standard conforming (RJ45) modular connector, to be used for the LAN connection of the printer or modem.

> Fully-shielding-covered type is available for high-level shielding effect.

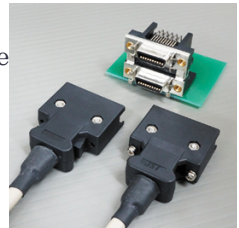
> Shielding covered type has secure grounding circuit, as the hook part is soldered to the PC board via shielding cover (spring part).

### MS

Type: Double stack type receptacle

Current rating: 1A

Voltage rating: 250V



> Structure of unifying shell and metal hooks

> Two kinds of plug locking device (Screw lock/ Latch lock)

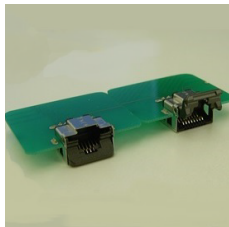
> Wire soldering type

### RJ2

Type: Modular jack connector

Current rating: 1.3A

Voltage rating: 250V



This is an interface connector compatible with RJ45 and designed as low profile and space saving type while having a one-piece structure with a cover opening and closing structure.

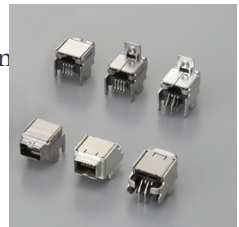
> For communication transmission

### RV

Type: For high-speed transmission

Current rating: 0.3A

Voltage rating: 30V



Conforming to the IEEE 1394 standards, the RV connector is a high-speed serial interface connector designed for use in PCs and consumer electronic equipment.

### UB

Type: Conformed to USB standard

Current rating: 1A/line

Voltage rating: 30V



Conforms to USB (Universal Serial Bus)

> Two types (type A & B) are available

> Metal shell of the receptacle and the metal cover of the plug provides highly reliable EMI shielding effect

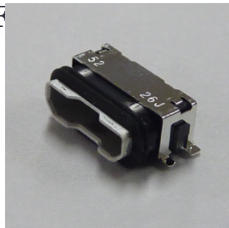
> Receptacle has solder tabs for secure connection with the PCB

### UB MICRO USB WATERPROOF

Type: Sealed

Current rating: See data sheet

Voltage rating: 30V



This connector is an interface connector for cellular phone and mobile equipment conforming to Micro USB (Universal Serial Bus) Standard that is grade 7 ingress protection of JIS C 0920 (IPX7 of IEC 60529).

### UB3

Type: Conformed to USB standard

Current rating: VBUS & GND

circuits (No.1 & 4 circuits): 1.8A

Other circuits (No. 2, 3, 5 to 9 circuits) : 0.25A

Voltage rating: 30V



This connector is an interface connector conforming to USB (Universal Serial Bus) 3.0 Standard.

### UB MICRO USB

Type: Conformed to USB standard

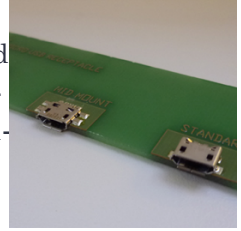
Current rating: > When using only signal line : Signal line(when using the contacts from No.2 to 4.)

/1.0A /Line

> When using power supply line: Power supply line(when using the contacts No.1 and 5.)/1.8A/Line  
Signal line(when using the contacts from No.2 to 4.)/0.5A/Line

Voltage rating: 30V

This connector is an interface connector for cellular phone and other mobile equipments conforming to Micro USB standard.



### UB MINI B

Type: Conformed to USB standard

Current rating: 1A

Voltage rating: 30V



The USB 2.0 certified receptacle is quite suitable for the interface of the small and miniaturized PC-peripheral products as Digital Cameras and MP3 Players.

### UBC

Type: Conformed to USB standard

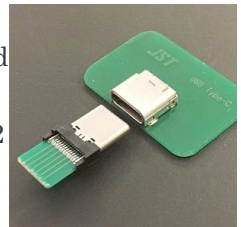
Current rating: 1.25A/Pin

Vbus(A4,A9,B4,B9) / GND(A1,A12

,B1,B12) / CC1(A5); CC2(B5)

0.25A/Pin Other circuits

Voltage rating: 20V



This connector is a USB (Universal Serial Bus) Type-C compliant interface connector and power supply of up to 100 W is available. The receptacle is USB4 standard certified product with a data transmission speed of up to 40 Gbps. It has a reversible construction, so that insertion and extraction without having to worry about the orientation (both sides) of the plug is possible.



# CHAPTER 11

## HEADERS JUMPERS & COMPRESSION CONNECTORS



# **JST** HEADERS JUMPERS & COMPRESSION CONNECTORS

## **MIH**

*1 mm pitch*

Type: Compression connector

Current rating: 0.5A

Voltage rating: 20V

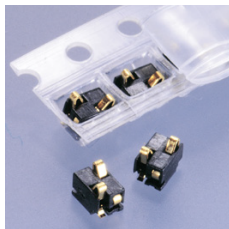
Compression type connector developed for compact equipment such as mobile phone.

> Compact

Projected area is only 2.0 x 2.8mm, with 1.8mm height.

> High contact pressure.

> Despite its smallness, the contact provides contact pressure of 0.7N per circuit thanks to curled spring design, giving stable contact performance even under conditions of vibration.



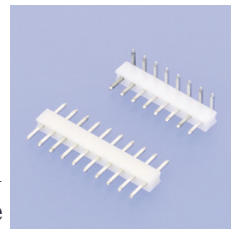
## **BC HEADER**

*2 mm pitch*

Type: Header

Headers for direct board-to-board connection, having 0.5mm square posts.

> Available in two types, top entry type and side entry type.



## **2.5SB HEADER**

*2.5 mm pitch*

Type: Header

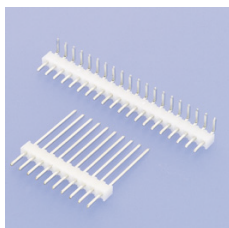
Current rating: 3A

Voltage rating: 250V

Having 0.64mm square posts, the 2.5SB header can be used to connect any 2.5mm receptacles to PC boards.

They can also be used to directly connect PC boards.

> Available in two types, top entry type and side entry type



## **TB HEADER**

*2.5 mm pitch*

Type: Header

Current rating: 3A

Voltage rating: 250V

Having 0.64mm square posts, the TB header can be used to connect any 2.5mm receptacles to PC boards.

They can also be used to directly connect PC boards.

> Available in two types, top entry type and side entry type



## **2.54SB HEADER**

*2.54 mm pitch*

Type: Header

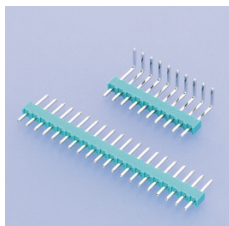
Current rating: 3A

Voltage rating: 250V

Having 0.64mm square posts, the 2.54SB header can be used to connect any 2.54mm receptacles to PC boards.

They can also be used to directly connect PC boards.

> Available in two types, top entry type and side entry type



## **JM**

*2.54 mm pitch*

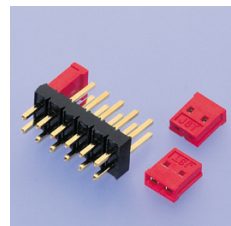
Type: Jumper connector

Current rating: 3A

Voltage rating: 250V

Two-circuit jumper connector suited for changing or switching circuits on PC boards without using DIP switches.

> This connector is stackable in both directions



# **JST** HEADERS JUMPERS & COMPRESSION CONNECTORS

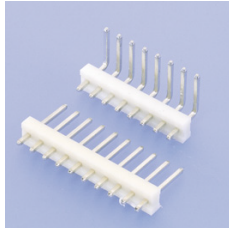
## **VS HEADER**

*3.96 mm pitch*

Type: Header

Having 1.14mm square posts, the VS header can mate with a receptacle or as a connector for the direct interconnection of PCB.

> Available in two types, top entry type and side entry type



## **AN**

Type: For mobile phones

Current rating: 0.5A

Voltage rating: 50V

Two types of connector for antenna connection of mobile phones; one is for a diameter of 2.6.



## **BTT**

Type: For a battery

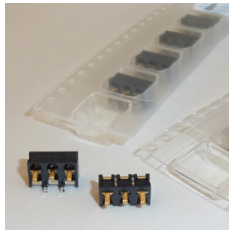
Current rating: 2A

Voltage rating: 20V

Connector for batteries used in the compact mobile equipment such as mobile phones.

The battery can be set with Offset 0mm.

> Compression connector



## **BTT CM TYPE**

Type: For a battery

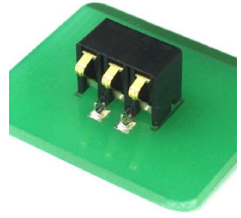
Current rating: 2A

Voltage rating: 20V

Connector for batteries used in the compact mobile equipment such as mobile router.

The battery can be set with Offset 0mm.

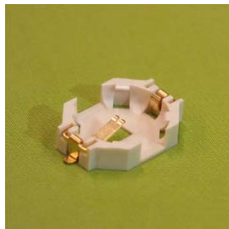
> Compression connector

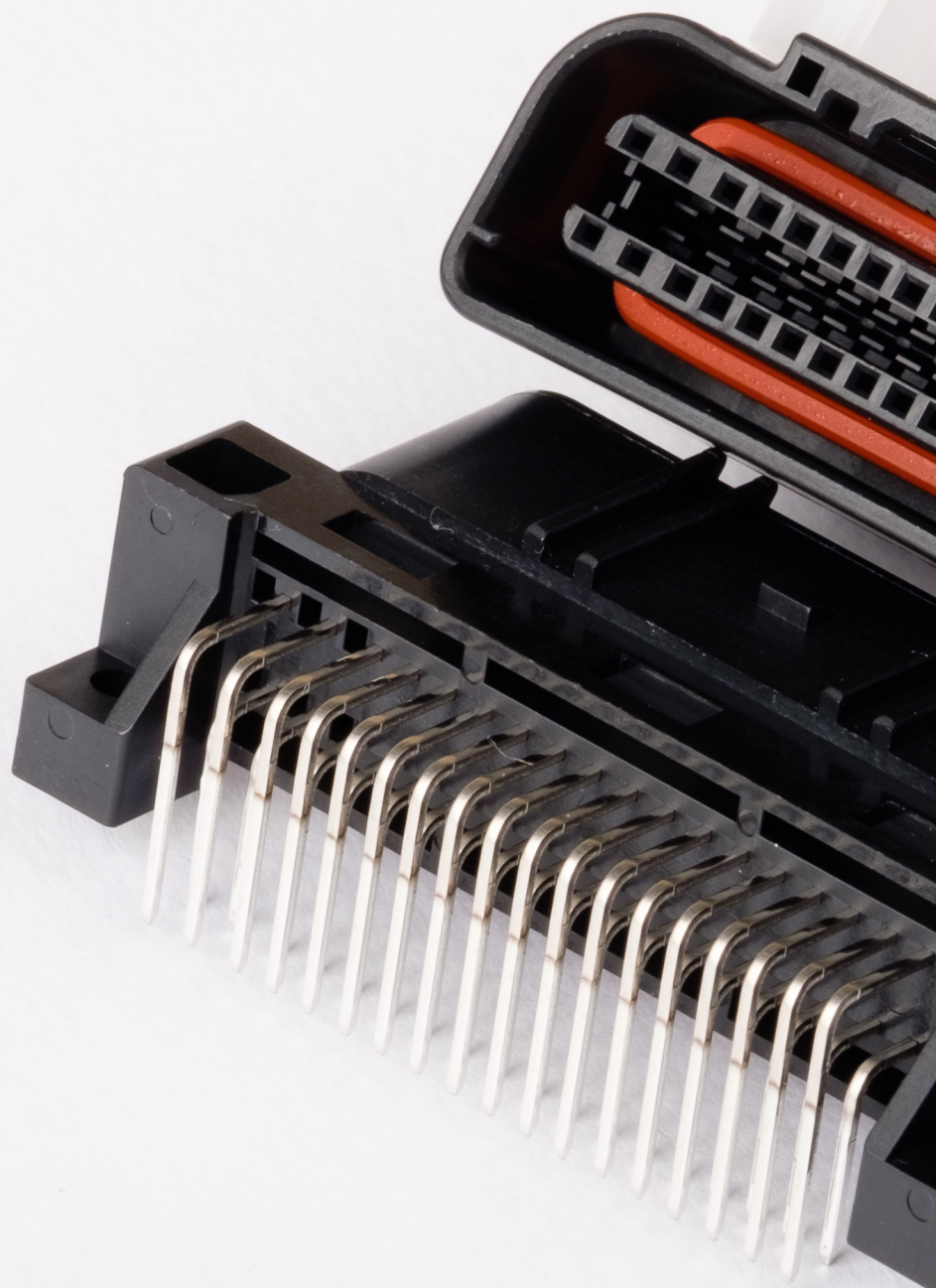


## **PB**

Type: Socket for a button battery

Connector for button batteries used in the compact mobile equipment such as mobile phones.









# CHAPTER 12

## CARD EDGE CONNECTORS

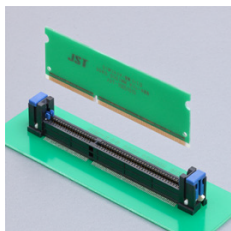
### DIM

*0.6 mm pitch*

Type: For S.O.DIMM

Current rating: 0.3A

Voltage rating: 25V



Socket for DDR/DDR3 S.O.DIMM 204-circuit complying with JEDEC (MO-268).

Hold the PC board by the mechanism for preventing to come off the PCB.

Mechanism for preventing incomplete mating to check by visual from upper, and right and left is provided.

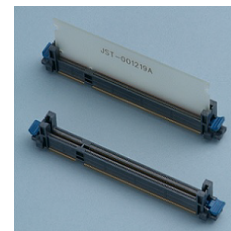
### DM-200P

*0.6 mm pitch*

Type: For S.O.DIMM

Current rating: 0.3A

Voltage rating: 25V



Socket for DDR/DDR2 S.O.DIMM 200-circuits complying with JEDEC MO-224 standard.

### DM-144P JEDEC-MO-190

*0.8 mm pitch*

Type: For S.O.DIMM

Current rating: 0.5A

Voltage rating: 250V



This is sockets for the S.O.DIMM of 144-circuits based on the JEDEC MO-190 standard, and its side type socket is low profile with 5.2 mm height.

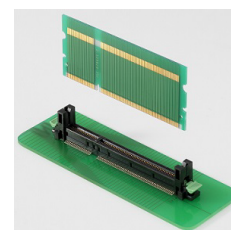
### DM-144P JEDEC-MO-274

*0.8 mm pitch*

Type: For S.O.DIMM

Current rating: 0.5A

Voltage rating: 250V



Socket for DDR2 S.O.DIMM 144-circuits complying with JEDEC MO-274 standard.

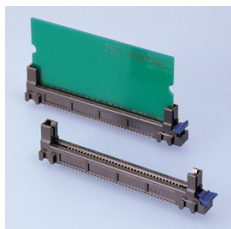
### DM-72P

*1.27 mm pitch*

Type: For DIMM

Current rating: 0.5A

Voltage rating: 250V



Standardized by JEDEC (MO-160). Straight type DIMM socket that is suited for module PC board with operating voltage 3.3V.

> Module is easily ejected with the ejector button.

> With 14mm height, wide variety of mounting is possible.

### RSXA

*2.5 mm pitch*

Type: IDC style

Current rating: 4.0A (AWG#22)

2.0A (AWG#24)

Voltage rating: 250V

>Conform with RAST 2.5 standard

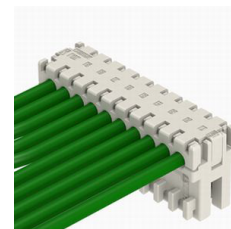
> IDC (Insulation displacement connection) with twin U-slot contact design to provide extra stability.

> Various polarizing features, keying option and locking features available.

> Daisy chain option available.

> 2 to 10 Circuits

> For Circuits 11 to 20, please contact us for availability and lead time.







# CHAPTER 13

## CARD CONNECTORS



### SMALL PC CARD MB TYPE (SOCKET & HEADER)

*1 mm pitch*

Type: Socket & Ejector

Current rating: 0.5A/line



Sockets and headers for small PC cards, having 68 double-row circuits, conforming to PCACIA/JEIDA.

Socket is of straddle-type, designed to accommodate PC board between the two solder tail rows.

>Header is with stand-off 0mm, available in both normal and reverse types

### SDHT

*1.1 mm pitch*

Type: For micro SD card

Current rating: 0.5A

Voltage rating: 15V



This is a space saving and Push-Pull type connector for Micro SD card.

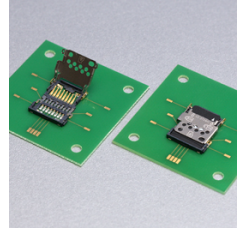
### SDHK

*1.1 mm pitch*

Type: For micro SD card

Current rating: 0.5A

Voltage rating: 15V



This is micro SD card connector of flip cover type that can approach from above the PCB surface.

### CF CARD MA TYPE

(SOCKET & HEADER)

*1.27 mm pitch*

Type: For CF cards, Socket & Ejector

Current rating: 0.5A/line



Socket and header which have 50 double-row circuits, conforming to the standard CFA.

A variety of sockets and headers are available.

2 types of sockets are available, SMT type and double-row straddle type designed to accommodate PC board between the two solder tail rows.

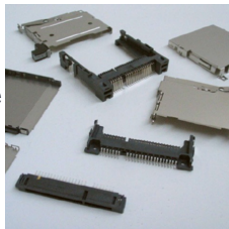
### CFF

*1.27 mm pitch*

Type: Standard for CFast & trade

This is the connector for CFast & trade; Card complying with CFast & trade; Specification.

> Ejector with locking mechanism



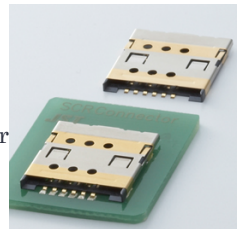
### SCR

*1.52 mm pitch*

Type: For SIM/UIM card,  
For mobile phones & I/O connector

Current rating: 0.7A

Voltage rating: 30V



This connector is SIM (UIM) card connector and designed to achieve low profile and space saving. A strong shock such as a fall is endured.

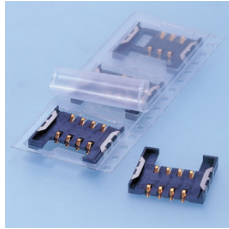
### SCK

*2.54 mm pitch*

Type:

Current rating: A

Voltage rating: V



The connector is designed for the SIM Card, complying with the GSM 11.11 standard, which will be used in the European digital GSM mobile phones. This connector is also suitable for the USIM Card to be used in the Third generation of mobile network (W-CDMA).

### CF CARD MA TYPE

(ADAPTER)

Type: Adapter card, Conversion into cards for PCMCIA / JEIDA Ver.4.1 slot



The use of the adapter card allows existing equipment with PCMCIA slots, the facility to use the newly developed Compact Flash Technology.

> A variety of products are available to be applicable to CF cards types I/II

> Protected against static electricity

### CF CARD MA TYPE

(EJECTOR)

Type: For CF cards, Ejector



Applicable to CF cards types I/II

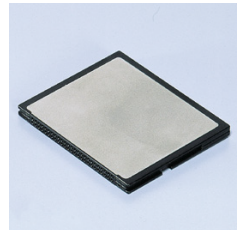
> The assembly of the ejector mechanism to the mounted header is a simple one-touch operation

> The ejector makes contact with the solder tabs of the header, thus preventing static electricity

### CF CARD MA TYPE

(FRAME SET)

Type: For CF cards, Frame kit



The kit is assembled by ultrasonic welding method which provides strong and heat resistant assembly with less time.

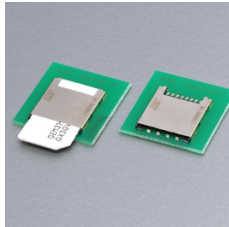
### SCRL

Type: For SIM cards,

Push-pull type

Current rating: 0.7A

Voltage rating: 30V



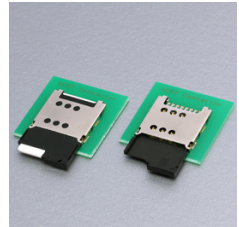
A manual insertion type connector for SIM card and Mini B-CAS card used in mobile phone.

### SCRT

Type: For SIM cards

Current rating: 0.7A

Voltage rating: 30V



> A tray type connector for SIM card Mini B-CAS card used in mobile phone

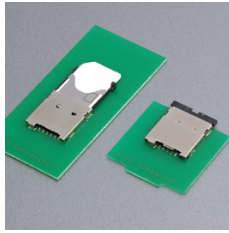
> Low profile type connector with mounting height of 1.45mm

### SCYT

Type: For Micro SIM card

Current rating: 0.7A

Voltage rating: 30V



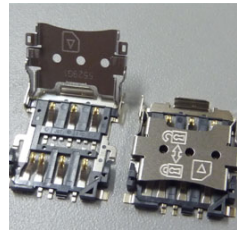
A tray type connector for the Micro SIM (Mini-UICC) card which downsized the conventional SIM card.

### SCZW

Type: For 4FF SIM Card

Current rating: 0.7A

Voltage rating: 30V



This is a flip cover type connector for the 4FF SIM card which downsized the conventional SIM card.

### SD

Type: For SD card

Current rating: 0.5A

Voltage rating: 5V



The SD connector is designed for the SD (secure digital) memory card. Also applicable to the MMC (multi media card). Card-detection switch equipped type is also available.

> Push-push mechanism

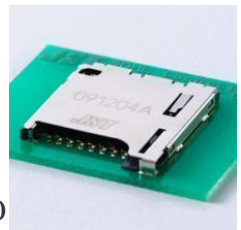
The card can be ejected by simple push-push operation.

### SDHL

Type: For Micro SD card

Current rating: 0.5A

Voltage rating: 100V



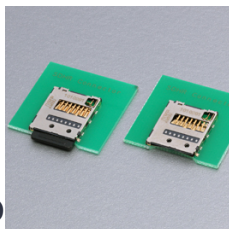
This is the connector for micro-SD card connector in which mounting height of 1.4 mm maximum is kept and push-push mechanism is adopted.

### SDHR

Type: For Micro SD card

Current rating: 0.5A

Voltage rating: 100V



This is the connector for micro SD card connector in which mounting height of 1.45 mm maximum is kept and push-push mechanism is adopted.

### SDK

Type: For SD card

Current rating: 0.5A

Voltage rating: 5V



This connector is designed for SD Card & MMC (Multi media card), complying with the SD Card Association standard, and is with the switch for Write-protection & Card-detection. And due to Push-push mechanism design, its card can be easily ejected by push-push operation.



# **JST** CARD CONNECTORS

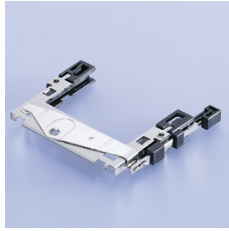
## **SMALL PC CARD MB TYPE (EJECTOR)**

Type: Ejector 68 circuits

Ejector is, with the left button, to be assembled (with screws) after header is mounted.

The frame has the contact point for the grounding clip on the small PC card.

«Card frame (for types I & II cards)»



## **XCC**

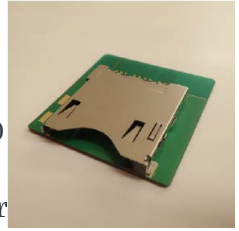
Current rating:

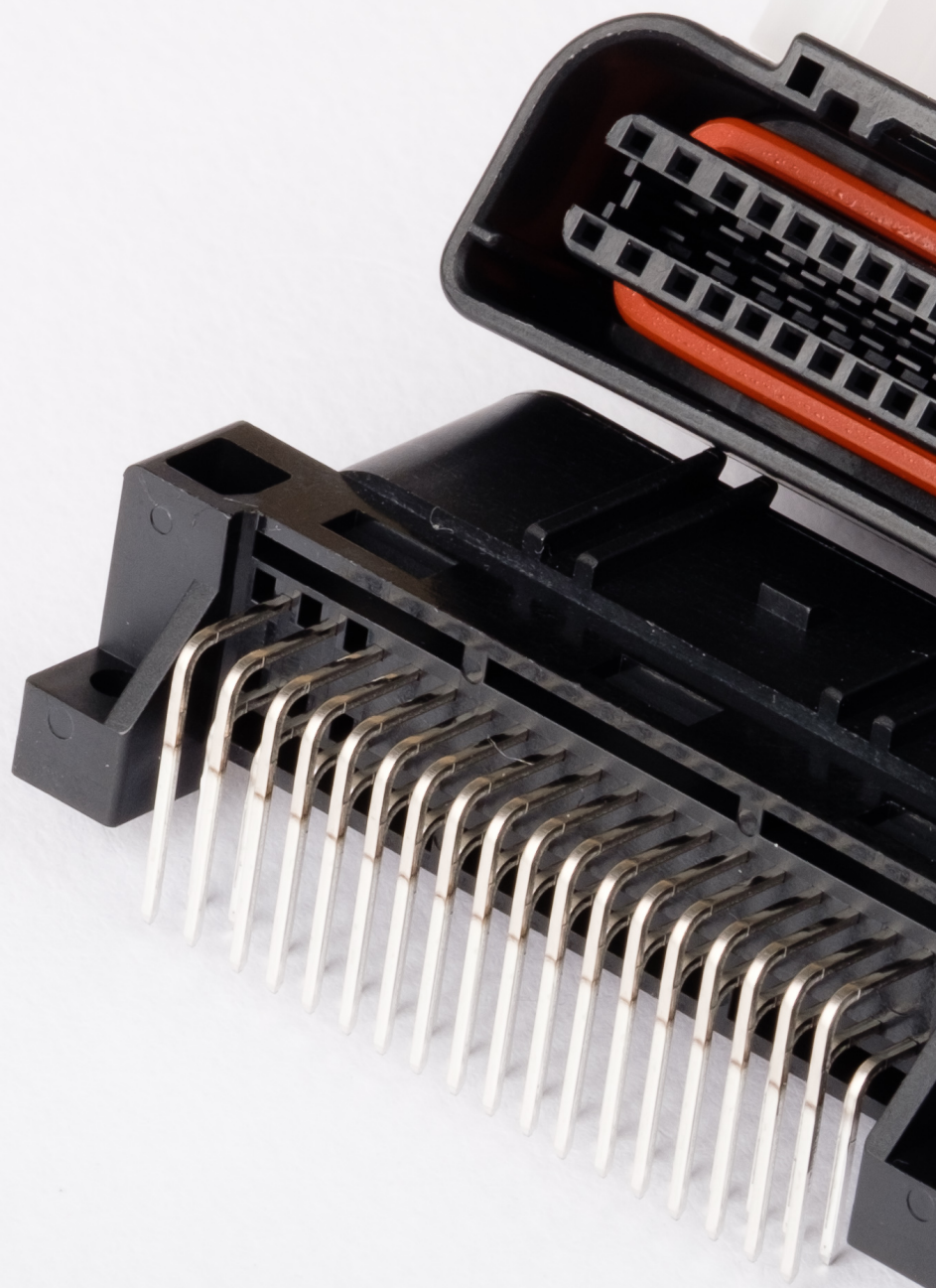
1.2 A for pin No. 10

0.5 A for other pins than pin N°10

This is a card push type connector designed for CFexpress

> Type B card and XQD card







# CHAPTER 14

## AUTOMOTIVE CONNECTORS

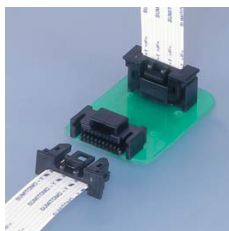


### FOX

*1.25 mm pitch*

Current rating: 1.5A

Voltage rating: 12V



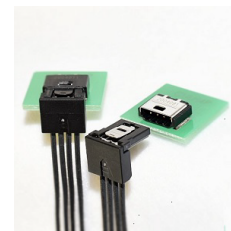
The FOX connector for FFC achieves high operability on the automobile assemble process.

In addition, locking structure is provide on the FFC side to improve reliability of the connector.

### CULH

*1.8 mm pitch*

Current rating: 5A



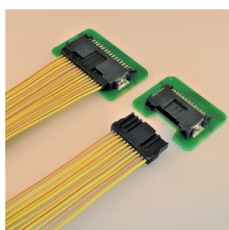
Smallest SMT connector in the world which can be used in automotive application (Height: 3.5mm)

### CMEC

*2 mm pitch*

Current rating: 3A

Voltage rating: Withstanding voltage: 1 000VAC / minute



0.5 terminal unseal WTB connector.

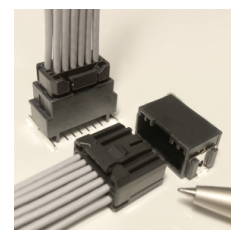
Developed in pursuit of miniaturization and low profile as surface mounting type connector for automotive.

### CPM

*2 mm pitch*

Type: WTB & Waterproof

Current rating: 3A



Miniaturized and low profile surface mounting type connector for automotive. 0.50 terminal with 2.0 mm pitch realized its miniaturization.

### CPT

*2 mm pitch*

Current rating: 3A (0.3sq.mm, Single circuit)

Voltage rating: 50V



Developed in pursuit of miniaturization and low profile as PCB connector for automobile.

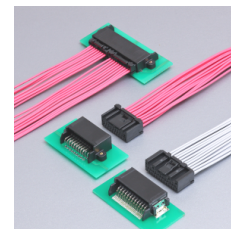
This connector is surface mounting type connector having the spring structure on male terminal disproving the conventional concept.

### MEC

*2 mm pitch*

Current rating: 3A (0.3sq.mm)

Voltage rating: 50V



Developed in pursuit of miniaturization and low profile as surface mounting type connector for automotive.

0.50 terminal with 2.0 mm pitch realized miniaturization.

### ULH

*2 mm pitch*

Current rating: 5A

It conforms the automotive standard; USCAR-2 and LV214 in spite of small and low height.

It is suitable for small space and high temperature environment.



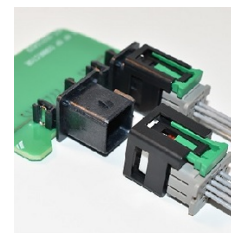
### WMCB

*2 mm pitch*

Type: Waterproof WTB

Current rating: 3A

Voltage rating: Withstanding voltage: 1 000VAC/minute



Developed in pursuit of miniaturization and water-proof as surface mounting type connector for automotive.

To realize miniaturization and high reliability with the 0.50 terminal and CPA design.

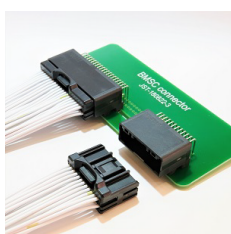
### BMSC

*2.2 mm pitch*

Type: Crimp style & double row

Current rating: 5A (0.5sq.mm, single circuit)

Voltage rating: Withstanding voltage: 1 000VAC/minute



0.64 terminal, 2.2 mm pitch dual-row, WTB connector for automotive applications.

> With secure locking device

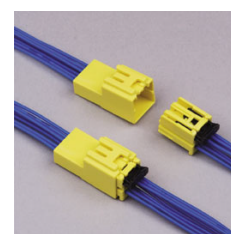
### HIC

*2.2 mm pitch*

Type: Disconnectable type

Current rating: 5A (0.5sq.mm, single circuit)

Voltage rating: 14V



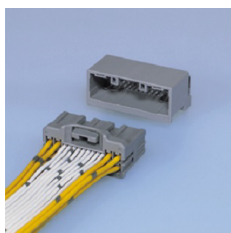
This WTW connector for air-bag has CPA, which allows locking the connector, incomplete mating detection and release of short-circuit at the same time.

### SHC

*2.2 mm pitch*

Current rating: 7A (0.5sq.mm, single circuit)

Voltage rating: 50V



This connector is a small connector that can be widely used for the wiring for automotive electrical equipment.

There are 2 kinds of connector for signal and hybrid type for signal and power supply.

### AIT

*2.54 mm pitch*

Current rating: MAX 5A

Voltage rating: 14V



0.64 unsealed connector series compliant with the standard USCAR footprints.

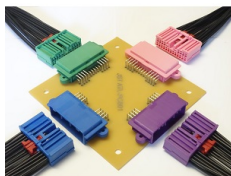
Variations of Keying / Color options and PCB mounting features are available to satisfy customer's needs.

### ATLF

*2.54 mm pitch*

Current rating: 5A

Voltage rating: 14V



21 Circuits 0.64 Unsealed Connector System with CPA and ISL TPA.

Ultra low profile design for high density PCB placement with multiple key codes.

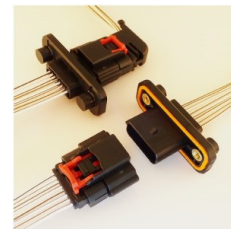
### ATSS

*2.54 mm pitch*

Type: Crimp style & Waterproof

Current rating: MAX 5A

Voltage rating: Withstanding  
voltage:1 000VAC/minute



Low profile 0.64 mm USCAR Sealed Connectors for automotive applications.

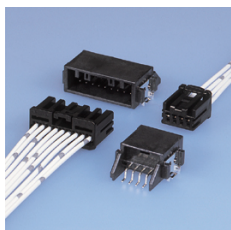
> Thin type

### HCH

*2.54 mm pitch*

Current rating: 5A (0.5sq.mm,  
single circuit)

Voltage rating: 50V



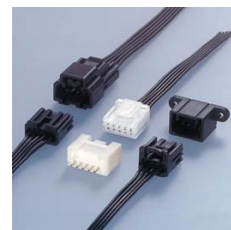
2.54mm pitch, 0.64 unsealed connector for automotive corresponding to the surface mounting.

### HCM

*2.54 mm pitch*

Current rating: 5A

Voltage rating: 14V



0.64 unsealed, low profile, miniaturized connectors for automobile applications.

Meets or exceeds the most performance specifications for automotive electrical connector systems.

### EVZ2

*2.55 mm pitch*

Current rating: 5A

Voltage rating: Withstanding  
voltage:1 000VAC/minute



This connector is WTW, waterproof panel mount connector.

It is possible to connect inside and outside of the case with harness by mounting male connector to the case.

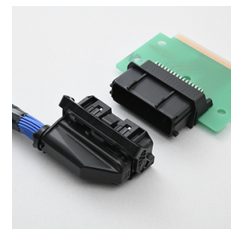
### TCUD

*2.55 mm pitch*

Current rating: Power: 7A

Signal: 5A

Voltage rating: Withstanding  
voltage:1 000VAC/minute



This connector is 48 circuits sealed and lever type connector.

Female connector is ZRO, and TCUD male connector is lower height than ZRO male connector.



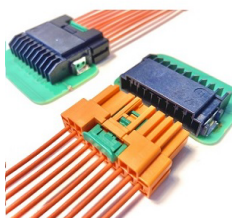
## HVM

*3.5 mm pitch*

Type: WTB & non-Waterproof

Current rating: 5A

Voltage rating: Withstanding  
voltage: 3 000VAC/minute



Developed in pursuit of withstanding high voltage, miniaturization and low profile as surface mounting type connector for automotive.

To realize the withstanding voltage and miniaturization by flange structure and pitch 3.5mm design.

> High current & high voltage

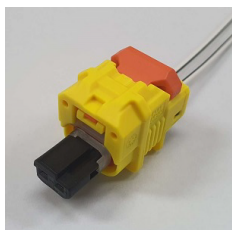
## MSAI

*4 mm pitch*

Type: Sensor

Current rating: 5A

Voltage rating: Withstanding  
voltage: 1 000VAC/minute



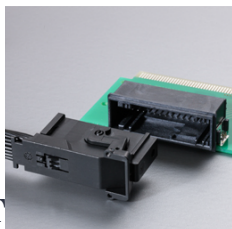
1.2 mm Sealed Connector compliant with the Standard USCAR Footprints.

This connector has the various colors/key codes corresponding to needs.

## ACA

Current rating: 3A

Voltage rating: 14V



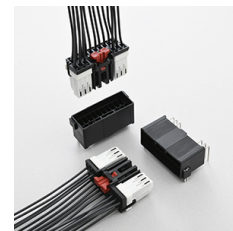
2.54mm pitch, 0.64 unsealed SMT connector with Auto Coplanarity Technology. This technology achieves stable mounting to PCB during re-flow process.

## TLDR

*3.5 mm pitch*

Current rating: 5A

Voltage rating: 600V



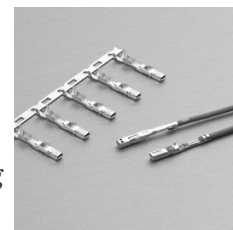
0.64 low profile automotive connectors for High voltage and low current applications.

## 1.5 FEMALE TERMINAL

This is a power terminal for unsealed connector.

This terminal supports a housing of the 3.2mm(H) × 3.2mm(W) pitch.

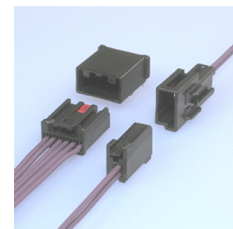
This terminal supports a halogen-free electric wire of small diameter.



## AIT 2

Current rating: MAX 5A

Voltage rating: 14V



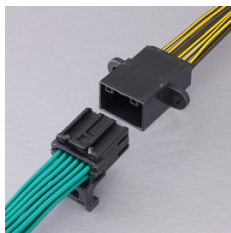
0.64 unsealed low-profile connector series for use in a wide range of automotive applications.

### ARV

Current rating: MAX 5A

Voltage rating: 14V

0.64 Unsealed WTW connection system for unsealed applications, requiring Automotive durability.



### ASG

Type: Sealed

Current rating:

0.64 Terminal: MAX 7A

6.3 Terminal: MAX 40A

Voltage rating: 14V



47 Circuits 0.64/6.3 Hybrid Sealed Connector complaint with the USCAR footprint and performance standard.  
Designed for ABS application.

### ASU

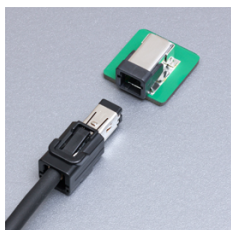
Current rating: 1A (AWG#28)

Voltage rating: 30V

High Speed Differential Transmission.

This connector is for high speed transmission which is suitable for automotive equipment such as ETC/DSRC, navigation system.

Applicable for surface mounting technology.



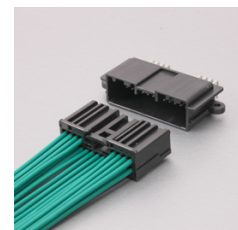
### ATL

Type: MAX 5A

Current rating: 14V

21 Circuits 0.64 Unsealed Connector system.

Ultra low profiled design for high density PCB placement.



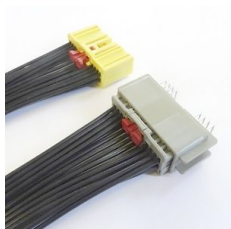
### ATLC

Current rating: 7A (0.75sq.mm)

Voltage rating: 14V

21 Circuits 0.64 Unsealed Connector System with CPA and ISL TPA.

Ultra-low profile design for high density PCB placement.



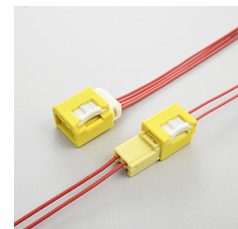
### BAB

Type: WTW & non Waterproof

Current rating: 3A (0.3sq.mm)

5A (0.5sq.mm)

Voltage rating: Withstanding voltage:1,000VAC/minute



0.64 mm WTW and Wire-To-Unit connector with rigid design and spring lock mechanism.  
Spring force prevents half-mating during mating and keeps constant rigid connection between male and female connectors.

### BCC

Current rating: MAX 15A

Voltage rating: MAX 14V

3.2 mm pitch, 14 circuits, 1.5 mm size unsealed connector for automobile applications.

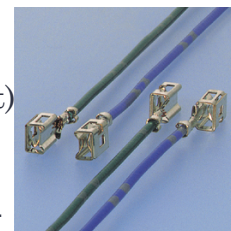


### BIC

Current rating: 3A (Single circuit)

Voltage rating: 16V

This is a connector for motor connection developed for the electric door mirror unit for automotive.



### CIT

Current rating: 5A (0.5sq.mm, single circuit)

Voltage rating: 50V

The miniaturization is realized as air-bag EUC I/O connector for automobile.

This product has various circuit development and several adoption results proven, hence it enables to select the type to meet the automobile.



### CN FOR AUTOMOTIVE

Current rating: 1A

Voltage rating: 250V

Connector for the GPS antenna system of the car navigation system.

The CN connector applies the unique crimping method to the shielding meshed wires, which will result in superior high-frequency characteristics.



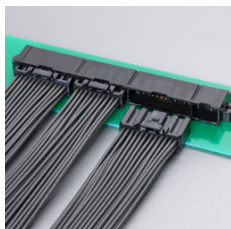
### CPI

Current rating: 3A (0.3sq.mm, single circuit)

Voltage rating: 50V

Developed in pursuit of multi-circuit, miniaturization and low profile as PCB connector for automobile.

This connector is dip type connector having the spring structure on male terminal.



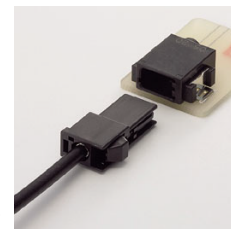
### EA1

Current rating: 1A

Voltage rating: 250V

Connector was developed as a co-axial connector for high-frequency application to automobile.

This connector achieves low profile and miniaturization.





### EA2

SIDE ENTRY TYPE WITH GND SPRING

Type: High speed data transmission & High frequency

Current rating: 1A

Voltage rating: 250V

This is compact high-frequency signal connector with enhanced GND performance, suitable for in-vehicle equipment with antenna communication (GPS, ETC/DSRC, Wi-Fi, Bluetooth). It is also suitable for coaxial video signal transmission in combination with cable-side connectors for noise suppression. It is surface mount technology (SMT) compatible products.



### EA2

SIDE ENTRY TYPE

Type: High speed data transmission & High frequency

Current rating: 1A

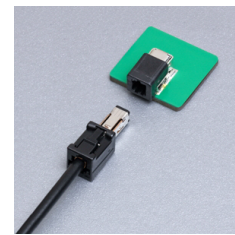
Voltage rating: 250V

High Frequency Co-axial.

This connector is for small high frequency coaxial signal which is suitable for automotive equipment such as ETC/DSRC, navigation system.

It is surface mount technology (SMT) compatible products.

> Space saving



### EA2

TOP ENTRY TYPE

Type: High speed data transmission & High frequency

Current rating: 1A

Voltage rating: 250V

This is compact high-frequency signal connector suitable for in-vehicle equipment with antenna communication (Wi-Fi, Bluetooth).

It is also suitable for coaxial video signal transmission in combination with cable-side connectors for noise suppression. It is through-hole reflow (THR) compatible products.



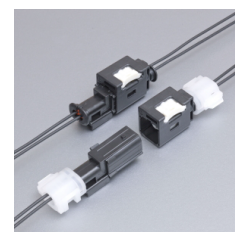
### FAB

Current rating: MAX 5A

Voltage rating: 14V

0.64mm single sealed WTW connector with rigid design and spring lock mechanism.

Spring force prevents half-mating during mating and keeps constant rigid connection between male and female connector.



### GIT

Current rating: 5A

Voltage rating: Withstanding voltage: 1 000VAC/minute

Realized low insertion force with lever mechanism.

These connector have the variousable to color/key/pin arrange corresponding to needs, hence the connector type suitable can be selected.



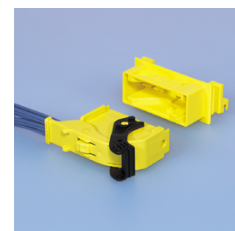
### GIT 18P TYPE

Current rating: 5A (0.5sq.mm, single circuit)

Voltage rating: 14V

This connector is realized the miniaturization as air-bag ECU for automobile and low insertion force by using lever.

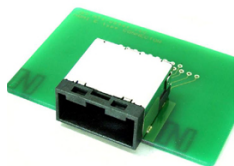
This connector has the various color/key code corresponding to needs, hence the connector type suitable for the vehicle can be selected.



### HIE

Current rating: 0.5A

Voltage rating: 40V



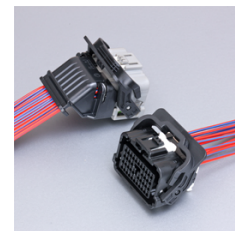
This HIE connector complies with HDMI E Type for automobile equipment such as navigation system.

### HPS

Type: Sealed

Current rating: MAX 5A

Voltage rating: 14V



40 Circuits 0.64 Sealed Connector

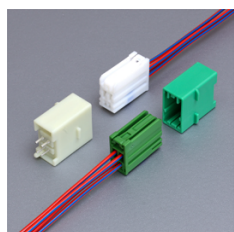
### HSDP

Current rating:

0.64 Terminal: MAX 5A

1.5 Terminal: MAX 14A

Voltage rating: 14V



0.64/1.5 Hybrid circuits connector

### HVD

Current rating: MAX 4.5A

Voltage rating: 14V



0.64 unsealed alignment-free, low profile surface mount connector for automobile applications.

### HVGT

Current rating: 30A

Voltage rating: 300V



2 Circuits 14.5 Sealed, Shielded, Fused Connector System in an Automotive environment.

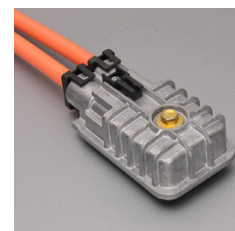
Designed for high voltage applications, requiring Fusing and Splitting.

### HVGW

Type: Sealed

Current rating: 135A

Voltage rating: 300V



2 Circuits 14.5 Sealed, Shielded Connector System.

Designed for high current, high voltage applications in an Automotive environment

### JIA

Type: Sealed

Current rating:

0.63mm terminal: 5A

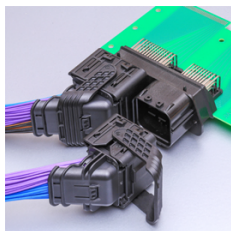
(0.5sq.mm, Single circuit)

1.5mm terminal: 15A

(1.25sq.mm, Single circuit)

Voltage rating: 14V

0.63mm/1.5mm Sealed hybrid type Connector  
> For WTB connection



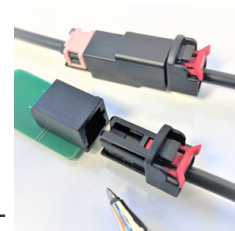
### JRE WTB

Type: High speed data transmission & High frequency

Current rating: 3A

Voltage rating: Withstanding voltage: 1 000VAC/minute

Fully compatible and designed based on requirements from the Open Alliance TC9 (1000BASE-T1) for telematics and automotive communications technology.



### JRE WTW

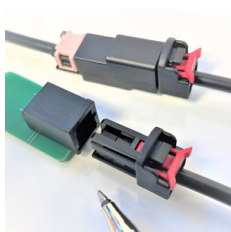
Type: Non-waterproof

Current rating: 3A

Voltage rating: Withstanding voltage: 1 000VAC/minute

Fully compatible and designed based on requirements from the Open Alliance TC9 (1000BASE-T1) for telematics and automotive communications technology.

> High speed data transmission & High frequency



### JRF WTB

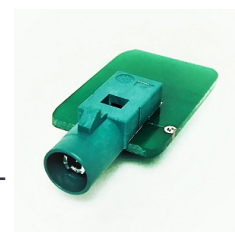
Type: High speed transmission

Current rating: 1A

Voltage rating: Withstanding voltage: 800VAC/minute

Fully compatible and designed based on requirements from the FAKRA RF and USCAR standards for telematics and automotive communications technology.

> For WTB connection



### JRF WTW

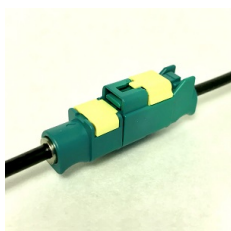
Type: Crimp style

Current rating: 1A

Voltage rating: Withstanding voltage: 800VAC/minute

Fully compatible and designed based on requirements from the FAKRA RF and USCAR standards for telematics and automotive communications technology.

> High speed transmission



### JRS WTB

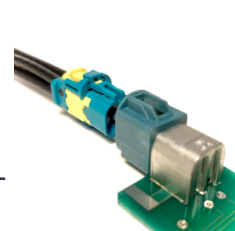
Type: High speed transmission

Current rating: 1A

Voltage rating: Withstanding voltage: 800VAC/minute

Automotive coaxial connector series with miniaturized and multi poles while maintaining FAKRA performance.

> For WTB connection





### JRSS WTB

Type: High-speed transmission

Current rating: 1A

Voltage rating: Withstanding voltage: 800VAC/minute



This is the water-proof mini FAKRA connector and it has the original interface.

> Crimp style & Waterproof connector

### JUNCTION BOX

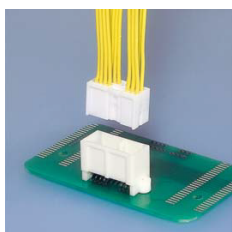
This product is developed by the custom-made for junction box, fuse box, and relay box for automobile.



### MIO

Current rating: 5A (0.5sq.mm, Single circuit)

Voltage rating: 12V



Low profile type connector for interface of automotive electrical equipment.

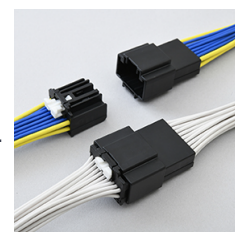
### MSA

Current rating:

MAX 14A (0.75sq.mm, Single circuit)

MAX 19A (1.5sq.mm, Single circuit)

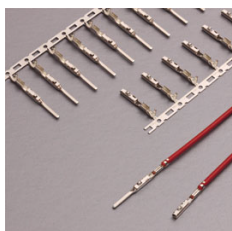
Voltage rating: 14V



1.2 mm unsealed WTW connector system for automotive applications.

### MSA TERMINAL

1.2 mm terminal compliant with USCAR standards.

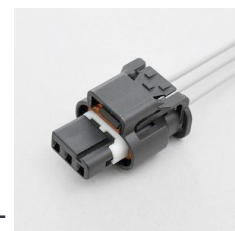


### MSAZ

Type: Sensor

Current rating: 7A (0.3sq.mm, Single circuit)

Voltage rating: Withstanding voltage: 1,000VAC/minute



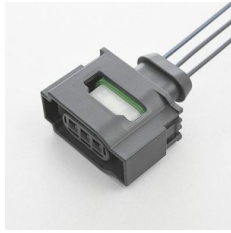
1.2mm sealed connector compliant with the Standard USCAR Footprints.

### MSZ

Type: Sensor

Current rating: 5A (0.3sq.mm to 0.5sq.mm, Single circuit)

Voltage rating: Withstanding voltage: 1 000VAC/minute

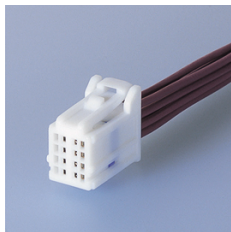


2.8mm sealed connector compliant with the Standard VDA Interface.

### NAC-I

Current rating: MAX 5A

Voltage rating: 14V



Low profile dual row connector compliant with the USCAR performance specifications.

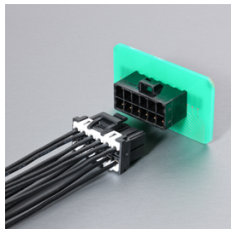
For general automotive applications.

### PEA

Current rating: Power supply circuit / 6.5A (0.75sq.mm)

Signal circuit / 1A (0.5sq.mm)

Voltage rating: 50V

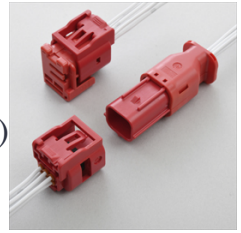


This connector withstands High Current and is used for Ballast to Lamp System.

### MWT

Type: Sealed

Current rating: 3.5A (full circuits) (single circuit)



Compliant with the ISO 19689, 0.64 mm individual waterproof, 6 pole WTW connection connector.

The retainer is a pre-set type for both female and male housing.

Protection cover to female connector from water and dust is selectable to the installation direction.

### NFG

Type: Sealed

Current rating:

5A (0.5sq.mm)

7A (0.75sq.mm)

Voltage rating: 50V



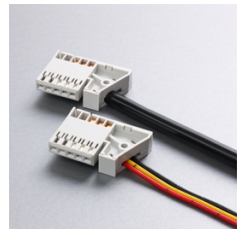
2.3(090) terminal sealed connector with high vibration durability.

Reduce abrasion by the vibration, and high reliability is provided.

### PFW

Current rating: 5A

Voltage rating: 14V



This connector has versatile terminal and is used for top column module.

### RAD

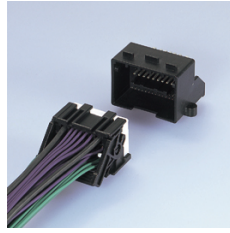
Current rating:

Signal: MAX 5A (0.64 Terminal)

Power: MAX 15A (1.5 Terminal)

Power: MAX 25A (2.8 Terminal)

Voltage rating: 14V



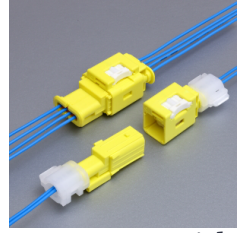
0.64/1.5 /2.8 hybrid circuits unsealed WTB connector with lever mechanism proven in Automotive Radio application.

### SAB

Type: Sealed

Current rating: 5A

Voltage rating: 14V



0.64mm individual sealed WTW connector with Rigid design and spring lock mechanism.

Spring force prevents half-mating during mating and keeps constant rigid connection between male and female connector.

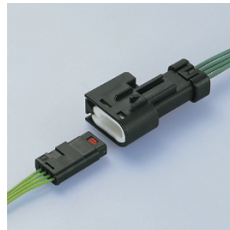
This connector has short terminal to prevent accidental electrical discharge.

### SAC

Type: Sealed

Current rating: MAX 5A

Voltage rating: 14V

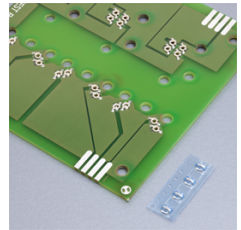


Miniaturized 0.64mm Sealed WTW connector for automotive application.

### SBO

Current rating: 3A

Voltage rating: 24V



This contact can be placed anywhere on a PC board. This makes it flexible to connect with other male components with different pitches and different numbers of pins.

The receptacle is mainly designed inside the PC board thickness to have a low profile connector.

### SBO2

Current rating: 3A

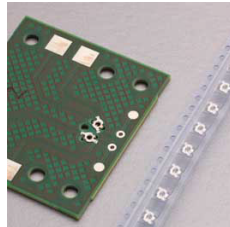
Voltage rating: 24V

This contact can be placed anywhere on a PCB.

This makes it flexible to connect with other male components with different pitches and different numbers of pins.

The receptacle is designed inside the PCB thickness.

This makes it possible to have reflow processes on both sides of the PCB without damaging the SBO contact.



### SHUNT RING

Connector for an inflator.





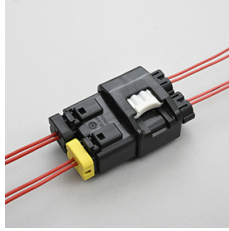
# JST AUTOMOTIVE CONNECTORS

## SISC

Type: WTW & Waterproof

Current rating: 5A

Voltage rating: Withstanding voltage: 1 000VAC/minute



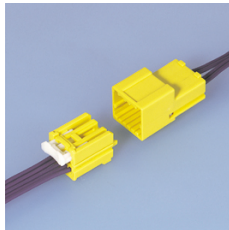
0.64 mm mat sealed wire to wire connector with rigid design and spring lock mechanism.

Spring force prevents half-mating during mating and keeps constant rigid connection between male and female connector.

## SNA

Current rating: MAX 5A

Voltage rating: 14V



0.64 unsealed wire-to-wire connector with CPA and shorting bar mechanisms for Air-bag application.

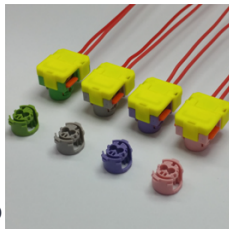
Providing Connector Position Assurance, positive mating and completion of circuit in one pressing motion.

## SQB

Current rating: MAX 3A

Shunt-less Squib Connector.

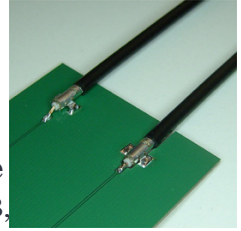
Connector for air-bag with Go /No Go system, which allows locking connector and detect incomplete mating.



## SJG

This is a terminal to fix a coaxial cable to the PCB.

By press-fitting the dimple on the terminal foot portion into the PCB, the terminal is fixed when installing it onto the PC board and the soldering work is improved.

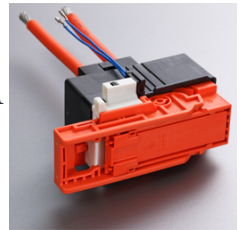


## SPH2

Type: Power supply circuit / 100A

Signal circuit / 5A

Current rating: 450V



This is the connector for power supply cutoff switch used for the battery unit of hybrid car, etc..

This connector is realized low insertion force by using lever mechanism, and has a mechanism detecting a mating state electrically and fuse, etc.

## SQF

This connector for air-bag is simple, compact and not easy to come off without CPA.



### SQH

This connector for air-bag has intelligent CPA, which allows locking the connector, incomplete mating detection and release of short-circuit at the same time.



### SQM

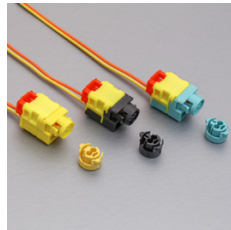
This connector for air-bag has intelligent CPA, which allows locking the connector, incomplete mating detection and release of short-circuit at the same time.



### SQN

Type: SQUIB & Shunt Ring  
Current rating: 3A

This connector for air-bag, conforming to ISO 19072-4 standard configuration, has intelligent CPA, which allows locking the connector, incomplete mating detection and release of short-circuit in the same time.



### SQS

This connector for air-bag has intelligent CPA, which allows locking the connector, incomplete mating detection and release of short-circuit at the same time.



### SQSK

Current rating: MAX 3A

Conforming to ISO 19072-4.



### SQW

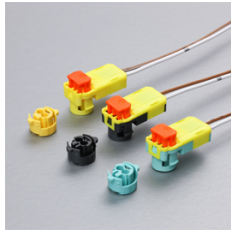
This connector for air-bag has intelligent CPA, which allows locking the connector, incomplete mating detection and release of short-circuit at the same time and achieves high resistance to noise at the specific frequency range with a built-in coil.



### SQXW

Current rating: MAX 3A

Conforming to ISO 19072-4.



### SQZ

Type: SQUIB & Shunt Ring

Current rating: 3A

Conforming to ISO 19072-4.



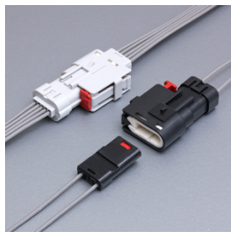
### SRV

Type: Sealed

Current rating: MAX 7A

Voltage rating: 14V

1.2 Sealed Connector

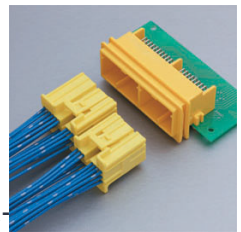


### TRZ

Current rating: 5A

Voltage rating: 50V

Air-bag ECU I/O connector for automobile.



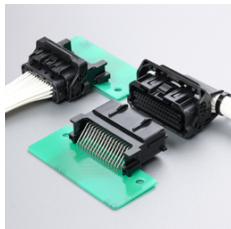
### ZRO

Current rating:

Power supply circuit / 7A

Signal circuit / 5A

Voltage rating: 50V

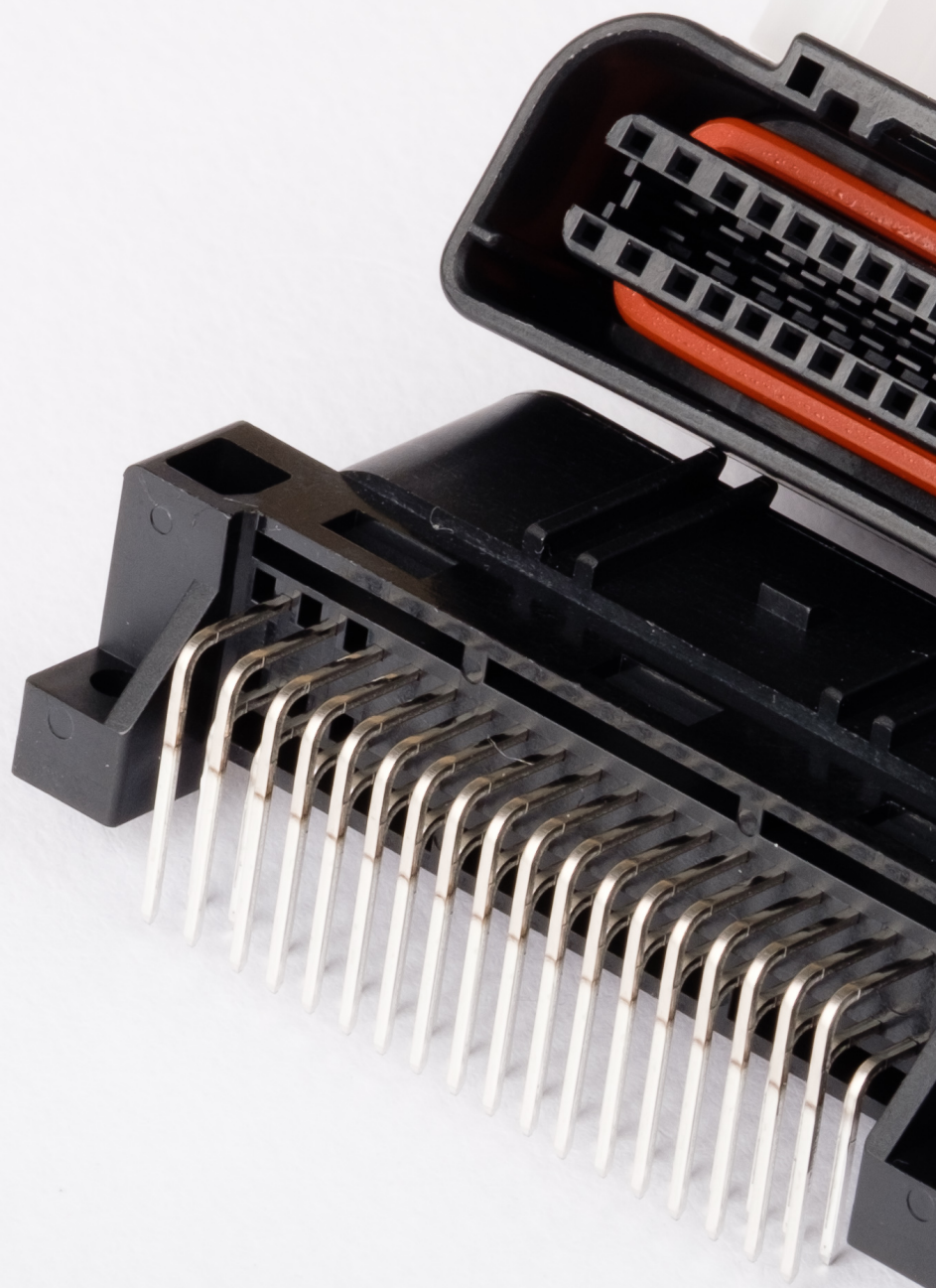


This connector is an interface connector, 48 and 36 circuits sealed and lever type.



# SOLDERLESS TERMINALS & SPLICES









# CHAPTER 15

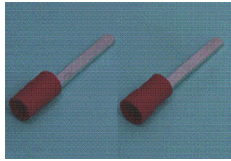
## SOLDERLESS TERMINALS



### BLADE TERMINAL

(AF-type Vinyl-insulated (funnel-entry))

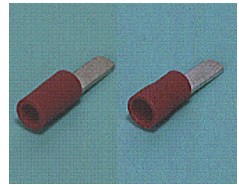
Type: Blade type with insulator



### BLADE TERMINAL

(AF-type Vinyl-insulated with copper sleeve (straight, flared))

Type: Blade type with insulator



### BLADE TERMINAL

(AF-type, Non-insulated )

Type: Non-insulated & blade type



### BLADE TERMINAL

(AF-type, Nylon-insulated) (straight)

Type: Blade type with insulator



### BLADE TERMINAL

(AF-type, Vinyl-insulated) (flared)

Type: Blade type with insulator



### BLADE TERMINAL

(AF-type, Vinyl-insulated) (straight)

Type: Blade type with insulator



### BULLET TERMINAL

(PC type)(Fully-nylon-insulated with copper sleeve)

Type: Quick connection type with insulator



### BULLET TERMINAL

(Vinyl-insulated with copper sleeve)

Type: Quick connection type with insulator



### COPPER TUBULAR LUGS

(One-hole)

Type: Non insulated & copper tubular type



### COPPER TUBULAR LUGS

(Two-holes)

Type: Non insulated & copper tubular type



### DOUBLE-HOLE TERMINAL

(RD TYPE)

Type: 2 holes & non-insulated type



### FLAG TERMINAL

(FG TYPE)

Type: Flag type



### **FORK TONGUE TERMINAL (X-type, Non-insulated)**

Type: Non-insulated type & Fork tongue terminal X type



### **FORK TONGUE TERMINAL (X-type, Vinyl-insulated)**

Type: Fork tongue terminal X type with insulator



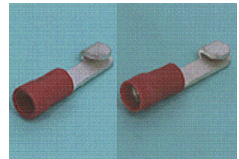
### **FORK TONGUE TERMINAL (Y-type, Non-insulated)**

Type: Fork tongue terminal Y & Non-insulated type



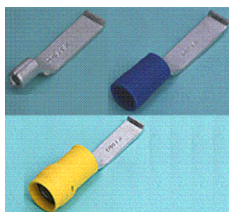
### **KNIFE DISCONNECT TERMINAL (K-type)**

Type: Knife disconnect type & with insulator



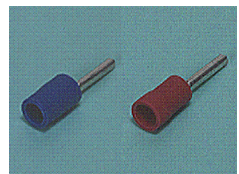
### **LIPPED BLADE TERMINAL (AH-type)**

Type: Lipped blade type



### **PIN TERMINAL (PC-type Vinyl-insulated (straight, flared))**

Type: Pin with insulator type

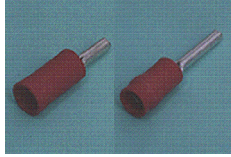




### PIN TERMINAL

(PC-type Vinyl-insulated with copper sleeve)  
(straight, flared)

Type: Pin type with insulator



### PIN TERMINAL

(PC-type, Non-insulated)

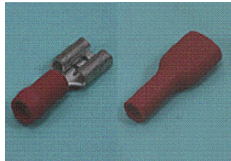
Type: Pin type & non-insulated



### QUICK DISCONNECT TERMINAL

(Female, Vinyl-insulated with funnel-entry  
copper sleeve/Fully-insulated with copper  
sleeve)

Type: Quick disconnecton type  
with insulator



### QUICK DISCONNECT TERMINAL

(Male, Female, Piggyback / Vinyl-insulated  
with copper sleeve)

Type: Quick disconnecton type  
with insulator



### RING TONGUE TERMINAL

(R-type, Non-insulated Heavy duty)

Type: Ring terminal non insula-  
ted type



### RING TONGUE TERMINAL

(R-type, Non-insulated)

Type: Ring terminal non insula-  
ted type



### RING TONGUE TERMINAL (R-type, Non-insulated/Bent at 90 degrees)

Type: Ring terminal & non-insulated type



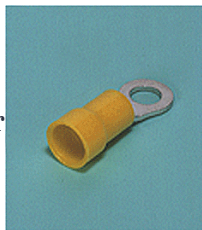
### RING TONGUE TERMINAL (R-type, Non-insulated/of nickel)

Type: Ring terminal & non-insulated type



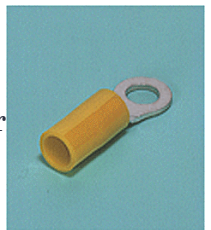
### RING TONGUE TERMINAL (R-type, Nylon-insulated)(flared)

Type: Ring terminal with insulator



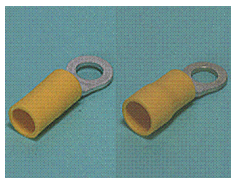
### RING TONGUE TERMINAL (R-type, Nylon-insulated)(straight)

Type: Ring terminal with insulator



### RING TONGUE TERMINAL (R-type, Vinyl-insulated (funnel-entry ))

Type: Ring terminal with insulator



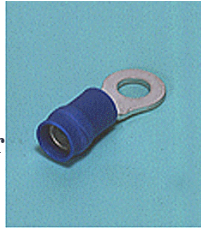
### RING TONGUE TERMINAL (R-type, Vinyl-insulated with copper sleeve) (Medium size)

Type: Ring terminal with insulator



### **RING TONGUE TERMINAL** (R-type, Vinyl-insulated with copper sleeve) (flared)

Type: Ring terminal with insulator



### **RING TONGUE TERMINAL** (R-type, Vinyl-insulated with copper sleeve) (straight)

Type: Ring terminal with insulator



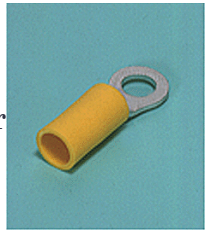
### **RING TONGUE TERMINAL** (R-type, Vinyl-insulated) (flared)

Type: Ring terminal with insulator



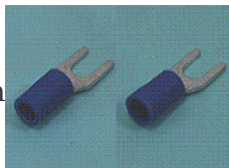
### **RING TONGUE TERMINAL** (R-type, Vinyl-insulated) (straight)

Type: Ring terminal with insulator



### **SPADE TONGUE TERMINAL** (A-type Vinyl-insulated (funnel-entry))

Type: Spade tongue terminal with insulator



### **SPADE TONGUE TERMINAL** (A-type; Non-insulated)

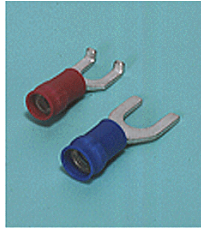
Type: Spade tongue terminal, non insulated type





### SPADE TONGUE TERMINAL (A-type/B-type, Vinyl-insulated with copper sleeve) (flared)

Type: Spade tongue terminal with insulator



### SPADE TONGUE TERMINAL (A-type/B-type, Vinyl-insulated with copper sleeve) (straight)

Type: Spade tongue terminal with insulator



### SPADE TONGUE TERMINAL (A-type/B-type, Vinyl-insulated) (flared)

Type: Spade tongue terminal with insulator



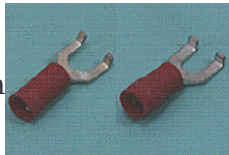
### SPADE TONGUE TERMINAL (A-type/B-type, Vinyl-insulated) (straight)

Type: Spade tongue terminal with insulator



### SPADE TONGUE TERMINAL (B-type Vinyl-insulated (funnel-entry))

Type: Spade tongue terminal with insulator



### SPADE TONGUE TERMINAL (B-type, Non-insulated)

Type: Spade tongue terminal non-insulated type

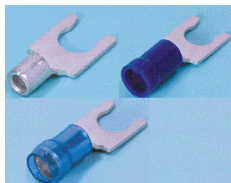




## SOLDERLESS TERMINALS

### SPADE TONGUE TERMINAL (LS-type)

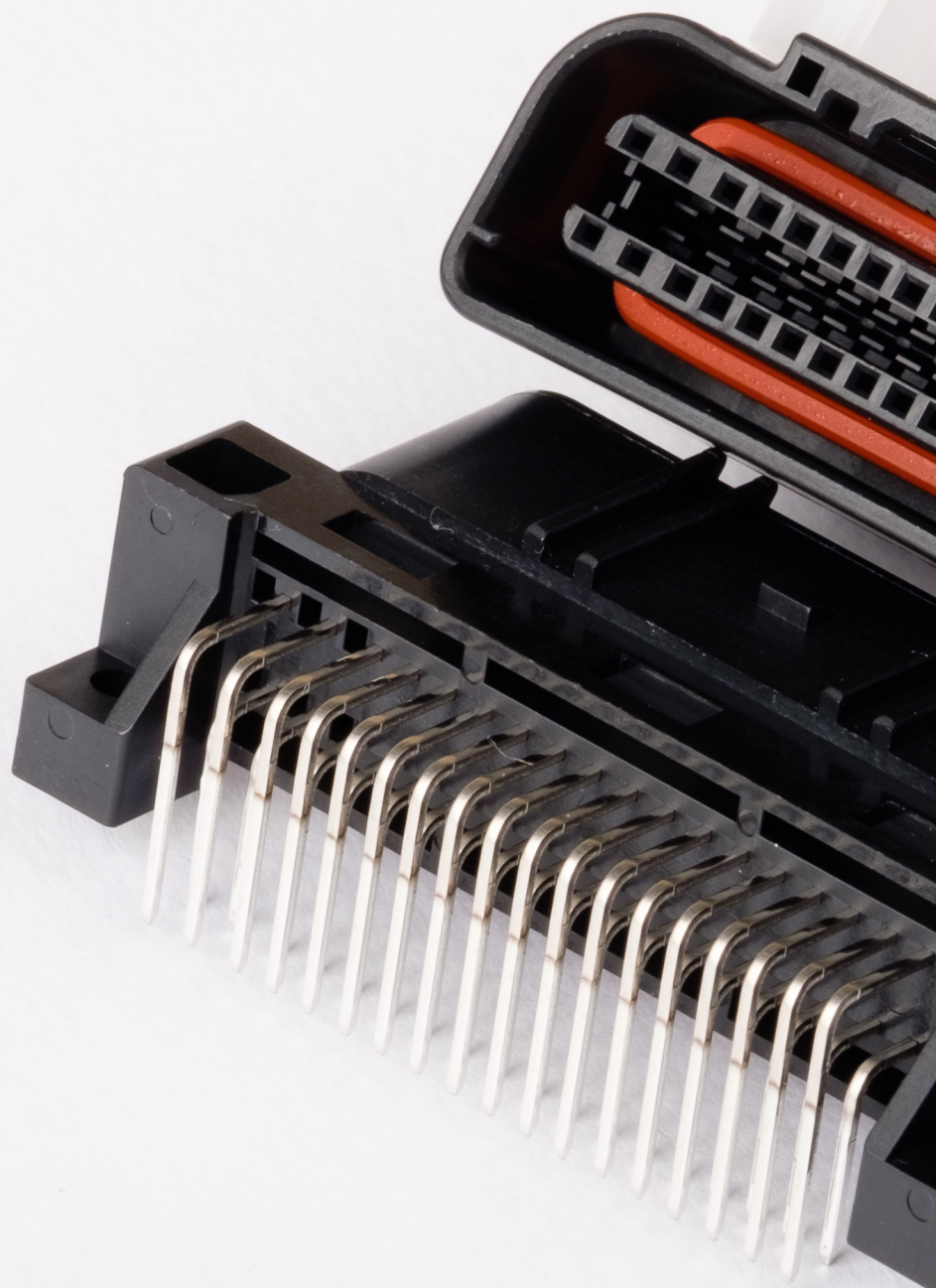
Type: Spade tongue terminal



### TAPE-ON TERMINALS / SPLICES

Type: Other, non-insulated type







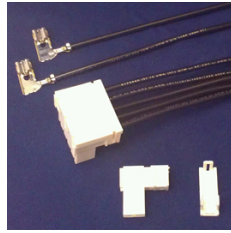


# CHAPTER 16

## CHAIN TERMINALS / SPLICES

### **RARSF** *5 mm pitch*

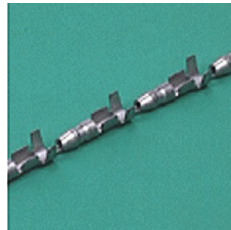
Type: Other  
Current rating: 15A (AWG#14)  
(20A contact under development)  
Voltage rating: 250V



- > Right angle design
- > Easy insertion, positive locking
- > Ultra low insertion force
- > Contact back out preventive design
- > Keying options

### **BULLET TERMINAL NOMI- NAL 4MM DIA. MALE**

Type: Connection by bullet terminal



### **BULLET TERMINAL NOMI- NAL 4MM DIA. FEMALE**

Type: Connectin by bullet terminal



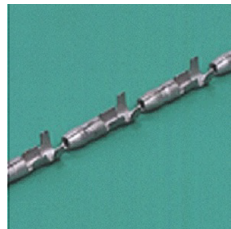
### **BULLET TERMINAL NOMI- NAL 5MM DIA. FEMALE**

Type: Connection by bullet terminal



### **BULLET TERMINAL NOMI- NAL 5MM DIA. MALE**

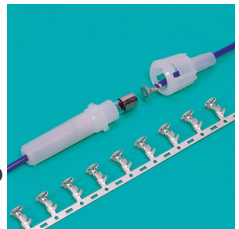
Type: Connection by bullet terminal



### **BUTTON CONTACT**

Type: Other

This is a connection component to be incorporated into lamp sockets and fuse holders, and has excellent reliability and workability compared to conventional soldering types, and is widely used in automobiles.

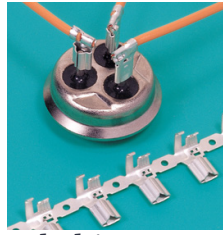


### CLUSTER PIN TERMINAL

Type: Other

This terminal is used to connect a cluster pin (2.3mm in diameter) to a lead of a motor hermetically sealed in a compressor of a refrigerator, freezer or air conditioner.

The contact is made of tin-plated phosphor bronze to ensure a highly reliable connection for an extended period.



### CLUSTER SOCKET

Type: Other

This three circuit connector is used to connect cluster pins (2.3mm in diameter) to the leads of a motor hermetically sealed in a compressor of a refrigerator or a freezer.

The contacts and housing are especially designed and made of high-quality materials for high heat resistance and superior durability.



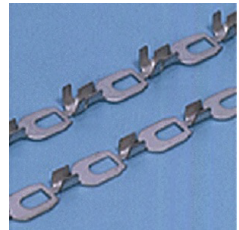
### FORK TONGUE TERMINAL (Locking type)

Type: Spade tongue terminal



### FORK TONGUE TERMINAL (With or Without insulation grip)

Type: Spade tongue terminal



### IG

Type: Other

Current rating: Stainless steel / 320mA & Copper alloy / 5A

Voltage rating: Stainless steel / 23KV & Copper alloy / 200V

This IG connector is to connect the ignition plug (Plug pin dia. 2.0mm) of the Hot Water Supply and Heater.

Ensure easy operation, reliable connection and easy maintenance.



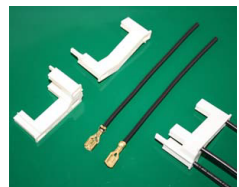
### IS

Type: Other

Current rating: 20A (AWG#12)

Voltage rating: 250V

- > Easy insertion, positive locking
- > Ultra low insertion force
- > Contact back out preventive design
- > Polarizing rib



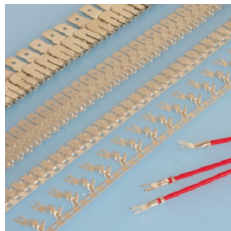


### MG CONNECTOR

Type: Other

This is a terminal for connecting the terminal part of the copper magnet wire.

Various types of insulating coated wires can be connected easily and efficiently.

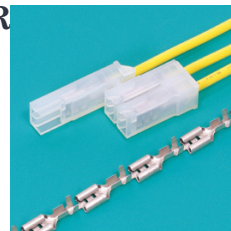


### MICROSWITCH CONNECTOR

Type: Other

Current rating: 10A

Voltage rating: 250V



This microswitch connector conforms to the Electrical Appliance and Material Safety Law in Japan. The connector can be easily attached to a microswitch with light force, facilitating assembly work. It is also constructed to prevent misinsertion of the contacts when inserting them into the housing. Easy to install, it ensures improved working efficiency in the assembly of harnesses.

### PS CONNECTOR

Type: Other

Current rating: 25A (#250(S)  
AWG#10)

Voltage rating: 250V

> Secure locking mechanism and  
Low insertion force

> Stable contacting performance

> Misinsertion (reverse insertion) prevention  
structure for the contact

> Misinsertion prevention structure for the tab  
(Short type housing)

> Glow wire compatible products are also available for short type housings performance

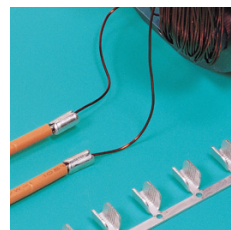


### PIERCING SPLICE

Type: Other

This splice has special channels inside its crimp areas so that insulation-coated windings (magnet wire like enamel-coated wire, etc.) can be electrically connected without removing the insulation coating.

It is suited for connections between the windings of motors, relays and other rotating devices, and the connections between the windings and the leads of such devices.



### RING TONGUE TERMINAL

(With or without insulation grip)

Type: Ring terminal



### RING TONGUE TERMINAL

(With tooth lock)

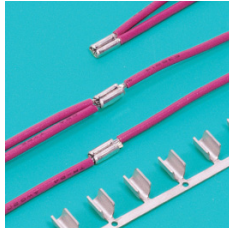
Type: Ring terminal



### SPC SPLICE

Type: Other

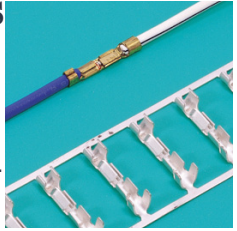
This WTW splice is used extensively for straight, branching, and end connections.



### SPLICE FOR HEATER WIRES

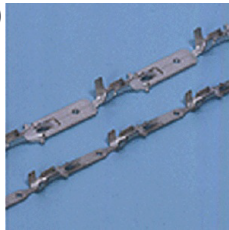
Type: Other

This splice is used to connect a vinyl-insulated wire to a defrosting heater wire of a refrigerator or a freezer. The barrel of the splice has a lid feature that prevents the heater wire from being damaged or broken during crimping.



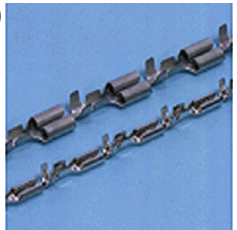
### TAB-IN TERMINAL #110 #250 TAB-IN TAB TYPE

Type: Tab-on/in type



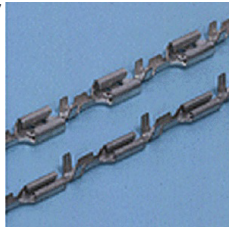
### TAB-IN TERMINAL #110 #250 TAB-IN TYPE

Type: Tab-on/in type



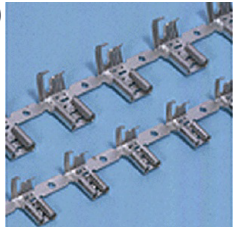
### TAB-IN TERMINAL #110 #187 TAB-ON TYPE

Type: Tab-on/in type



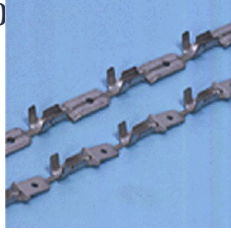
### TAB-IN TERMINAL #110 #250 TAB-ON FLAG TYPE

Type: Tab-on/in type



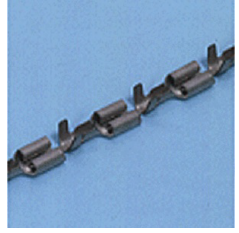
### TAB-ON TERMINAL #187 #250 TAB-ON TAB TYPE

Type: Tab-on/in type



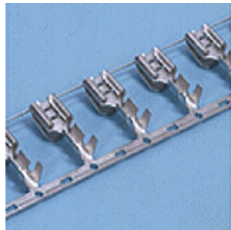
### TAB-ON TERMINAL #205 TAB-ON TYPE

Type: Tab-on/in type



### TAB-ON TERMINAL #250 TAB-ON PIGGYBACK TYPE

Type: Tab-on/in type



### TAB-ON TERMINAL #250 TAB-ON TYPE

Type: Tab-on/in type







# CHAPTER 17

## SOLDERLESS SPLICES

### BUTT SPLICE

(C-type Non-insulated/WSC-type Non-insulated, Vinyl or nylon-insulated)

Type: Batt & non-insulated type



### BUTT SPLICE

(C-type Nylon-insulated)

Type: Batt type with insulator



### BUTT SPLICE

(C-type Vinyl-insulated)

Type: Batt type with insulator



### CLOSED-END SPLICE

(CE-type/SD-type)

Type: Closed-end type with insulator



### COPPER TUBULAR SPLICE

(CZ-type)

Type: Copper tubular type



### OVAL TYPE SPLICE

(CV-type)

Type: Batt & non-insulated type



### OVAL TYPE SPLICE (PV-type)

Type: Non-insulated & parallel type



### PARALLEL SPLICE (P-type Non-insulated)

Type: Non-insulated & parallel type



### PARALLEL SPLICE (P-type Nylon-insulated)

Type: Parallel type with insulator



### PARALLEL SPLICE (P-type Vinyl-insulated)

Type: Parallel type with insulator



### WINDOW TYPE BUTT SPLICE (CW-type Non-insulated)

Type: Batt & non-insulated type



### WINDOW TYPE BUTT SPLICE (CW-type Nylon-insulated)

Type: Batt type with insulator







## SOLDERLESS SPLICES

### WINDOW TYPE BUTT SPLICE (CW-type, Nylon-insulated with copper sleeve)

Type: Batt type with insulator





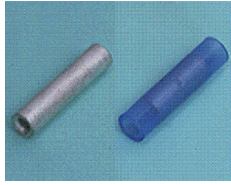
# CHAPTER 18

## DIN TYPE SOLDERLESS TERMINALS / SPLICES

# **JST** DIN TYPE SOLDERLESS TERMINALS / SPLICES

## **DIN TERMINALS / SPLICES BUTT SPLICE**

Type: Batt type



## **DIN TERMINALS / SPLICES INSULATED DISCONNECT TERMINAL**

Type: Quick connection & tab-on /  
in type



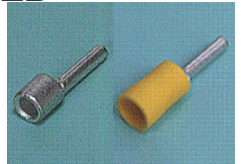
## **DIN TERMINALS / SPLICES PARALLEL SPLICE**

Type: Parallel type



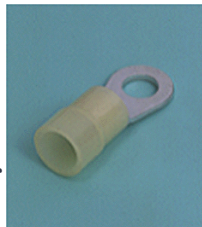
## **DIN TERMINALS/ SPLICES PIN TERMINAL NON-INSULATED / INSULATED**

Type: Pin type



## **DIN TERMINALS / SPLICES RING TONGUE TERMINAL, INSULATED**

Type: Ring terminal with insulator



## **DIN TERMINALS / SPLICES RING TONGUE TERMINAL, NON-INSULATED**

Type: Ring terminal non-insulated  
type

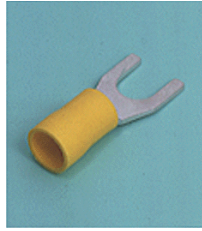




# **JST** DIN TYPE SOLDERLESS TERMINALS / SPLICES

## **DIN TERMINALS / SPLICES SPADE TONGUE TERMINAL INSULATED**

Type: Spade tongue terminal with insulator



## **DIN TERMINALS / SPLICES SPADE TONGUE TERMINAL NON-INSULATED**

Type: Spade tongue terminal non-insulated type

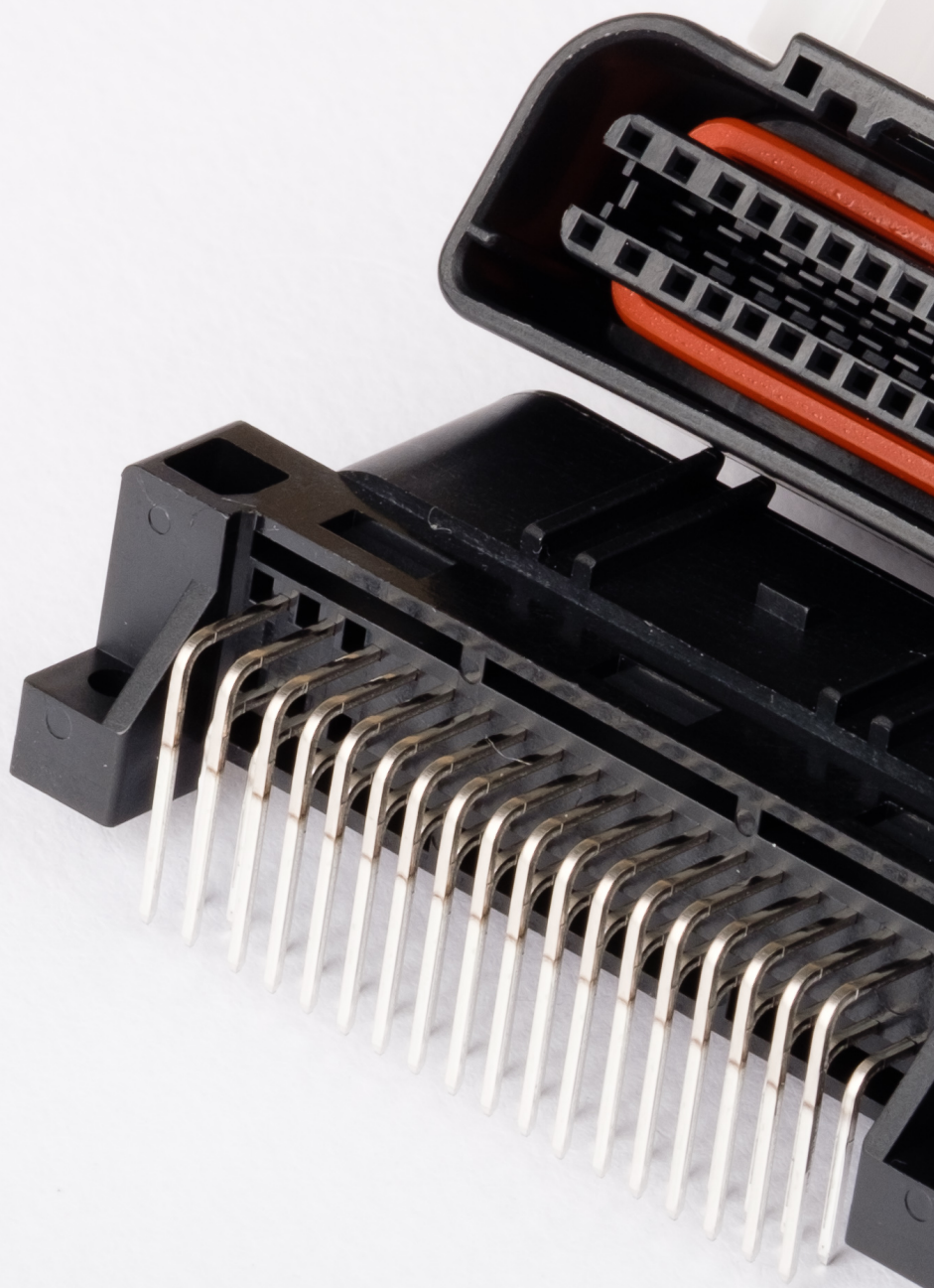




# TOOLING









# CHAPTER 19

## HAND TOOLS

# JST

## PCR HAND TOOLS

Our PCR hand tools are equipped with a locator which optimizes contact installation and wire insertion. Therefore they simplify the achievement of crimp cycle.

Their handles reduce crimping effort:

- > The symmetric crimp dies & locator can be used by right & left-handed users.
- > They are compact & light.
- > They allow an accurate crimping for the professional users in search of constant reliability & quality.
- > Accurate crimping of solderless connections.
- > Lifetime exceeding 50 000 cycles.



- > Maintain the pushed locator, insert the contact, release, then place the bare thread.
- > A pressure on sleeves and the contact is set according to our crimping specifications.

### FEATURES

- LENGHT : 190 mm  
HEIGHT : 74 mm  
WIDTH : 21 mm  
WEIGHT : 280 Grs (Hand tool only)  
302 Grs (Hand tool + die)  
317 Grs (Hand tool + die +locator)

| TERMINALS         | CRIMPING TOOL | WIRE SECTION (MM <sup>2</sup> ) | AWG      |
|-------------------|---------------|---------------------------------|----------|
| (S)PH-002T-P0.5S  | PCR-01B       | 0.08 to 0.22                    | 28 to 24 |
| (S)XH-001T-P0.6   | PCR-02A       | 0.13 to 0.33                    | 26 to 22 |
| (S)VH-21T-P1.1    | PCR-03D       | 0.33 to 0.83                    | 22 to 18 |
| (S)LBTAD-01T-M0.5 | PCR-LBTA      | 0.22 to 0.5                     | 24 to 20 |



# JST PCC HAND TOOL

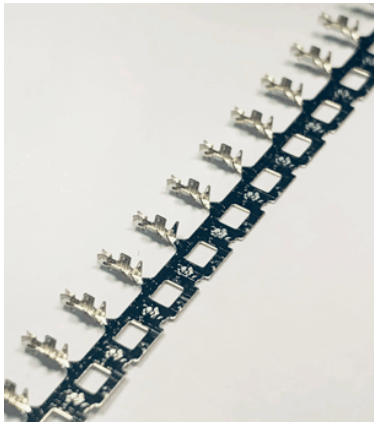
- > High resistance due to a hardened steel allow
- > Full cycle mechanism for a reliable crimping
- > Release mechanism to avoid clogging
- > Table clamp optional
- > Accurate crimping
- > Lifetime tests exceeding 50 000 cycles



Manual advance tool with a precise mechanical steering system, ensuring a correct placing of chain terminal, cut & crimp.

## FEATURES

- LENGHT : 200 mm
- HEIGHT : 164 mm
- WIDTH : 26 mm
- WEIGHT : 500 Grs (Frame only)



| TERMINALS       | CRIMP TOOL | WIRE SECTION(MM²) | AWG | CONDUCTOR                                   | RECOMMENDED WIRE       |
|-----------------|------------|-------------------|-----|---|------------------------|
| SSUH-003T-P0.15 | PCC-05C    | 0.05              | 30  | ANNEALED COP-<br>PER STRANDED<br>TIN-PLATED | UL1571 (STRANDED WIRE) |

# JST

## PCR-04AB HAND TOOL

Our PCR hand tools are equipped with locators which optimizes contact installation and wire insertion. Therefore they simplify the achievement of crimp cycle.

Their handles reduce crimping effort:

- > The symetric crimp dies & locator can be used by right & left-handed users.
- > They are compact & light.
- > They allow an accurate crimping for the professional users in search of constant reliability & quality.
- > Accurate crimping of solderless connections.
- > Lifetime exceeding 50 000 cycles.

| SERIE | TERMINALS      | CRIMPING TOOL | WIRE SECTION (MM <sup>2</sup> ) | AWG   |
|-------|----------------|---------------|---------------------------------|-------|
| PHD   | SPHD-001T-P0.5 | PCR-04AB      | 0.13-0.33                       | 26-22 |
|       | SPHD-002T-P0.5 |               | 0.08-0.21                       | 28-24 |
| PA    | SPA-001T-P0.5  |               | 0.13-0.33                       | 26-22 |
| PAL   | SPAL-001T-P0.5 |               | 0.13-0.33                       | 26-22 |
|       | SPAL-002T-P0.5 |               | 0.08-0.21                       | 28-24 |

- > Maintain the pushed locator
- > Insert the contact
- > Release then place the bare thread
- > A pressure on sleeves & the contact is set according to our crimping specifications



### FEATURES

LENGHT : 190 mm  
 HEIGHT : 74 mm  
 WIDTH : 21 mm  
 WEIGHT : 280 Grs (Hand tool only)  
           302 Grs (Hand tool + die)  
           317 Grs (Hand tool + die +locator)



# JST

## PCK HAND TOOLS

### PCK-06H

Tools feature an integrated locator which optimizes terminal installation & wire insertion in order to simplify the crimp cycle.

Their special ergonomic handles reduce

crimping effort.

Lifetime tests exceeding  
50 000 cycles.






















| TAB ON FLAG TERMINALS | WIRE SIZE MM <sup>2</sup> | AWG      |
|-----------------------|---------------------------|----------|
| (S)FO-2.5-250N        | 1.0 to 2.5                | 18 to 14 |
| (S)FO-2.5T-250N       |                           |          |

### PCK-05E

| INSULATED TERMINALS | WIRE SIZE MM <sup>2</sup> | AWG      |
|---------------------|---------------------------|----------|
| RED, BLUE, YELLOW   | 0.75 TO 6.0               | 22 to 10 |



| Red insulator<br>Wire size<br>0.2 – 1.65 mm²                                       | Drill hole<br>or width<br>(mm) | Ref               | Blue insulator<br>Wire size<br>1.04 – 2.63 mm²                                     | Drill hole<br>or width<br>(mm)   | Ref            | Yellow insulator<br>Wire size<br>2.63 – 6.64 mm²                                   | Drill hole<br>or width<br>(mm) | Ref           |
|--|--------------------------------|-------------------|--|--|----------------|--|--------------------------------|---------------|
|  | 2.8                            | FVDDF1.5-110A-5   |  | 4.8  | FVDDF2-187A-*  |  | 6.3                            | FVDDF5.5-250A |
|  | 4.8                            | FVDDF1.25-187A-*  |  | 5  | FVDDF2-205A-*  |  |                                | FVDDF5.5-375A |
|  | 5                              | FVDDF1.25-205A-*  |  | 6.3  | FVDDF2-250A    |  |                                | FVDDM5.5-250  |
|  | 6.35                           | FVDDF1.25-250A    |  | 6.3  | FLVDDF2-187A-* |  |                                | FV5.5-*       |
|  | 6.3                            | FLVDDF1.25-187A-* |  | 6.3  | FLVDDF2-250A   |  | Ø4 – Ø20                       | FV5.5-*       |
|  | 6.3                            | FLVDDF1.25-250A   |  | 6.3  | FVDDM2-250     |  | Ø4 – Ø6                        | FV5.5-S**A    |
|  |                                | FVDDM1.25-250     |  |  | FVDDM2-250A    |  | 2.8                            | FV5.5-1AF     |
|  |                                | FVDDFM1.25-250A   |  |  |                |  |                                |               |
|  | 6.3                            |                   |  | Ø2 – Ø10   | FV2-*          | Insulated terminals  |                                |               |
|  | Ø2 – Ø10                       | FV1.25-*          |  | Ø3 – Ø6  | FV2-S**A       |  |                                |               |
|  | Ø2 – Ø6                        | FV1.25-S**A       |  | Ø3   | CVDGF2-5       |  |                                |               |
|  | Ø4                             | FVDGM1.25-5       |  | Ø4   |                |  |                                |               |
|  | Ø3                             |                   |  | Ø5   |                |  |                                |               |
|  | Ø3.96                          | CVDGF1.25-5       |  |  | Ø4.95          |  | FVDGF2-5                       |               |
|  | 2.8                            | FV1.25-1AF        |  | 2.8  | FV2-1AF        |  |                                |               |
|  | Ø3                             | FVPC1.25          |  | Ø3   | FVPC-2         |  |                                |               |

\*Mating tab thickness 0.5 mm (-5) or 0.8 mm (-8)

\*\* Ø Drill hole

Vinyl Insulation, exist in Nylon (N) and in reinforced insulation (D), REACH compliance (K)



# JST

## HAND TOOLS

| Terminal Number               | PCK     | YRS      | YC     | YRM               | WC         | Extraction Tool                   |
|-------------------------------|---------|----------|--------|-------------------|------------|-----------------------------------|
| CVDGF1.25-5                   | PCK-05E |          |        |                   |            |                                   |
| CVDGF2-5                      | PCK-05E |          |        |                   |            |                                   |
| FLVDDF1.25-187A-*             | PCK-05E |          |        |                   |            |                                   |
| FLVDDF1.25-250A               | PCK-05E |          |        |                   |            |                                   |
| FLVDDF2-187A-*                | PCK-05E |          |        |                   |            |                                   |
| FLVDDF2-250A                  | PCK-05E |          |        |                   |            |                                   |
| FV1.25-**                     | PCK-05E |          |        |                   |            |                                   |
| FV1.25-1AF                    | PCK-05E |          |        |                   |            |                                   |
| FV1.25-S**A                   | PCK-05E |          |        |                   |            |                                   |
| FV2-**                        | PCK-05E |          |        |                   |            |                                   |
| FV2-1AF                       | PCK-05E |          |        |                   |            |                                   |
| FV2-S**A                      | PCK-05E |          |        |                   |            |                                   |
| FV5.*-S**A                    | PCK-05E |          |        |                   |            |                                   |
| FV5.5-**                      | PCK-05E |          |        |                   |            |                                   |
| FV5.5-1AF                     | PCK-05E |          |        |                   |            |                                   |
| FVDDF1.25-187A-*              | PCK-05E |          |        |                   |            |                                   |
| FVDDF1.25-205A-*              | PCK-05E |          |        |                   |            |                                   |
| FVDDF1.25-250A                | PCK-05E |          |        |                   |            |                                   |
| FVDDF1.5-110A-5               | PCK-05E |          |        |                   |            |                                   |
| FVDDF2-187A-*                 | PCK-05E |          |        |                   |            |                                   |
| FVDDF2-205A-*                 | PCK-05E |          |        |                   |            |                                   |
| FVDDF2-250A                   | PCK-05E |          |        |                   |            |                                   |
| FVDDF5.5-250A                 | PCK-05E |          |        |                   |            |                                   |
| FVDDF5.5-375A                 | PCK-05E |          |        |                   |            |                                   |
| FVDDFM1.25-250A               | PCK-05E |          |        |                   |            |                                   |
| FVDDM1.25-250                 | PCK-05E |          |        |                   |            |                                   |
| FVDDM2-250                    | PCK-05E |          |        |                   |            |                                   |
| FVDDM2-250A                   | PCK-05E |          |        |                   |            |                                   |
| FVDDM5.5-250                  | PCK-05E |          |        |                   |            |                                   |
| FVDGF2-5                      | PCK-05E |          |        |                   |            |                                   |
| FVDGM1.25-5                   | PCK-05E |          |        |                   |            |                                   |
| FVPC1.25                      | PCK-05E |          |        |                   |            |                                   |
| FVPC-2                        | PCK-05E |          |        |                   |            |                                   |
| Quick disconnect terminal     | PCK-05G |          |        |                   |            |                                   |
| JK-SP/SS2***                  |         | YRS-370  |        |                   |            | KEJ-0.7 (plug) / KEJ-0.4 (Socket) |
| J-SP/SS1***                   |         | YRS-440  | YC-440 |                   |            | DEJ-0.3                           |
| J-SP/SS2***                   |         | YRS-330  |        |                   |            | DEJ-0.3                           |
| LFO-1.0-250N                  |         |          |        |                   | JUCS-FO    |                                   |
| LFO-2.5-250N                  |         |          |        |                   | JUCS-FO    |                                   |
| MD-SP12**                     |         | YRS-470  |        |                   |            | MEJ-06                            |
| MD-SP22**                     |         | YRS-460  |        |                   |            | MEJ-06                            |
| RA-SC1290                     |         | YRS-231  |        | YRM-232 / YRM-233 |            | EJ-RA                             |
| RF-SC22**                     |         |          |        | YRM-230           |            |                                   |
| RPJ-SP/SS2331                 |         | YRS-331  |        |                   |            |                                   |
| SAA-21(T).**                  |         |          | YC-141 |                   |            |                                   |
| SAA-50(T).**                  |         |          | YC-182 |                   |            |                                   |
| SAA-51(T).**                  |         |          | YC-142 |                   |            |                                   |
| SAB-51(T).**                  |         |          | YC-142 |                   |            |                                   |
| SACH-003G-P0.2                |         | YRS-1190 |        |                   | WC-ACH2830 |                                   |
| SACHP-003G-P0.2               |         |          |        |                   | WC-ACH2830 |                                   |
| SACH-002GU-P0.3               |         | YRS-858  |        |                   |            |                                   |
| SAIT-A03T-M064A               |         |          |        |                   | WC-AIT03   |                                   |
| SAIT-A03GF-M064               |         |          |        |                   | WC-AIT03   |                                   |
| SAN-002T-0.8A / SAN-002T-0.8K |         | YRS-220  |        |                   | WC-220     | EJ-PH                             |
| SAUH-001G-M0.2                |         |          |        |                   | WC-AUH001  |                                   |

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## HAND TOOLS

| Terminal Number               | PCK     | YRS               | YC              | YRF      | YRK      | WC          | Extraction Tool |
|-------------------------------|---------|-------------------|-----------------|----------|----------|-------------|-----------------|
| SBH-001T-P0.5                 |         |                   | YC-670R         |          |          | WC-670      |                 |
| SBHL-002T-P0.5                |         | YRS-857           |                 |          |          |             |                 |
| SBHM-001T-P0.5                |         |                   | YC-670R         |          |          |             |                 |
| SBHS-002T-P0.5A               |         | YRS-852           |                 |          |          |             | EJ-BHS2         |
| SBHSM-002T-P0.5               |         | YRS-854           |                 |          |          |             |                 |
| SBHT-002T-P0.5                |         | YRS-856 / YRS-857 |                 |          |          |             |                 |
| SBN-001T-1.0                  |         | YRS-170           | YC-170R         |          |          |             |                 |
| SCN-001T-1.0K / SCN-001T-P1.0 |         | YRS-191           | YC-191R         |          |          | WC-191      |                 |
| SCPT-A021GF-0.5               |         | YRS-1310          |                 |          |          | WC-CPT021   |                 |
| SCS-41T-2.3                   |         |                   |                 |          |          |             | CSJ-23          |
| SCZH-002T-P0.5                |         | YRS-492           |                 |          |          |             |                 |
| SDF-01T-1.0A                  |         |                   | YC-045          |          |          |             |                 |
| SDF-01T-1.3AS                 |         |                   | YC-045          |          |          |             |                 |
| SDN-21T-P1.5                  |         |                   | YC-600R         |          |          |             |                 |
| SDY-01T-P1.6ASV               |         |                   | YC-525R         |          |          |             | SLJ-1.4         |
| SEH-001T-P0.6                 |         | YRS-260           | YC-260R         |          |          | WC-260      |                 |
| SF1F-002(*)-P0.6              |         |                   |                 |          | YRK-1220 | WC-SF1002   | EJ-JFAJ1100     |
| SF1M-002(*)-M0.6A             |         |                   |                 |          | YRK-1220 | WC-SF1002   | EJ-JFAJ1100     |
| SF1F-21(*)-P0.6               |         |                   |                 |          | YRK-1210 |             |                 |
| SF1M-21(*)-M0.6               |         |                   |                 |          | YRK-1210 |             |                 |
| SF3F-002(*)-P2.0              |         |                   |                 | YRF-882  | YRK-8821 |             | EJ-JFAJ3        |
| SF3F-01(*)-P2.0               |         |                   |                 | YRF-881  | YRK-8811 |             | EJ-JFAJ3        |
| SF3M-01(*)-M2.0N              |         |                   |                 | YRF-881  | YRK-8811 |             | EJ-JFAJ3        |
| SF3F-41(*)-P2.0               |         |                   |                 | YRF-880  | YRK-8801 | WC-880      | EJ-JFAJ3        |
| SF3M-41(*)-M2.0N              |         |                   |                 | YRF-880  | YRK-8801 | WC-880      | EJ-JFAJ3        |
| SF3F-71(*)-P2.0               |         |                   |                 | YRF-1070 | YRK-1071 | WC-SF371    | EJ-JFAJ3        |
| SF3M-71(*)-M2.0N              |         |                   |                 | YRF-1071 | YRK-1071 | WC-SF371    | EJ-JFAJ3        |
| SF0-2.5-250N                  | PCK-06H |                   |                 |          |          |             |                 |
| SF0-2.5T-250N                 | PCK-06H |                   |                 |          |          |             |                 |
| SF0-41(T)-187N(8)             |         |                   | YC-271          |          |          |             |                 |
| SF0-61(T)-250A                |         |                   | YC-270          |          |          |             |                 |
| SFPS-61T-250                  |         |                   | YC-272          |          |          |             |                 |
| SFT-61T-250N                  |         |                   | YC-510          |          |          |             |                 |
| SGF-41(T)-4                   |         |                   | YC-055          |          |          |             |                 |
| SGF-51(T)-5                   |         |                   | YC-065          |          |          |             |                 |
| SGHD-002(*)-P0.2              |         |                   |                 |          |          | WC-GH2630   |                 |
| SGM-51(T)-4                   |         |                   | YC-056          |          |          |             |                 |
| SGM-51(T)-5                   |         |                   | YC-056          |          |          |             |                 |
| SGVHSF-002T-P0.2              |         |                   |                 |          |          | WC-GVH2630  |                 |
| SHCM-A03T-P025                |         | YRS-960           |                 |          |          | WC-SHCM-A03 |                 |
| SHF-001T-0.8BS                |         | YRS-122           | YC-122R         |          |          | WC-122      |                 |
| SHF-002T-0.8BS                |         | YRS-300           |                 |          |          |             |                 |
| SHR-001T-P0.6                 |         | YRS-580           | YC-580R         |          |          |             |                 |
| SIM-01(T)-110A                |         |                   | YC-054          |          |          |             |                 |
| SIM-1.0-250D/N                |         |                   |                 |          |          | JUCS-IM     |                 |
| SIM-2.5-250D/N                |         |                   |                 |          |          | JUCS-IM     |                 |
| SIM-41(T)-110B                |         |                   | YC-067          |          |          |             |                 |
| SIM-51(T)-250N                |         |                   | YC-321          |          |          |             |                 |
| SIN-001T-1.2                  |         | YRS-034           |                 |          |          |             |                 |
| SIN-002T-1.0S                 |         | YRS-035           |                 |          |          |             |                 |
| SIN-01T-1.2                   |         |                   | YC-340R         |          |          |             |                 |
| SIN-01T-1.8                   |         |                   | YC-032          |          |          |             |                 |
| SIN-01T-1.8N                  |         |                   | YC-032          |          |          |             |                 |
| SIN-21T-1.8                   |         |                   | YC-350          |          |          |             |                 |
| SIN-21T-1.8S                  |         |                   | YC-570 / YC-571 |          |          |             |                 |

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## HAND TOOLS

| Terminal Number   | PCR      | YRS      | YC                | YRM     | YRF      | YRK                 | WC        | Extraction Tool |
|-------------------|----------|----------|-------------------|---------|----------|---------------------|-----------|-----------------|
| SIN-61T-2.6S      |          |          | YC-560            |         |          |                     |           |                 |
| SIN-81T-3.6S      |          |          | YC-940            |         |          |                     |           |                 |
| SJ2F-002GF-P1.0   |          | YRS-8851 |                   |         |          | YRK-8851            | WC-SJ2002 | EJ-JFAJ2N       |
| SJ2M-002GF-M1.0N  |          | YRS-8851 |                   |         |          | YRK-8851            | WC-SJ2002 | EJ-JFAJ2N       |
| SJ2F-01GF-P1.0    |          | YRS-8861 |                   |         |          | YRK-8861            | WC-SJ201  | EJ-JFAJ2N       |
| SJ2M-01GF-M1.0N   |          | YRS-8861 |                   |         |          | YRK-8861            | WC-SJ201  | EJ-JFAJ2N       |
| SJ2M-01GF-M1.0S   |          | YRS-8861 |                   |         |          | YRK-8861            |           | EJ-JFAJ2N       |
| SJ2F-21GF-P1.0    |          |          |                   |         | YRF-1120 | YRK-1120            | WC-SJ221  | EJ-JFAJ2N       |
| SJ2M-21GF-M1.0N   |          |          |                   |         | YRF-1120 | YRK-1120            | WC-SJ221  | EJ-JFAJ2N       |
| SJ4F-71GF-M3.0    |          |          |                   |         | YRF-1130 |                     |           | EJ-JFAJ4        |
| SJ4F-81GF-M3.0    |          |          |                   |         | YRF-1370 |                     |           | EJ-JFAJ4        |
| SJ5F-71GF-M6.5    |          |          |                   |         | YRF-888  |                     |           | EJ-JFAJ5        |
| SJ5M-71GF-M6.5    |          |          |                   |         | YRF-888  |                     |           | EJ-JFAJ5        |
| SJ5F-81GF-M6.5    |          |          |                   |         | YRF-889  |                     |           | EJ-JFAJ5        |
| SJ5M-81GF-M6.5    |          |          |                   |         | YRF-889  |                     |           | EJ-JFAJ5        |
| SJ5F-91GF-M6.5    |          |          |                   |         |          |                     |           | EJ-JFAJ5        |
| SJ5M-91GF-M6.5    |          |          |                   |         |          |                     |           | EJ-JFAJ5        |
| SJN-001PT-0.9     |          | YRS-1181 |                   |         |          |                     |           |                 |
| SJN-002PT-0.9     |          | YRS-036  |                   |         |          |                     |           |                 |
| SJWPSR-21T-P1.0   |          |          |                   |         |          |                     | WC-JWPS   |                 |
| SLBTAD-01T-M0.5   | PCR-LBTA |          |                   |         |          |                     |           |                 |
| SLC-21T-2.0       |          |          | YC-310            |         |          |                     | WC-310    |                 |
| SLEB-001T-P0.2    |          |          |                   |         |          |                     | WC-LEB001 |                 |
| SLF/M-01T-P1.3E   |          |          | YC-202            | YRM-201 |          |                     | WC-202    | LEJ-13          |
| SLF/M-41T-P1.3E   |          |          | YC-203            |         |          |                     | WC-203    | LEJ-13          |
| SLF/M-61T-2.0     |          |          | YC-022            |         |          |                     |           |                 |
| SMF-01T-1.0       |          |          | YC-081            |         |          |                     |           |                 |
| SMF-01T-1.3       |          |          | YC-082            |         |          |                     |           |                 |
| SMM-003T-P0.5     |          | YRS-800  |                   |         |          |                     | WC-800    |                 |
| SMR-001T-0.6      |          | YRS-580  | YC-580R           |         |          |                     |           | HRWJ            |
| SNAC-A081T-M2.8   |          |          |                   |         | YRF-1041 |                     |           |                 |
| SNAC3-A031T-M0.64 |          |          |                   |         |          | YRK-1011 / YRK-1012 |           |                 |
| SOM-21(T)-187     |          |          | YC-680            |         |          |                     |           |                 |
| SOM-51(T)-250     |          |          | YC-066            |         |          |                     | WC-066    |                 |
| SPA-001T-P0.5     | PCR-04AB |          | YC-610R / YC-611R |         |          |                     |           | EJ-PH           |
| SPAL-001T-P0.5    | PCR-04AB |          | YC-610R / YC-611R |         |          |                     | WC-610M   | EJ-PAL          |
| SPAL-002T-P0.5    | PCR-04AB | YRS-1340 |                   |         |          |                     |           | EJ-PAL          |
| SPB-1.0-250N-S    |          |          |                   |         |          |                     | JUCS-PB   |                 |
| SPB-2.5-250N-S    |          |          |                   |         |          |                     | JUCS-PB   |                 |
| SPF-01T-2.5C      |          |          | YC-043R           |         |          |                     |           |                 |
| SPH-001T-P0.5L    |          | YRS-245  |                   |         |          |                     | WC-244    |                 |
| SPH-002T-P0.5L    |          | YRS-241  |                   |         |          |                     |           | EJ-PH           |
| SPH-002T-P0.5S    |          | YRS-240  |                   | YRM-240 |          |                     | WC-240    | EJ-PH           |
| SPH-004T-P0.5S    |          | YRS-243  |                   |         |          |                     |           | EJ-PH           |
| SPHD-001T-P0.5    | PCR-04AB |          | YC-610R / YC-611R |         |          |                     | WC-610M   | EJ-PHD          |
| SPHD-002T-P0.5    | PCR-04AB | YRS-620  |                   | YRM-620 |          |                     | WC-620    | EJ-PHD          |
| SPND-001T-C0.5    |          | YRS-1091 |                   |         |          |                     | WC-1091   | EJ-PND          |
| SPND-002T-C0.5    |          | YRS-1090 |                   |         |          |                     | WC-1090   | EJ-PND          |
| SPNI-001T-P0.5    |          |          |                   |         |          |                     | WC-PNI001 |                 |
| SPS-01T-110       |          |          | YC-740            |         |          |                     | WC-740    |                 |
| SPS-01T-187(-8)   |          |          | YC-730 / YC-731   |         |          |                     | WC-730    | EJ-PS187        |
| SPS-21T-205(-5)   |          |          | YC-760            |         |          |                     |           |                 |
| SPS-21T-250       |          |          | YC-780            |         |          |                     | WC-780    | EJ-PS250        |
| SPS-21T-250S      |          |          | YC-780            |         |          |                     | WC-780    | EJ-PS250        |
| SPS-41T-110       |          |          | YC-750 / YC-751   |         |          |                     | WC-750    |                 |
| SPS-51T-187(-8)   |          |          | YC-710 / YC-711   |         |          |                     | WC-710    | EJ-PS187        |



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| Terminal Number    | PCC / PCK | YRS      | YC              | YRF     | WC           | Extraction Tool |
|--------------------|-----------|----------|-----------------|---------|--------------|-----------------|
| SPS-51T-205        |           |          | YC-710 / YC-711 |         |              |                 |
| SPS-61T-250        |           |          | YC-720          |         | WC-720       | EJ-PS250        |
| SPS-61T-250S       |           |          | YC-721          |         |              | EJ-PS250        |
| SPS-91T-250        |           |          |                 | YRF-790 |              | EJ-PS250        |
| SPS-91T-250S       |           |          |                 | YRF-791 |              | EJ-PS250        |
| SPUD-001T-P0.5     |           | YRS-1320 |                 |         | WC-PUD1      |                 |
| SPUD-002T-P0.5     |           |          |                 |         | WC-PUD2      |                 |
| SRA-20(T)-*        |           |          | YC-181          |         |              |                 |
| SRA-21(T)-*        |           |          | YC-141          |         |              |                 |
| SRA-50(T)-*        |           |          | YC-182          |         |              |                 |
| SRA-51(T)-*        |           |          | YC-142          |         |              |                 |
| SRB-1.0(*)         |           |          |                 |         | JUCS-RB/RT   |                 |
| SRB-2.5(*)         | PCK-07E   |          |                 |         | JUCS-RB/RT   |                 |
| SRB-51(T)-**       |           |          | YC-142          |         |              |                 |
| SRC-01(T)-**       |           |          | YC-033          |         |              |                 |
| SRC-50(T)-**       |           |          | YC-183          |         |              |                 |
| SRC-51(T)-**       |           |          | YC-142          |         |              |                 |
| SRF-51(T)-**       |           |          | YC-142          |         |              |                 |
| SRT-1.0(*)         |           |          |                 |         | JUCS-RB/RT   |                 |
| SRT-2.5(*)         | PCK-07E   |          |                 |         | JUCS-RB/RT   |                 |
| SRT-51T-**         |           |          | YC-143R         |         |              |                 |
| SRWF-01GG-M0.6     |           |          |                 |         |              | EJ-RPZ          |
| SRWM-01GG-S0.6     |           |          |                 |         |              | EJ-RPZ          |
| SRWF-21GG-M0.6     |           |          |                 |         |              | EJ-RPZ          |
| SRWM-21GG-S0.6     |           |          |                 |         |              | EJ-RPZ          |
| SRWF-61GG-M0.6     |           |          | YC-840R         |         |              | EJ-RPZ          |
| SRWM-61GG-S0.6     |           |          | YC-840R         |         |              | EJ-RPZ          |
| SSH-003T-P0.2H     |           | YRS-859  |                 |         | WC-SH2832    |                 |
| SSH-003GA-P0.2     |           | YRS-859  |                 |         | WC-SH2832    |                 |
| SSHL-002T-P0.2     |           | YRS-1140 |                 |         | WC-GH2630    |                 |
| SSHL-003T-P0.2     |           | YRS-859  |                 |         | WC-SH2832    |                 |
| SSHL-003GA1-P0.2   |           | YRS-859  |                 |         | WC-SH2832    |                 |
| SSFH-001T-P0.5     |           |          |                 |         | WC-SFH1      |                 |
| SSFH-002T-P0.5     |           | YRS-1490 |                 |         | WC-SFH2      |                 |
| SSF/M-01T-P1.4     |           |          | YC-500          |         |              | SLJ-1.4         |
| SSF/M-21T-P1.4     |           |          | YC-550          |         | WC-550       | SLJ-1.4         |
| SSUH-003T-P0.5     | PCC-05C   |          |                 |         |              |                 |
| STI-01(T)-110N     |           |          | YC-041          |         |              |                 |
| STI-1.0(T)-250D/N  |           |          |                 |         | JUCS-TI      |                 |
| STI-2.5(T)-250D/N  |           |          |                 |         | JUCS-TI      |                 |
| STI-41(T)-110N     |           |          | YC-063          |         |              |                 |
| STI-51(T)-250N     |           |          | YC-322          |         |              |                 |
| STO-01(T)-110N(-8) |           |          | YC-041          |         |              |                 |
| STO-01(T)-187N(-8) |           |          | YC-042          |         |              |                 |
| STO-0.25-110N      |           |          | YC-810          |         |              |                 |
| STO-0.5-110N       |           |          | YC-820          |         | JUCS-05110   |                 |
| STO-1.0-110N       | PCK-07E   |          |                 |         | JUCS-2.8/4.8 |                 |
| STO-1.0-187N       | PCK-07E   |          |                 |         | JUCS-2.8/4.8 |                 |
| STO-1.0(T)-250N    | PCK-07E   |          |                 |         | JUCS-6.3     |                 |
| STO-2.5(T)-250N    | PCK-07E   |          |                 |         | JUCS-6.3     |                 |
| STO-21(T)-205N     |           |          | YC-053          |         |              |                 |
| STO-21(T)-250N     |           |          | YC-102          |         |              |                 |
| STO-41(T)-110N(-8) |           |          | YC-062          |         |              |                 |
| STO-41(T)-187N(-8) |           |          | YC-051          |         |              |                 |
| STO-41(T)-187S     |           |          | YC-064          |         |              |                 |

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## HAND TOOLS

| Terminal Number  | PCR     | YRS      | YC                          | YRM               | YRF      | WC                 | Extraction Tool |
|------------------|---------|----------|-----------------------------|-------------------|----------|--------------------|-----------------|
| STO-61(T)-250N   |         |          | YC-047                      |                   |          |                    |                 |
| STO-81(T)-250N   |         |          | YC-280                      |                   | YRF-280  |                    |                 |
| STS/D-002GG-P0.6 |         | YRS-1360 |                             |                   |          |                    |                 |
| SVA-41T-P1.1     |         |          | YC-450                      |                   |          |                    | EJ-SMP          |
| SVF-01T-1.5A     |         |          | YC-044                      |                   |          |                    |                 |
| SVF-01T-1.5N     |         |          | YC-151                      |                   |          |                    |                 |
| SVF-01T-2.36N    |         |          | YC-152                      |                   |          |                    | EJ-LV           |
| SVF-42T-P2.0     |         |          | YC-592                      |                   |          | WC-592             | VLJ-20          |
| SVM-42T-P2.0     |         |          | YC-593                      |                   |          | WC-592             | VLJ-20          |
| SVF/M-61T-P2.0   |         |          |                             |                   | YRF-590  | WC-590             | VLJ-20          |
| SVF/M-81T-P2.0   |         |          |                             |                   | YRF-591  | WC-591             | VLJ-20          |
| SVH-21T-P1.1     | PCR-03D |          | YC-160R / YC-161R / YC-164R | YRM-160 / YRM-164 |          | WC-160             | EJ-NV           |
| SVH-41T-P1.1     |         |          | YC-930R / YC-931R           |                   |          | WC-930             | EJ-NV           |
| SVT-41T-P1.1     |         |          | YC-630                      |                   |          |                    | EJ-VT           |
| STU-21T-P0.6     |         |          | YC-990R                     |                   |          |                    | EJ-VU4          |
| SVYF-61T-P0.5A   |         |          |                             |                   | YRF-536  |                    |                 |
| SWPJT-21T-P0.5   |         |          |                             |                   |          | WC-WPJM            | EJ-WPJ          |
| SWPJT-21T-P0.5A  |         |          |                             |                   |          | WC-WPJ(A)          | EJ-WPJ          |
| SWPJR-21T-M0.5   |         |          |                             |                   |          | WC-WPJM            | EJ-WPJ          |
| SWPJR-21T-M0.5A  |         |          |                             |                   |          | WC-WPJ(A)          | EJ-WPJ          |
| SWPKP-21T-0.6    |         |          |                             |                   | YRF-1051 |                    |                 |
| SWPKR-21T-0.6    |         |          |                             |                   | YRF-1050 |                    |                 |
| SWPR-001T-P025   |         | YRS-980  |                             |                   |          | WC-JWPF            | EJ-JWPF         |
| SWPT-001T-P025   |         | YRS-980  |                             |                   |          | WC-JWPF            | EJ-JWPF         |
| SXA-01T-P0.6     |         | YRS-701  | YC-701R                     |                   |          | WC-700M            | EJ-XMP          |
| SXM-01T-P0.6     |         | YRS-701  | YC-701R                     |                   |          |                    | EJ-XMP          |
| SXA-001T-P0.6    |         | YRS-692  | YC-692R                     |                   |          | WC-692             | EJ-XMP / EJ-XMR |
| SXM-001T-P0.6    |         | YRS-692  | YC-692R                     |                   |          |                    | EJ-XMP / EJ-XMR |
| SXA-001T-P0.6L   |         | YRS-691  |                             |                   |          | WC-691             |                 |
| SXAM-01T-P0.6    |         | YRS-701  | YC-701R                     |                   |          | WC-700M            |                 |
| SXAM-001T-P0.6   |         | YRS-692  | YC-692R                     |                   |          | WC-692             |                 |
| SXF-01T-P0.7     |         |          | YC-251                      |                   |          |                    | LEJ-7           |
| SXF-41T-P0.7     |         |          | YC-252                      |                   |          |                    | LEJ-7           |
| SXH-001T-P0.6    |         | YRS-110  | YC-110R / YC-111R           |                   |          | WC-110             | XJ-06           |
| SXH-001T-P0.6N   |         |          |                             |                   |          |                    | XJ-06           |
| SXH-002T-P0.6    |         | YRS-480  |                             |                   |          |                    | XJ-06           |
| SXNI-001T-P0.6   |         | YRS-1380 |                             |                   |          |                    |                 |
| SXNI-003T-P0.6   |         | YRS-1390 |                             |                   |          |                    |                 |
| SYF-001T-P0.6    |         | YRS-125  |                             |                   |          |                    |                 |
| SYF/M-01T-P0.5A  |         |          | YC-520                      |                   |          | WC-520             | YLJ-0.5         |
| SYF/M-41T-P0.5A  |         |          | YC-530                      |                   |          | WC-530             | YLJ-0.5         |
| SYF-61T-P0.5A    |         |          |                             |                   | YRF-536  |                    |                 |
| SYM-001T-P0.6    |         | YRS-121  | YC-121R                     |                   |          | WC-121             | SMJ-06          |
| SYM-01T-P0.7     |         |          | YC-251                      |                   |          |                    | LEJ-7           |
| SYM-41T-P0.7     |         |          | YC-252                      |                   |          |                    | LEJ-7           |
| SZE-002T-P0.3    |         | YRS-1300 |                             |                   |          | WC-ZE2426          |                 |
| SZE-003T-P0.3    |         | YRS-1330 |                             |                   |          |                    |                 |
| SZF/M-01T-P0.7   |         |          | YC-390R                     |                   |          |                    | ZLJ-07S         |
| SZF/M-41T-P0.7   |         |          | YC-380R                     |                   |          |                    | ZLJ-07S         |
| SZH-002T-P0.5    |         | YRS-491  |                             |                   |          | WC-491 / WC-ZH2632 |                 |
| SZH-003T-P0.5    |         | YRS-490  |                             |                   |          | WC-490 / WC-ZH2632 |                 |
| SZN-002T-P0.7K   |         | YRS-541  |                             |                   |          |                    |                 |
| SZN-003T-P0.7K   |         | YRS-540  |                             |                   |          |                    |                 |
| SZPD-002-03      |         |          |                             |                   |          | WC-ZE2426          |                 |

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## HAND TOOLS



EXTRACTION  
TOOL



HPD



H2



IDB



IDH



INSERTION  
TOOL



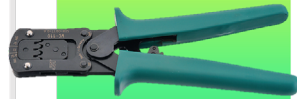
PCC



PCK



PCR



WC



YC



YRF



YRK



YRS



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