Selection Guide

Mobile Device Connectors

CAT.No.MOB-GC-E-D004a.FEB.2025

Technology to Inspire Innovation

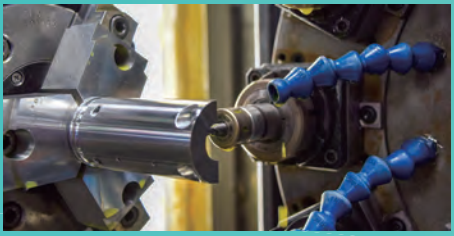
JAE has been awarded the ceirtificate of
ISO 9001(quality management system) and
ISO 14001(environmental management system)

Manufacturing Technology Innovation

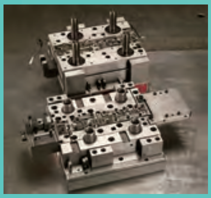
◆ Innovation of production capacity through in-house production, automation and labor saving efforts

JAE operates continuous production 24-hours-a-day, 7-days-a-week utilizing internally developed, labor-saving automated assembly equipment at key factories in Japan. In pursuit of increased manufacturing speed and cost reduction, we diligently innovate fundamental technologies and processes ranging from automated assembly to turning, stamping, molding, and plating.

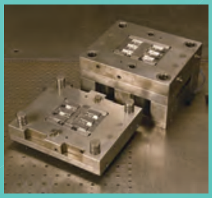
Turning



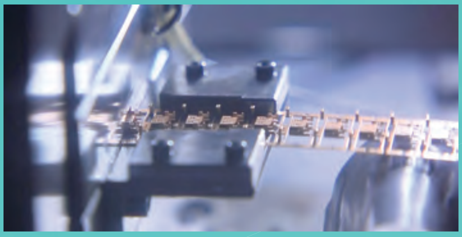
Stamping Die



Molding Die

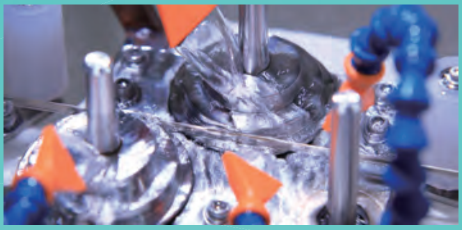


Stamping



Molding

Plating



Assembly

◆ Enhanced of the evaluation and test system to ensure highly reliable products are provided to customers

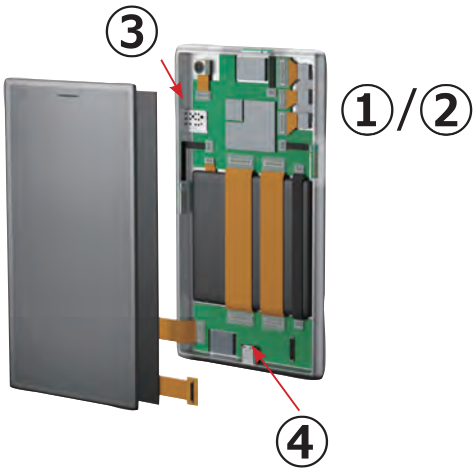
We are continuously improving our evaluation and test systems to meet the increasing demands for quality and reliability from our customers. Our Integrated Evaluation & Test Laboratory is equipped with over 100 testing devices, including combined environmental reliability and vibration test equipment, as well as an anechoic chamber for electromagnetic compatibility (EMC) evaluation. This laboratory conducts precise and efficient environmental testing by applying thermal and humidity stress, along with mechanical testing through vibration and shock. These enhancements enable us to deliver reliable products to our customers.

RF anechoic chamber

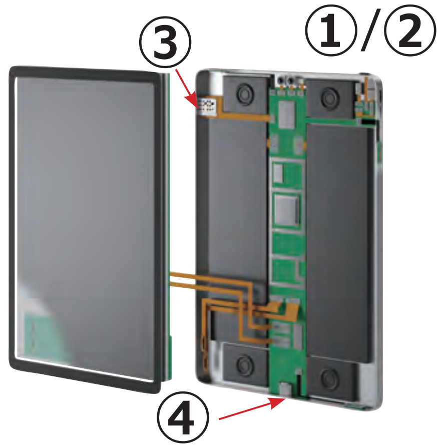
Evaluation equipment installed in the Integrated Evaluation & Test Laboratory

Integrated Evaluation & Test Laboratory

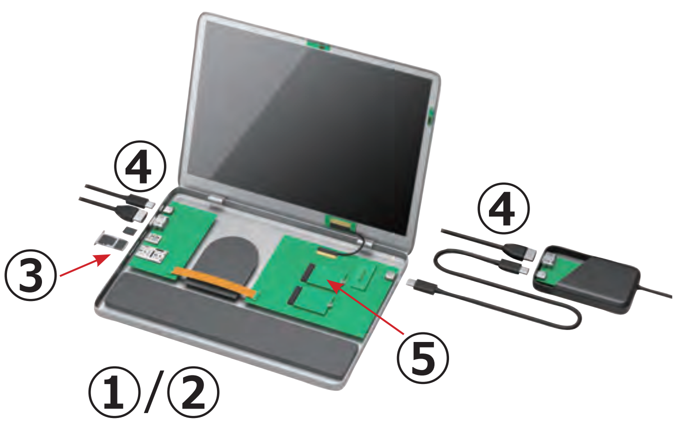
Application Examples



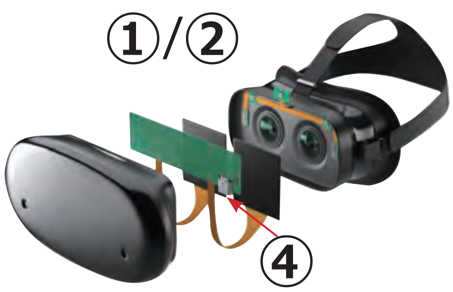
Smartphone



Tablet



Notebook PC



Head-Mounted Display

① Board-to-Board Connection

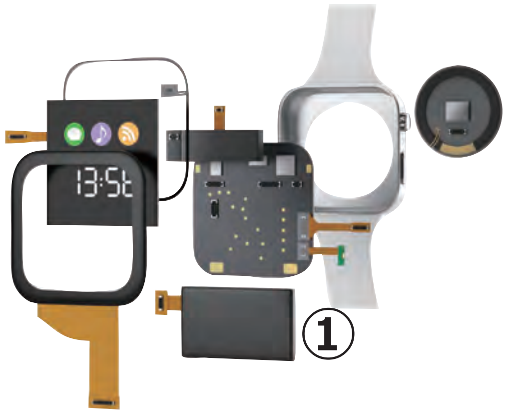
WP55DK	10~11 Pages
WP56DK	10~11 Pages
WP66DK	10~11 Pages
WP26DK	10~11 Pages
WP27D	10~11 Pages
WP86SD	12 Page
WP56MS	13 Page
WP16RS	14 Page
WP10	15 Page

② FPC / FFC Connection

FR02	16 Page
FA10	17 Page

③ Small Cards

ST19	18 Page
ST11-H	19 Page
ST12	20 Page
SG50	21 Page
SF70	22 Page
SF72	23 Page
SF78	24 Page



Smart Watches

Wireless Earphones

Smart Textiles

④ Interface

DX07	
• Receptacle	25 ～26 Pages
• Plug	27 Page
• Harnes	28 Page
DC04	29 Page

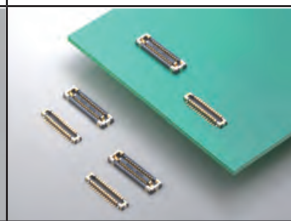
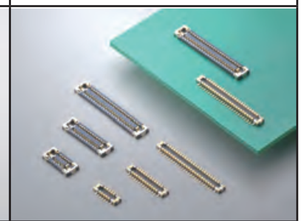
⑤ Memory Module Socket

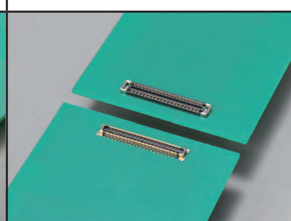
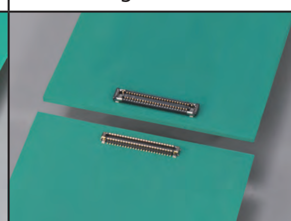
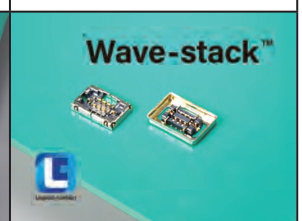
SM3	30 Page

⑥ Smart Textiles

RK01	31 Page

Board-to-Board (FPC) Connectors

Series	WP55DK	WP56DK	WP66DK	WP26DK
Contact Pitch	0.3 mm	0.3 mm	0.35 mm	0.35 mm
Mating Height	0.5 mm	0.6 mm	0.6 mm	0.6 mm
Width	1.6 mm	1.6 mm	1.6 mm	1.9 mm
Appearance				
Number of Contacts	6 ,8,10, 22 (+2 power)	26 (+2 Power)	6, 8, 30 (+2 Power)	10, 16, 24, 30, 34, 40, 48 50, 60 (+2 Power)
Current Rating (per contact)	Signal: 0.3 A Power: 3.0 A	Signal: 0.3 A Power: 3.0 A	Signal: 0.3 A Power: 3.0 A	Signal: 0.3 A Power: 5.0 A
D.W.Voltage (1min)	AC 250 Vr.m.s.	AC 250 Vr.m.s.	AC 250 Vr.m.s.	AC 250 Vr.m.s.
Insulation Resistance	100 MΩ min.	100 MΩ min.	100 MΩ min.	100 MΩ min.
Contact Resistance	Signal: 70 mΩ max. Power: 20 mΩmax.	Signal: 70 mΩ max. Power: 20 mΩ max.	Signal: 70 mΩ max. Power: 20 mΩ max.	Signal: 50 mΩ max. Power: 20 mΩ max.
Page	10 to 11	10 to 11	10 to 11	10 to 11

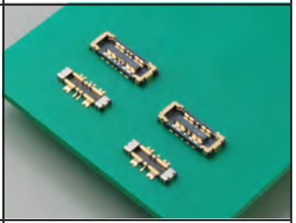
Series	WP27D	WP86SD	WP56MS	WP16RS
Contact Pitch	0.35mm	Quad-Row arrangement* Mating: 0.25 mm (2rows) Mounting: 0.5 mm (4 rows)	0.3 mm	0.35 mm
Mating Height	0.7 mm	0.6 mm	0.6 mm	0.6 mm
Width	1.9 mm	2.2 mm	1.73 mm (including SMT 1.9 mm)	2.47 mm
Appearance				
Number of Contacts	10, 24, 30, 34, 38, 40, 50, 60 (+2 Power)	80 (+2 Power)	50 (+2 Power)	RF contact: 2 Signal: 6
Current Rating (per contact)	Signal: 0.3 A Power: 3.0 A	Signal: 0.3 A Power: 8.0 A	Signal: 0.3 A Power: 5.0 A	RF contact: 0.3 A Signal: 1.0 A
D.W.Voltage (1min)	AC 250 Vr.m.s.	AC 250 Vr.m.s.	AC 250 Vr.m.s.	AC 250 Vr.m.s.
Insulation Resistance	100 MΩ min.	100 MΩ min.	100 MΩ min.	100 MΩ min.
Contact Resistance	Signal: 70 mΩ max. Power: 20 mΩ max.	Signal: 50 mΩ max. Power: 20 mΩ max.	Signal: 50 mΩ max. Power: 20 mΩ max.	50 mΩ max.
Page	10 to 11	12	13	14

*Quad- row arrangement: An arrangement in which a two-row mating pitch is split into a four-row mounting pitch.

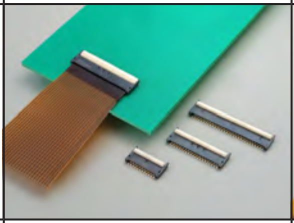
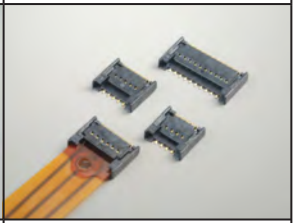
Our brand logo

Wave-stack™	Japan Aviation Electronics Industry (JAE) boasts one of the largest market shares in the industry. The WP series of interior board-to-board (FPC) connectors features high contact reliability, ease of mating, and robustness. It provides the high-frequency signal quality required for AiP connections and high shielding performance as an EMI countermeasure. We have branded
Logical-contact	Japan Aviation Electronics Industry (JAE) is a Logical = words that reflect the product concept, such as rationality and efficiency As the contact shape resembles the letter L, we named it " Logical-contact ™ " and branded it.

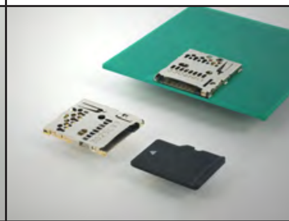
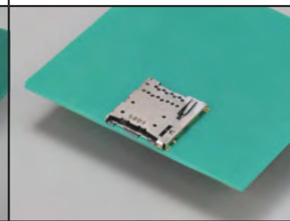
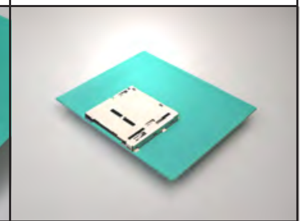
Board-to-Board (FPC) Connectors

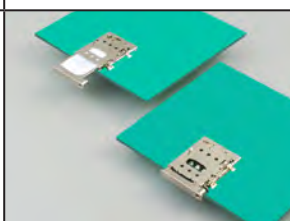
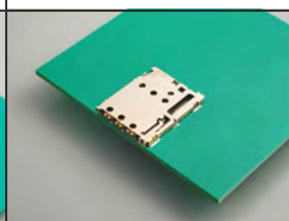
Series	WP10
Contact Pitch	0.4mm
Mating Height	0.7mm
Width	2.2mm
Appearance	
Number of Contacts	Signal: 2, 4 Power: 4
Current Rating (per contact)	Signal: 0.4A Power: 5.0A
D.W.Voltage (1min)	AC 250 Vr.m.s.
Insulation Resistance	100MΩ min.
Contact Resistance	Signal: 20mΩ max. Power: 5mΩ max.
Page	15

FPC Connectors

Series	FR02 (LIF TYPE)	FA10 (LIF TYPE)
Contact Pitch	0.2 mm	0.5 mm
Applicable FPC Thickness	0.2 mm backing	0.2 mm backing
Appearance		
Number of Contacts	23, 41, 51, 61	4, 5, 6, 10
Current Rating (per contact)	0.25 A	0.5 A
D.W.Voltage (1min)	AC 250 Vr.m.s.	AC 250 Vr.m.s.
Insulation Resistance	50 MΩ min.	50 MΩ min.
Contact Resistance	Odd number pole: 120 mΩ max. Even number pole: 100 mΩ max.	70 mΩ max.
Page	16	17

Small Card Connectors

Series	ST19	ST11- H	ST12	SG50
Card Type	3 in 2 (nano SIM / miroSD™)	microSD	microSD	UHS-I SD UHS- II SD
Appearance				
Number of Contacts	20 (+2 Switches)	8 (+2 Switches)	10 (+2 Switches)	UHS-I: 9 (+ 3 Switches) UHS- II: 17 (+ 3 Switches)
Current Rating (per contact)	0.5 A	0.5 A	0.5 A	0.5 A
D.W.Voltage (1min)	AC 500 Vr.m.s.	AC 500 Vr.m.s.	AC 500 Vr.m.s.	AC 500 Vr.m.s.
Insulation Resistance	1000 MΩ min.	1000 MΩ min.	1000 MΩ min.	1000 MΩ min.
Contact Resistance	100 mΩ max. (Switch: 1Ω max.)	100 mΩ max. (Switch: 1Ω max.)	100 mΩ max. (Switch: 1Ω max.)	100 mΩ max. (Switch: 1Ω max.)
Page	18	19	20	21

Series	SF70	SF72	SF78
Card Type	Nano SIM	Nano SIM	Dual Nano SIM
Appearance			
Number of Contacts	6 (+2 Switches)	6 (+2 Switches)	12 (+2 Switches)
Current Rating (per contact)	0.5 A	0.5 A	0.5 A
D.W.Voltage (1min)	AC 500 Vr.m.s.	AC 500 Vr.m.s.	AC 500 Vr.m.s.
Insulation Resistance	1000 MΩ min.	1000 MΩ min.	1000 MΩ min.
Contact Resistance	100 mΩ max. (Switch: 1Ω max.)	100 mΩ max. (Switch: 1Ω max.)	100 mΩ max. (Switch: 1Ω max.)
Page	22	23	24

* microSD™ is a trademark of SD Association

Interface Connectors

Series	DX07 Receptacle		DX07 Plug	DX07 Harness
Connector Type	USB Type-C®	USB Type-C/ USB4® correspondence	USB Type-C / USB4 correspondence	USB Type-C
Appearance				
Number of Contacts	16, 24	24	22, 24	24
Current Rating (V_{BUS})	5 A	5 A	5 A	USB 3.2 Gen 2: 5 A USB 3.2 Gen 1: 3 A
D.W.Voltage (1min)	AC 100 Vr.m.s.	AC 100 Vr.m.s.	AC 100 Vr.m.s.	AC 40 Vr.m.s.
Insulation Resistance	100 MΩ min.	100 MΩ min.	100 MΩ min.	10 MΩ min.
Contact Resistance	40 mΩ max.	40 mΩ max.	40 mΩ max.	40 mΩ max.
Page	25	26	27	28

Series	DC04
Connector Type	HDMI™ 2.1
Appearance	
Number of Contacts	19
Current Rating (per contact)	0.5 A
D.W.Voltage (1min)	AC 500 Vr.m.s.
Insulation Resistance	100 MΩ min.
Page	29

* USB4®, USB Type-C®, and USB-C® are trademarks of the USB-IF (USB Implementers Forum, Inc.).
* Thunderbolt™ is a trademark of Intel Corporation.
* HDMI, High-Definition Multimedia Interface, and the HDMI logo are trademarks or registered trademarks of HDMI Licensing Administrator, Inc. in the United States and other countries.
* PCI Express® is a trademark of PCI-SIG.

Memory Module Connectors

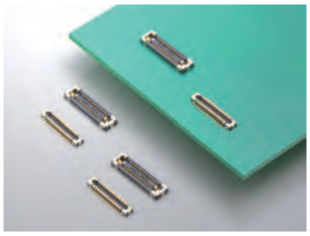
Series	SM3
Type	PCI Express® M.2
Appearance	
Number of Contacts	67
Current Rating (per contact)	0.5 A
D.W.Voltage (1min)	AC 300 Vr.m.s.
Insulation Resistance	500 MΩ min.
Contact Resistance	55 mΩ max.
Page	30

Smart Textile Connectors

Series	RK01
Wash Test	JIS L 1930(C4G)
Appearance	
Number of Contacts	2 Pos. min.
Contact Resistance	1Ω max.
Durability	500 times
D.W.Voltage (1min)	AC 250 Vr.m.s., 1m A max.
Operating Temperature Range	-20 deg.C to +50 deg.C
Page	31

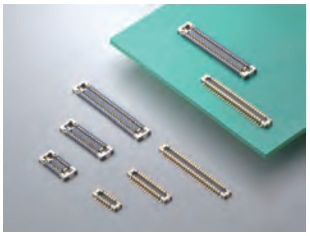
Narrow Pitch Board-to-Board (FPC) Stacking Connector
WP＊D / WP＊DK Series

WP55DK Series



WP56DK Series

WP66DK Series



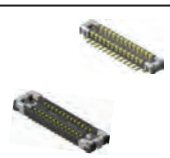
WP26DK Series

WP27D Series

Features

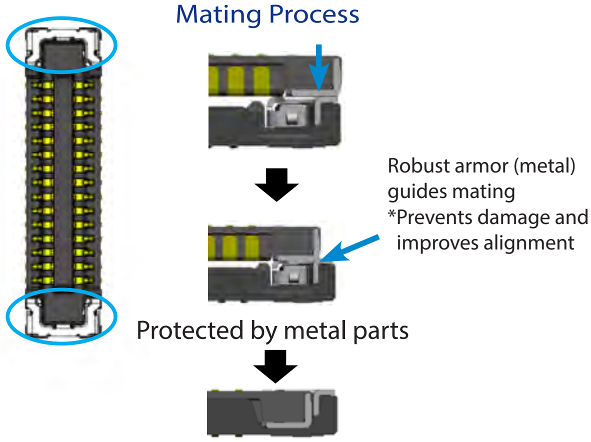
- Armor structure that achieves excellent robustness and workability.
- Two power terminals capable of carrying 3 A (WP26DK supports 5 A).
- Signal terminals support ultra-high-speed signals above 10Gbps.

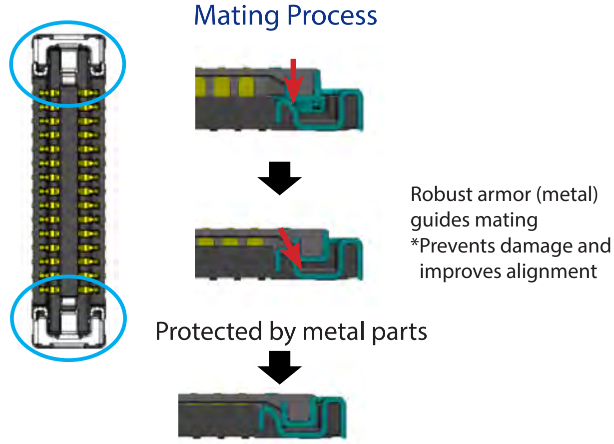
General Specifications

Series Name		WP55DK	WP56DK	WP66DK	WP26DK	WP27D
Appearance						
Contact Pitch (mm)		0.3	0.3	0.35	0.35	0.35
Dimensions (mm)	Mated Height	0.5	0.6	0.6	0.6	0.7
	Width	1.6	1.6	1.6	1.9	1.9
Number of Contacts		Signals: 6, 8, 10, 22 Power: 2	Signal: 26 Power: 2	Signal: 6, 8, 30 Power: 2	Signal: 10, 16, 24, 30, 34, 40, 48, 50, 60 Power: 2	Signals: 10, 24, 30, 34, 38, 40, 50, 60 Power: 2
Current Rating (per contact)		Signal: 0.3 A Power supply: 3 A (WP26DK is 5 A)				
Voltage Rating		AC / DC 50V				
D.W.Voltage		AC 250 Vr.ms. (for 1 minute)				
Insulation Resistance		100 MΩ min.				
Contact Resistance		Signal: 70 mΩ max. (WP26DK : 50 mΩ max.) Power: 20 mΩ max.				
Durability		30 times				
Operating Temperature Range		-40 deg.C to +85 deg.C				

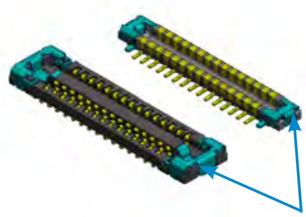
Narrow Pitch Board-to-Board (FPC) Stacking Connector
WP＊D / WP＊DK Series

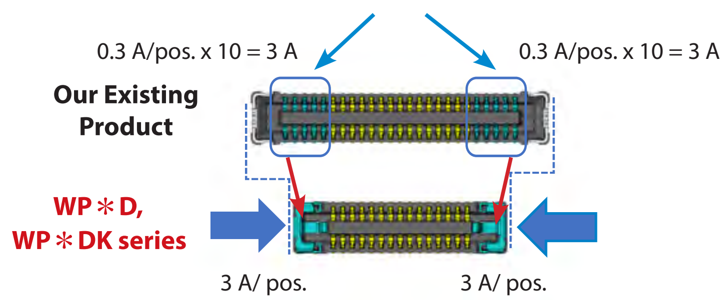
■ Armor Structure





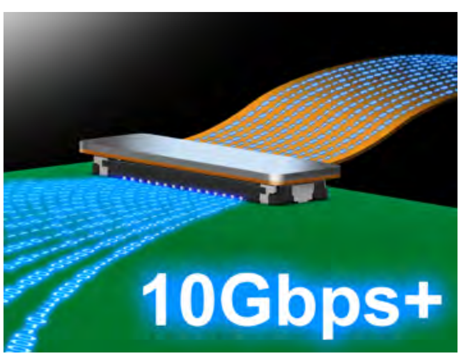
■ Power Hold Down with 3 A Current
(WP26DK is 5A)





By using the hold-down as a power terminal that can handle high current, it is possible to reduce the number of terminals by approximately 20 positions, allowing for miniaturization

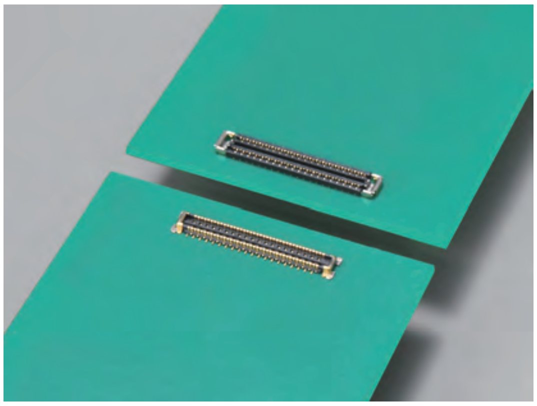
■ High-Speed Transmission



The signal terminals are arranged with high-speed transmission in mind, allowing for flexible pin assignments for high-speed transmission signal terminals, which can support speeds of over 10 Gbps

Quad-row 0.25mm Contact Pitch Board-to-Board (FPC) Stacking Connector

WP86SD Series



Features

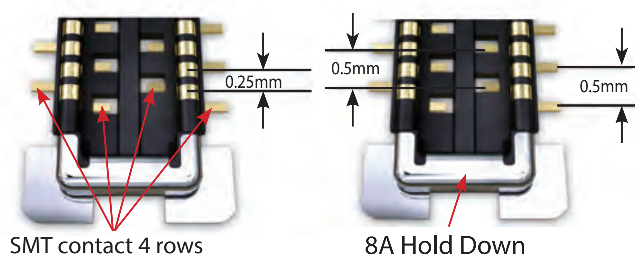
- By utilizing a Quad-Row array with a mating pitch of 0.25 mm and a mounting pitch of 0.5 mm, both miniaturization and ease of mounting are chieved.
- Capable of wiring on both sides of the FPC, supporting affordable FPCs.
- Two power terminals (also serving as hold- downs) capable of passing 8 A.
- High robustness due to a full armor structure that protects mating surfaces and suppresses mold damage.
- Supported transmission standards: MIPI, USB4®, PCIe Gen5

* USB4® is USB- IF (USB Implementers Forum , Inc.)

General Specifications

Contact Pitch (mm)		Contact Area: 0.25, 2 rows Soldering Area: 0.5 mm, 4 rows
Dimensions (mm)	Mating Height	0.6
	Width	2.2
	Length	12.65 (for 80 position)
Number of Contacts		Power: 2 Signal: 80
Current Rating (per contact)		Signal Terminal: AC, DC 0.3 A Power supply: AC, DC 8.0 A
Voltage Rating		AC, DC 50 V
D.W.Voltage		AC 250 Vr.m.s. (for 1 minute)
Insulation Resistance		100 MΩ min
Contact Resistance		Signal Termina: 50 mΩ max. Power supply Termina: 20 mΩ max.
Durability		30 mating cycles
Operating Temperature Range		-40 deg.C to +85 deg.C

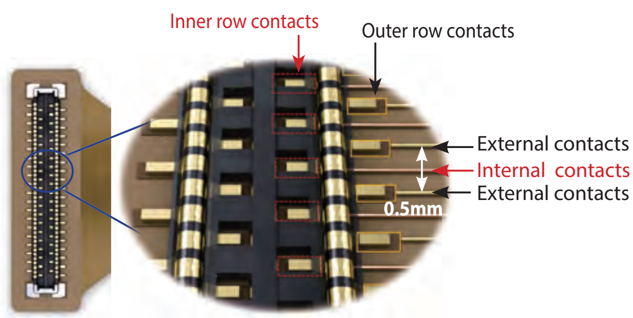
■ Quad- row array



Quad- row arrangement achieves both compact size and ease of mounting

*Quad- row arrangement: An arrangement in which a two-row mating pitch is split into a four-row mounting pitch.

■ Supports double-sided FPC

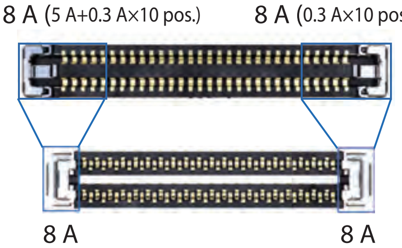


By making the smallest pitch possible for surface layer wiring,Compatible with double-sided FPCs

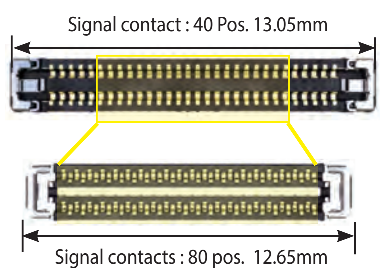
■ Power contact capable of carrying

WP26DK Series 60 Pos.

WP86SD Series 80 Pos.



Longitudinal dimension shortened !



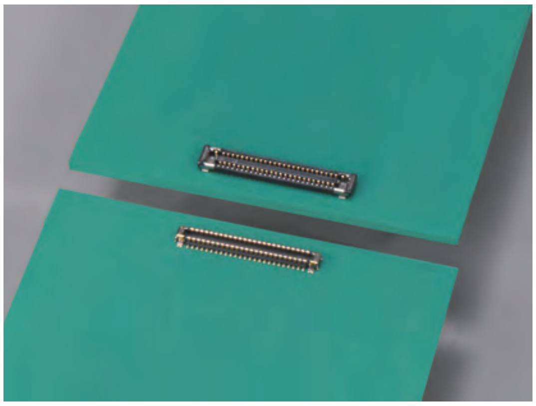
Our existing product → **To support 8 A , a total of 20 signal pins are required as power contacts. The contacts that can be used for signals are 40 Pos.**

WP86SD Series → **Only the power supply terminal (hold-down) can accommodate 8 A, thus shortening the length dimension compared to conventional products. The contacts that can be used for signals are 80 Pos., so more can be used as signal contacts compared to existing products.**

Board-to-Board (FPC) Connectors

0.3mm Pitch and 0.6mm Height Board-to-Board (FPC) Stacking Connector

WP56MS Series



Features

- 0.3 mm pitch, mating height 0.6 mm, depth 1.73 mm (including SMT depth of 1.9 mm).
- Two power terminals capable of passing 5.0 A (also serving as hold-downs).
- Robust structure with hold-downs that protect mating surfaces and suppress mold damage.
- Utilizes hardware to prevent damage to the adhesive area during mating.
- Nickel barrier applied to contacts to prevent solder wicking.
- Supported transmission standards: MIPI, USB4®, PCIe Gen5.

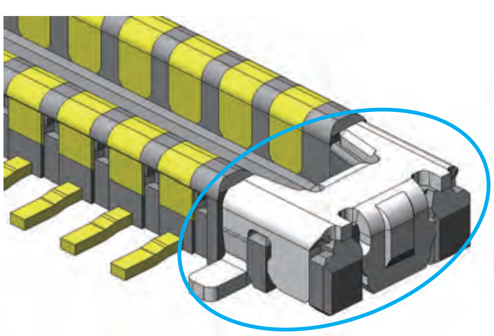
* USB4® is USB- IF (USB Implementers Forum , Inc.)

General Specifications

Contact pitch (mm)		0.3
Dimen-sions (mm)	Mating Height	0.6
	Width	1.73 (Depth including SMT 1.9 mm)
	Length	9.8
Number of Contacts		Power: 2 Signal: 50
Current Rating (per contact)		Signal: AC, DC 0.3 A Power: AC , DC 5.0 A
Voltage Rating		AC, DC 50 V
D.W.Voltage		AC 250 Vr.m.s. (for 1 minute)
Insulation Resistance		100 MΩ or higher
Contact Resistance		Signal: 50 mΩ max. Power supply: 20 mΩ max.
Durability		30 mating cycles
Operating Temperature Range		-40 deg.C to ＋ 85 deg.C

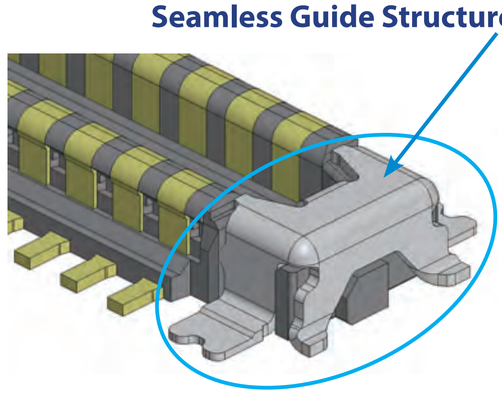
■ Good Mating Workability

Plug Side Hold Down Structure



Our Existing Product (WP26DK Series)

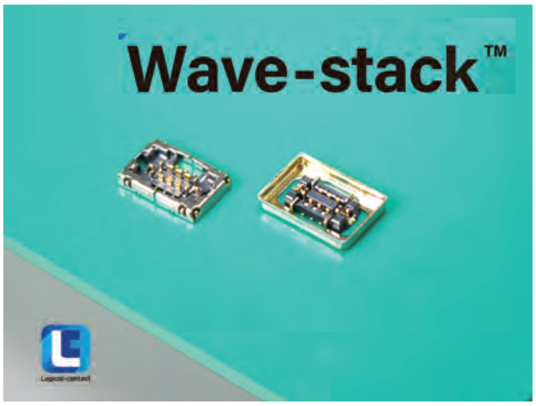
Seamless Guide Structure



WP56MS Series

The plug side hold-down is achieved by drawing. Seamless guide structure provides excellent alignment and improves workability during mating.

Full Shield RF Board to Board (FPC) Connector
WP16RS Series



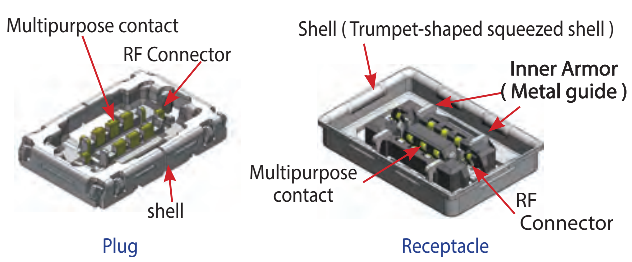
General Specifications

Contact Pitch (mm)		0.35
Dimensions	Mating Height	0.6
	Width	2.47
	Length	3.6
Number of Contacts		RF: 2 Signal: 6
Rated Current (per contact)		RF contact: AC, DC 0.3 A Signal: AC, DC 1 A
Voltage Rating		AC, DC 50 V
D.W.Voltage		AC 250 V r.m.s. (1 minute)
Insulation Resistance		100 MΩ min.
Contact Resistance		50 mΩ max.
VSWR		≦ 1.2: to 6 GHz, ≦ 1.5: to 20 GHz
Durability		30 mating cycles
Operating Temperature Range		-40 deg.C to +85 deg.C

Features

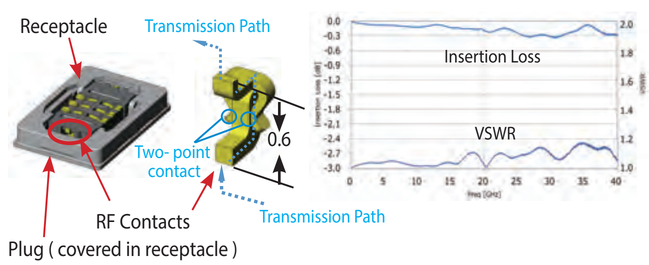
- High shielding performance.
- Dedicated high-frequency contacts (RF contacts) provide.
- New concept: Logical- contact TM Adoption of this technology allows for both compact size and power supply.
- A trumpet-shaped draw shell and metal guides inside the connector ensure high robustness and alignment.

■ Trumpet-Shaped Drawing Shell/Metal Guide



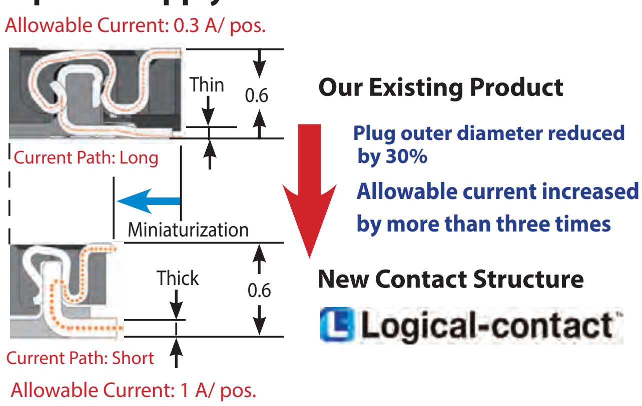
The receptacle uses a draw shell and metal guide to reduce damage even when offset mating is performed

■ High Frequency Dedicated Contact

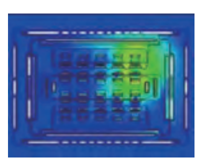
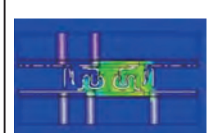
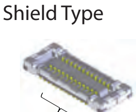
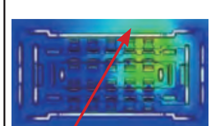
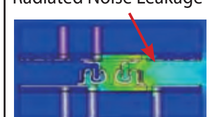


Dedicated high-frequency terminals with transmission path lengths much shorter than the wavelength λ

■ Multipurpose contact that also supports power supply

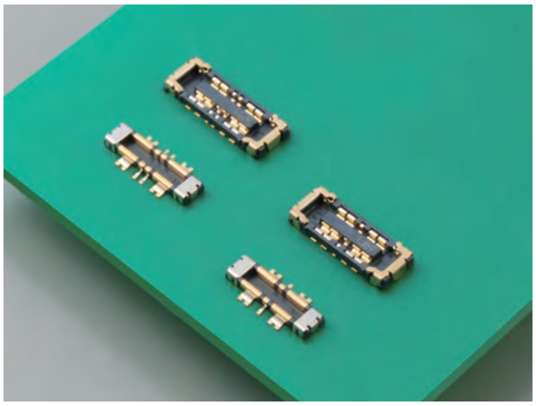


■ Full shield structure

Fully Shielded Type Minimize radiated noise leakage  All-around shielding including contacts		
Simple Shield Type  The contacts are unshielded	 Radiated Noise Leakage	Radiated Noise Leakage 

Board-to-Board (FPC) Connectors

Stacking Connector for Battery Connection
WP10 Series



Features

- The power supply terminals use high-conductivity power contacts and can carry 10 A of current. In addition to the power contacts, the hold-down part is also made of high conductive material. The hold-down part is also made of high conductive material to support up to 12 A.
- Two-point contact design for both power and signal terminals to handle torsional stress.
- Protects the mating surface and prevents mold damage. Hold-down with locking structure for increased removal force.

General Specifications

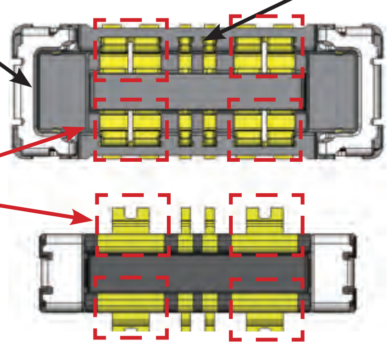
Contact Pitch (mm)		0.4
Dimensions (mm)	Mating Height	0.7
	Width	2.2
	Length	5.7 (2 Pos.) , 6.1 (4 Pos.)
Number of Contacts		10A compatible: Signal: 2, 4 Power: 4 12A compatible: Signal: 2, 4 Power: 4 Hold down: 2
Current Rating(per contact)		Signal: AC/DC 0.4 A max. Power supply: AC/DC 5.0 A max. Hold Down: AC/DC 2.0 A max. (12 A products only)
Voltage Rating		AC/DC 50 V
D.W.Voltage		AC 250 Vr.m.s. (for 1 minute)
Insulation Resistance		100 MΩ min.
Contact Resistance		Signal: 20 mΩ max. Power: 5 mΩ max. Hold Down: 20 mΩ max.
Durability		30 mating cycles
Operating Temperature Range		-40 deg.C to +85 deg.C

■ 10 A Compatible Product

Signal Contact (2,4 Pos.)

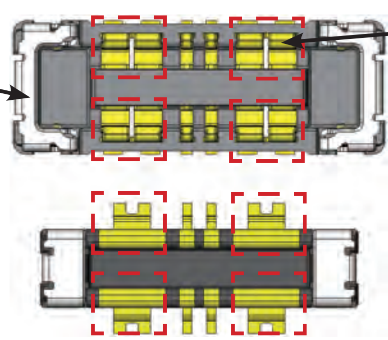
Hold Down

Highly Conductive Power Contacts
5 A x 4 Pos.



■ 12 A Compatible Product

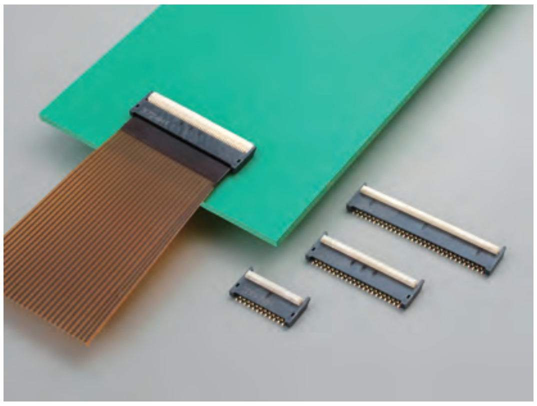
Highly Conductive Hold Downs



Highly Conductive Power Contacts
5 A × 4 Pos.

With high-conductivity hold-downs
and
With high conductivity power contacts
12 A capable

0.2mm Pitch/ FPC Connector
FR02 Series



Features

- 0.2 mm pitch, 0.82 mm height, and 3.0 mm depth, space-saving FPC connector.
- Tapered guides in the insertion area for improved FPC insertion guidance.
- LIF (Low Insertion Force) structure temporarily holds FPC in place
- With a structure that prevents the actuator from coming off during actuator operation.

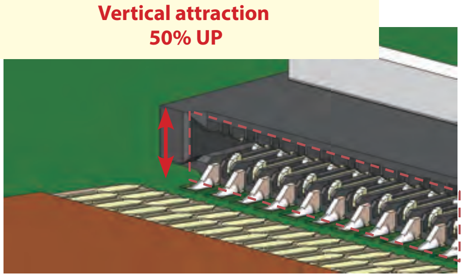
General Specifications

Number of Contacts	23, 41, 51, 61
Current Rating(per contact)	AC/DC 0.25 A max.
Voltage Rating	AC/DC 50 V
D.W.Voltage	AC 250 Vr.m.s. (for 1 minute)
Insulation Resistance	50 MΩ min.
Contact Resistance	Odd Rows: 120 mΩ max. Even rows: 100 mΩ max.
Durability	20 mating cycles
Operating Temperature Range	-40 deg.C to +85 deg.C
Applicable FPC Thickness	t 0.2 mm ± 0.03 mm

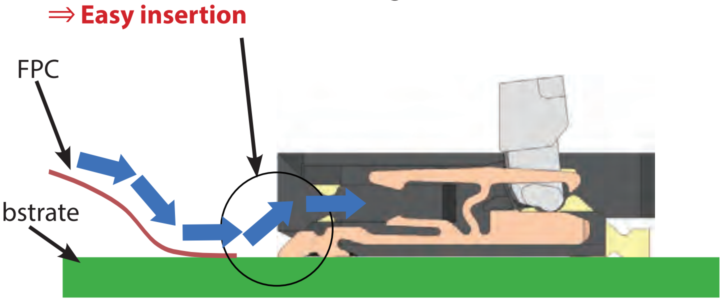
■ Tapered Shape (FPC Insertion side)

The FPC insertion side is inclined,
The FPC can be inserted along the board
⇒ Easy insertion

Compared to our existing products
Vertical attraction
50% UP

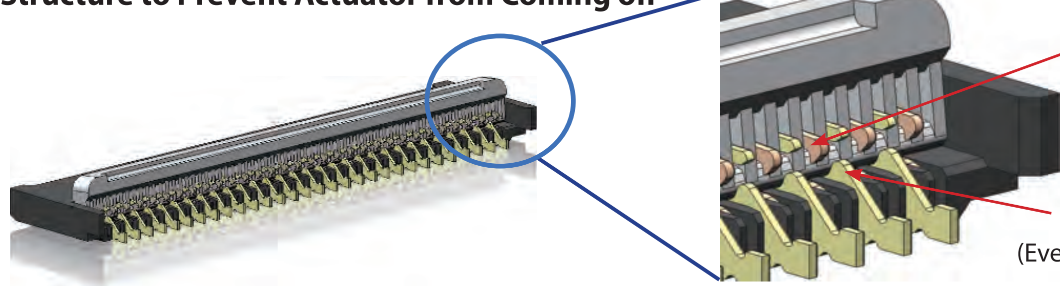


Perspective view



Side View

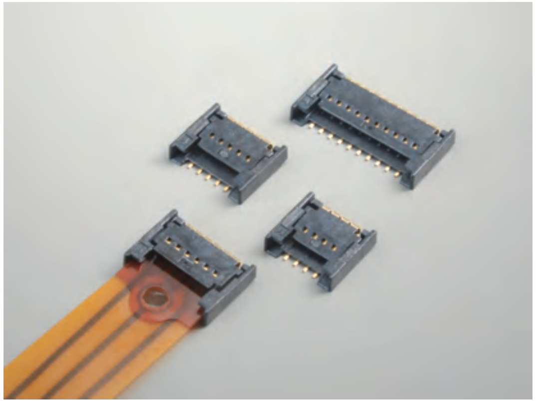
■ Structure to Prevent Actuator from Coming off



The actuator is less likely to come off due to the dowel shape with odd-numbered contacts on the top and even-numbered contacts on the bottom
In addition, the contact shape is resistant to plastic deformation, so it is designed not to come off even after operating the actuator without

0.5mm Pitch/ FPC Connector

FA10 Series



Features

- Space-saving with 0.5 mm pitch, 0.9 mm height, and 3.2mm depth.
- One-action mating, with no need for actuator or slider operation during insertion and removal.
- Tapered guides in the insertion area for improved FPC insertion guidance.
- Guides for FPC sides for prevention of misalignment.

General Specifications

Number of Contacts	4, 5, 6, 10
Current Rating(per contact)	AC/DC 0.5 A max.
Voltage Rating	AC/DC 50 V
D.W.Voltage	AC 250 Vr.m.s. (for 1 minute)
Insulation Resistance	50 MΩ min.
Contact Resistance	70 mΩ max.
Durability	20 mating cycles
Operating Temperature Range	-40 deg.C to +85 deg.C
Applicable FPC Thickness	t 0.2mm ± 0.03mm

■ One-Action Method

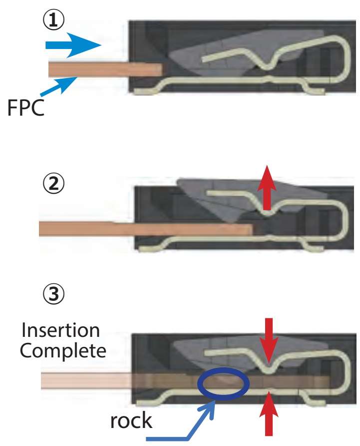
No actuator operation required
→ No risk of actuator damage

LIF structure that lifts the contact by leverage and minimizes contact sliding
→Low operating force and protection of FPC electrodes

The actuator protrusion fits into the FPC notch , completing contact.
→Friction lock prevents disconnection

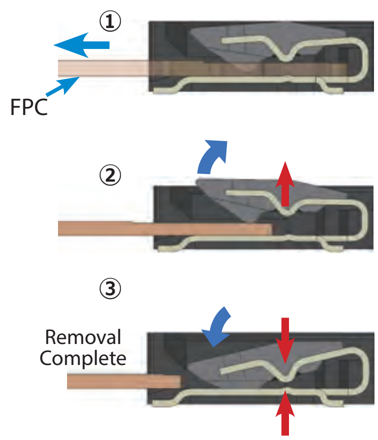
FPC Mating Process

Just Insert It in One Action

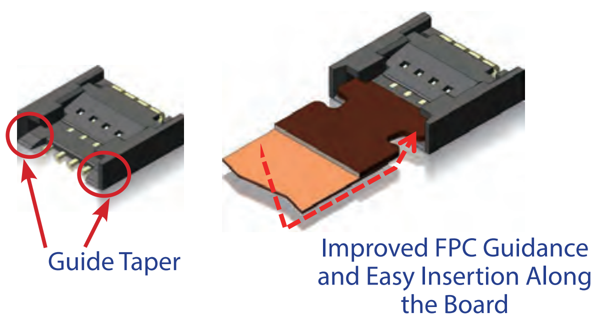


FPC Removal Process

Just Pull It Out with One Action

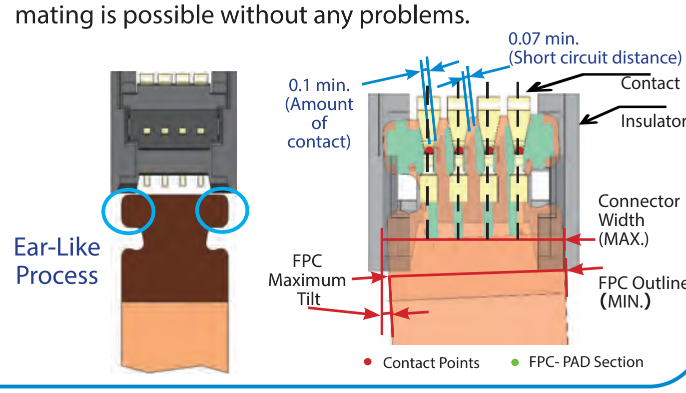


■ Easy FPC Insertion

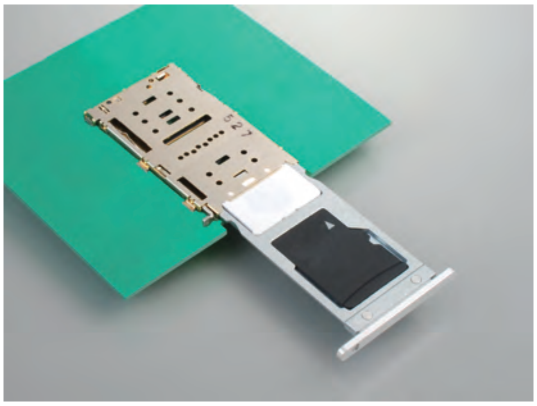


■ Prevention of Θ Misalignment

Even if the FPC has a there is a short circuit distance, so mating is possible without any problems.



3-in-2 Type Card Connector (For nano SIM + nano SIM/ microSD™ Cards) ST19 Series



*microSD™ is a trademark of the SD Association.

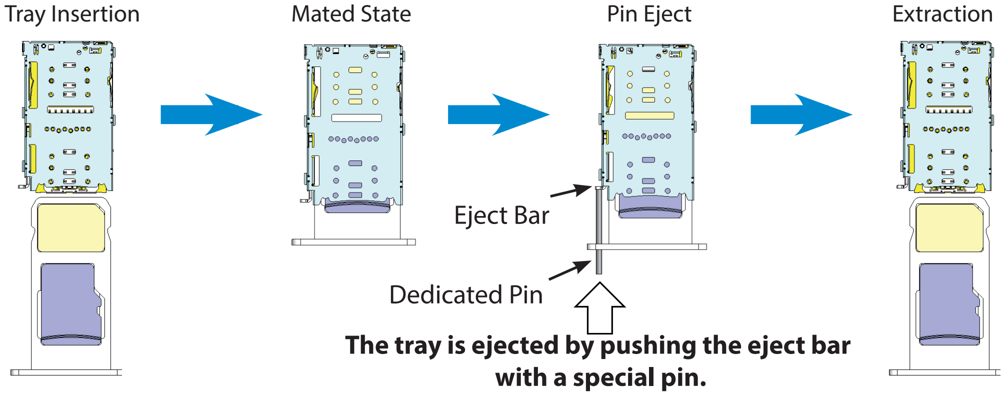
Features

- Compact and slim design
  1.3 mm height, 17.49 mm width, 28.15 mm depth
- Compatible with two patterns
  Combination 1) nano SIM card x 1 pcs. + microSDTM card x 1 pcs.
  Combination 2) nano SIM card x 2 pcs.
- Equipped with a card detection switch that indicates the card insertion status.
- Compatible with thickness of nano SIM Cards that are manually cut to size by user.

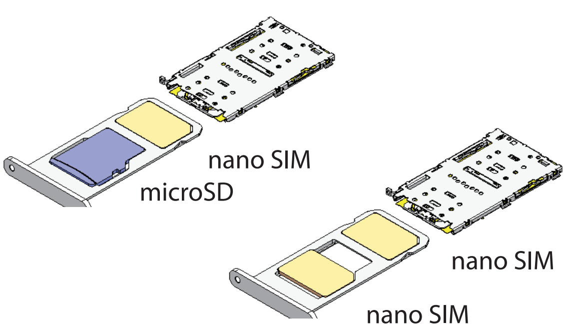
General Specifications

Number of Contacts	20 (+2 Switches)
Current Rating (per contact)	0.5 A max.
Voltage Rating	10 V
D.W.Voltage	AC 500 Vr.m.s. (for 1 minute)
Insulation Resistance	1,000 MΩ min.
Contact Resistance	100 mΩ max. (Switch: 1Ω max.)
Durability	2,500 mating cycles
Operating Temperature Range	-40 deg.C to +85 deg.C

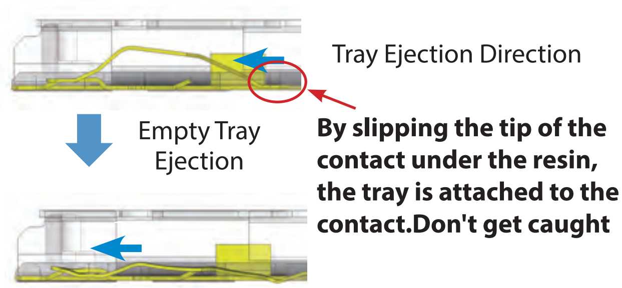
■ Push Eject Method



■ Supports Two Types of Card Usage Patterns Composite Type 3 in 2 Types

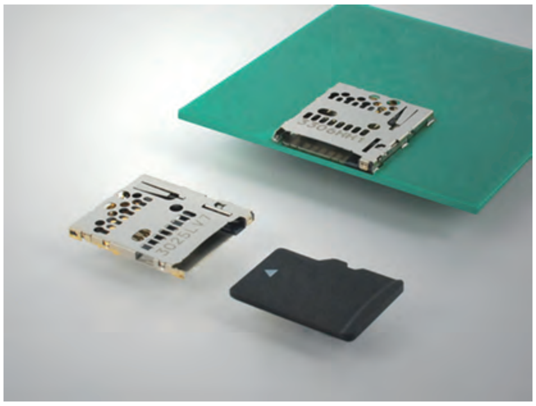


■ Anti-Buckling Contact



Safety structure that prevents damage to contacts even when inserting or removing an empty tray with no card inserted

microSD ™ Card Connectors
ST11-H Series



*microSD™ is a trademark of the SD Association.

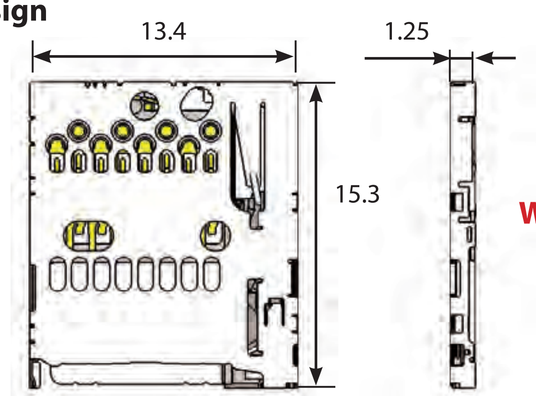
Features

- World's smallest class size :
  Height 1.25 mm, Width 13.4 mm , Depth 15.3 mm
- Push-push type connectors for the microSD memory card standardized by SDA
- 1.0 mm push stroke, 3.4 mm card eject length
- Mechanical lock structure

General Specifications

Number of Contacts	8 (+2 Switches)
Current Rating (per contact)	0.5 A max.
Voltage Rating	10 V
D.W.Voltage	AC 500 Vr.m.s. (for 1 minute)
Insulation Resistance	1,000 MΩ min.
Contact Resistance	100 mΩ max. (Switch: 1 Ω max.)
Durability	5,000 mating cycles
Operating Temperature Range	-30 deg.C to +85 deg.C

■ Compact and Slim Design

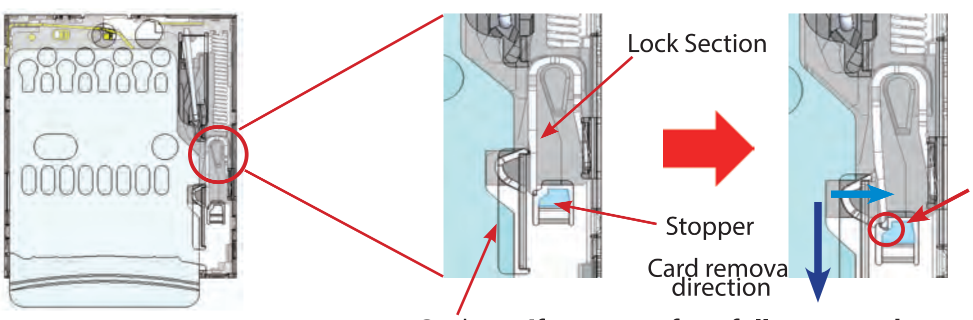


World's Smallest Class Size

(Unit :mm)

■ Robust Lock Structure

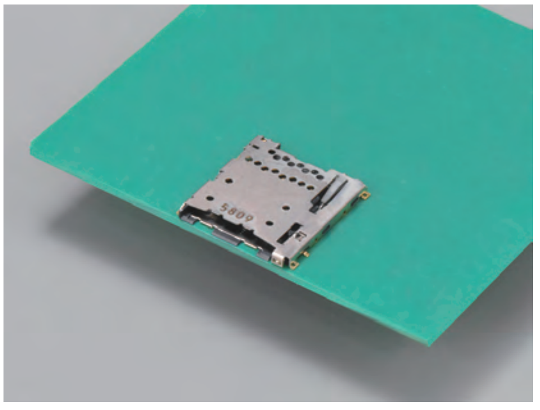
If you try to forcefully remove the card without using



Lock tip and The stopper interferes and a strong locking force is applied.

If you try to forcefully remove the card

microSD ™ Card Connectors
ST12 Series



*microSD™ is a trademark of the SD Association.

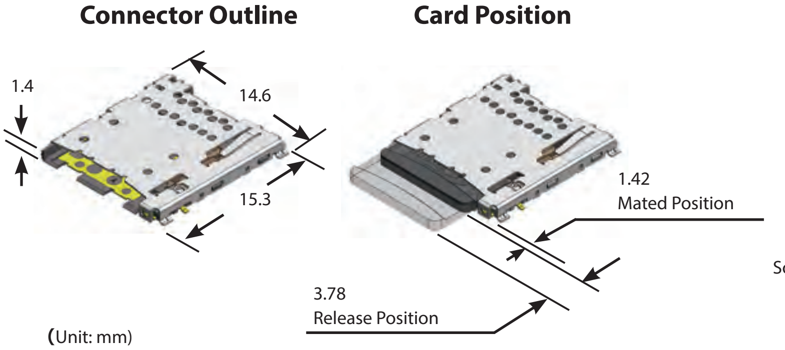
Features

- 1.4 mm height, 14.6 mm width, and 15.3mm depth (depth including card: 16.7 mm)
- Push-push type connector for microSD card compliant with UHS-I
- Push stroke: 0.7 mm, Card eject amount: 3.8 mm
- Robust mounting with multi hold-downs.
- Soldering area of terminals are located on the outside of connector body for easy inspection and repair.

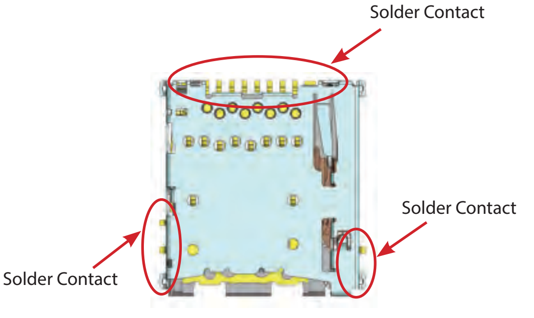
General Specifications

Number of Contacts	10 (+2 Switches)
Current Rating (per contact)	0.5 A max.
Voltage Rating	10 V
D.W.Voltage	AC 500 Vr.m.s. (for 1 minute)
Insulation Resistance	1,000 MΩ min.
Contact Resistance	100 mΩ max. (Switch: 1Ω max.)
Durability	10,000 mating cycles
Operating Temperature Range	-25 deg.C to +85 deg.C

■ Compact and Slim Design

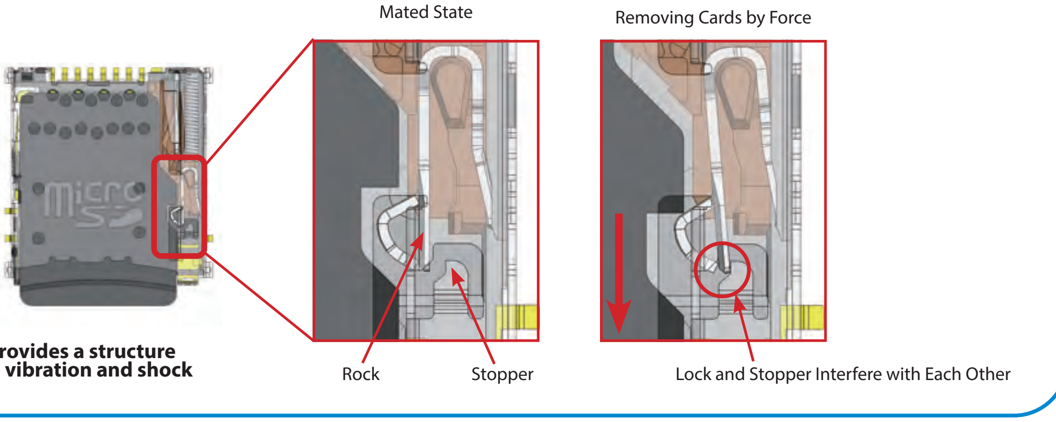


■ Outer Lead Type



External solder contacts for easy inspection and repair

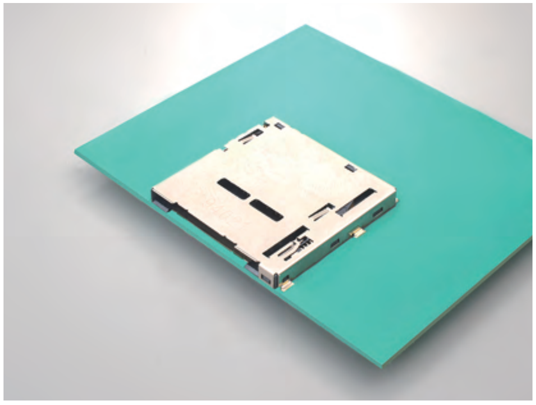
■ Mechanical lock structure



Mechanical lock provides a structure that is resistant to vibration and shock

Rugged Full-Size SD Card Connectors Compatible with UHS-I and UHS-II

SG50 Series



Features

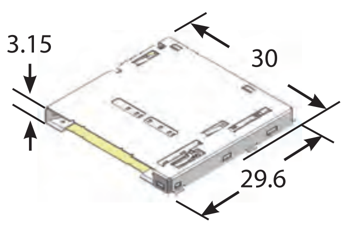
- Environmentally resistant full-size SD card connector.
- UHS-I, UHS-II compatible high-speed data-transfer memory.
- Card ejection method: Push-push type.
- 2-point contact structure with high contact reliability.
- Mechanical lock structure for vibration and impact resistance.
- Structure to prevent incorrect insertion of the card.

General Specifications

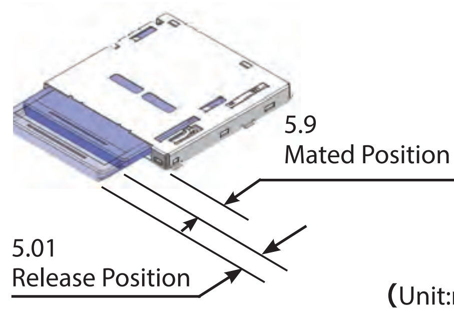
Number of Contacts	UHS -I compatible: 9 (+3 Switches) UHS -II compatible: 17 (+ 3 Switches)
Current Rating (per contact)	0.5 A max.
Voltage Rating	10 V
D.W.Voltage	AC 500 Vr.ms. (for 1 minute)
Insulation Resistance	1,000 MΩ min.
Contact Resistance	100 mΩ max. (Switch: 1 Ω max.)
Durability	10,000 mating cycles
Operating Temperature Range	-40 deg.C to +85 deg.C

■ Compact and Slim Design

Connector Outline

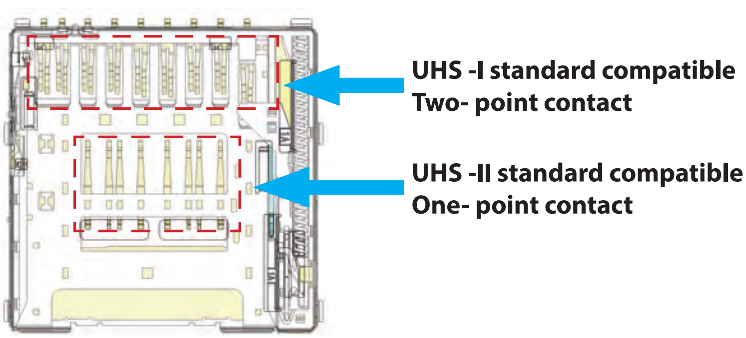


Card Position

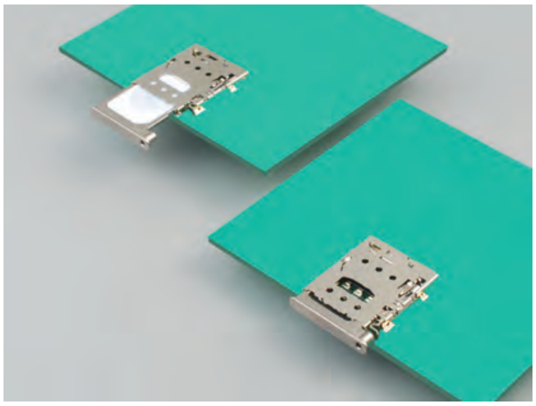


(Unit:mm)

■ Compatible with High-Speed Data Transfer Memory Standards UHS -I and UHS -II



Pin-eject Tray Nano SIM Card Connector
SF70 Series



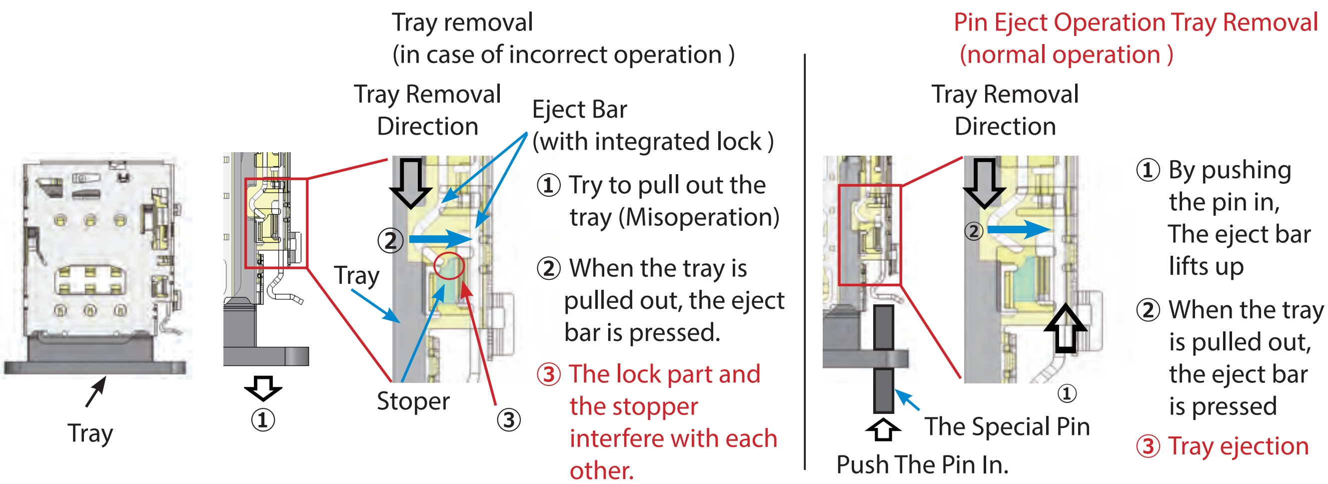
Features

- Smallest-in-class dimensions including height: 1.25mm height, 13.3mm width, and 14.8mm depth
- Superior resistance against drop with original lock structure.
- Card mis-insertion measure, card detection switch (normal open).
- Supports automated mounting: supplied in embossed tape.

General Specifications

Number of Contacts	6 (+2 Switches)
Current Rating (per contact)	0.5 A max.
Voltage Rating	10 V
D.W.Voltage	AC 500 Vr.m.s. (for 1 minute)
Insulation Resistance	1,000 MΩ min.
Contact Resistance	100 mΩ max. (Switch: 1 Ω max.)
Durability	5,000 mating cycles
Operating Temperature Range	-25 deg.C to +85 deg.C

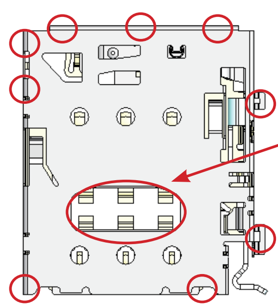
■ Locking Structure with Excellent Drop Impact Resistance



If the pin eject operation is not performed, the lock and stopper interfere with each other to prevent the tray from falling out.

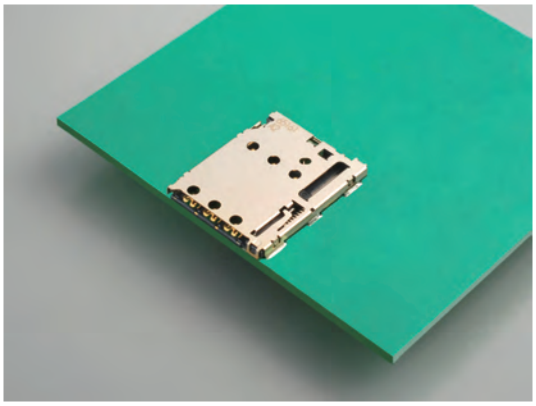
■ Designed for Visual Inspection and Repair of Solder Joints

○ : **Soldering Areas**



- ■ **Large opening in cover allowing for visual inspection and repair.**
- ■ **All other soldering parts are set on the outer periphery.**

Nano SIM Card Connector
SF72 Series



Features

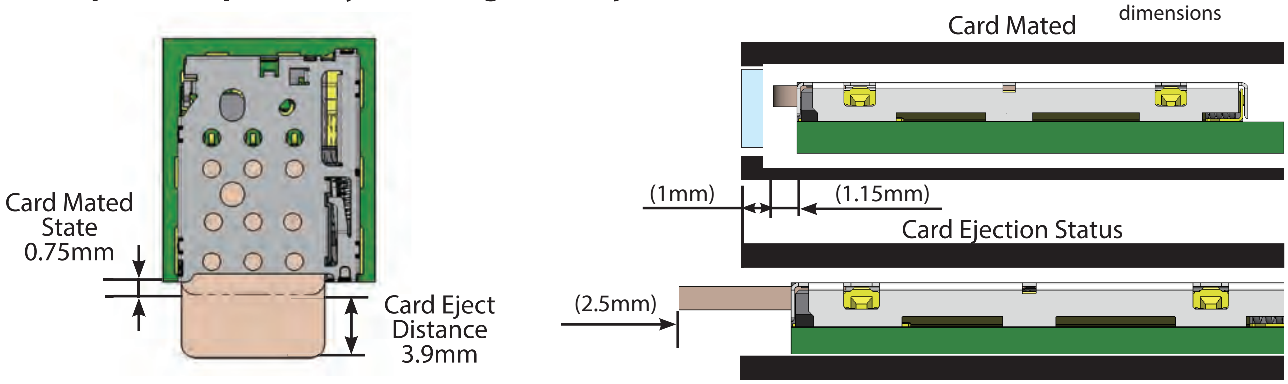
- Low-profile design with height of 1.25 mm, width of 11.2 mm, and depth of 14.35 mm
- Good operability with enlarged card eject length (3.9 mm).
- Card mis-insertion measure that does not lock if card is mis-inserted.
- Contact structure that prevents them from being damaged if a card is inserted at an angle.

General Specifications

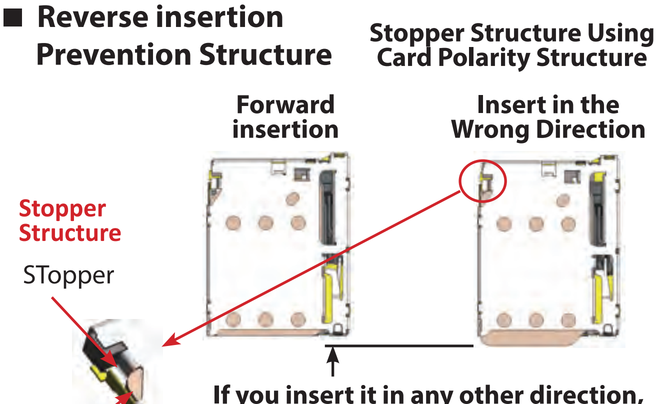
Number of Contacts	6 (+2 Switches)
Current Rating(per contact)	0.5 A max.
Voltage Rating	10 V
D.W.Voltage	AC 500 Vr.m.s. (for 1 minute)
Insulation Resistance	1,000 MΩ min.
Contact Resistance	100 mΩ max. (Switch: 1Ω max.)
Durability	5,000 mating cycles
Operating Temperature Range	-25 deg.C to +85 deg.C

■ Improved Operability with Large Card Ejection

※ Our recommended design dimensions

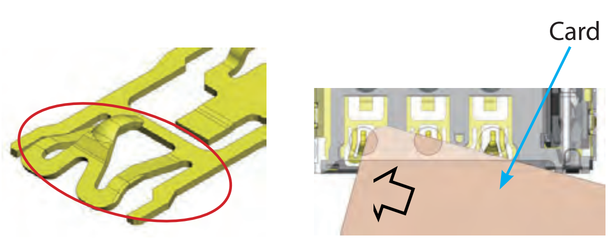


■ Reverse insertion Prevention Structure



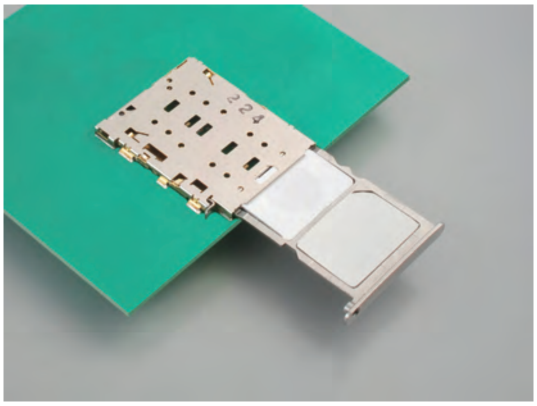
If you insert it in any other direction, it will not push all the way in.

■ Contact Buckling Prevention Structure



Tapered structure prevents card from buckling even when inserted at an angle

Dual Nano SIM Card Connector
SF78 Series



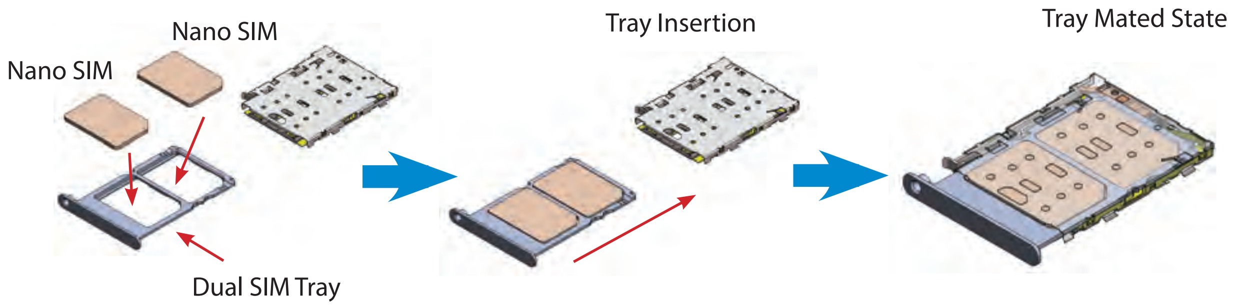
Features

- 2 nano SIM cards can be installed in one connector.
- Mechanical lock structure that holds tray in place in case device is dropped.
- Compact and slim design:
  1.3 mm height, 17.5 mm width, 21.4 mm depth
- With card detection switch (normally-closed types).

General Specifications

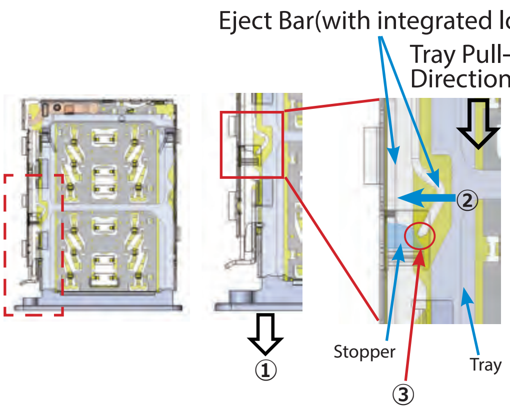
Number of Contacts	12 (+2 Switches)
Current Rating (per contact)	0.5 A max.
Voltage Rating	10 V
D.W.Voltage	AC 500 Vr.m.s. (for 1 minute)
Insulation Resistance	1,000 MΩ min.
Contact Resistance	100 mΩ max. (Switch: 1 Ω max.)
Durability	2,500 mating cycles
Operating Temperature Range	-40 deg.C to +85 deg.C

■ Two Nano SIM Cards can be Mounted in One



■ Robust Locking Structure

Tray removal (in case of incorrect operation)

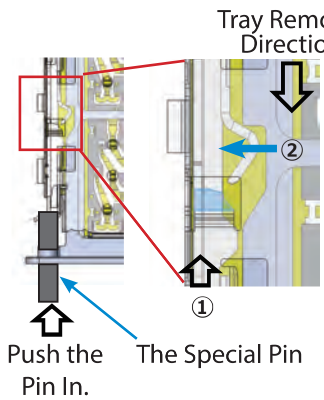


① Pull out the tray (Misoperation)

② When the tray is pulled out, the eject bar is pressed.

③ The lock part and the stopper interfere with each other.

Pin Eject Operation Tray Removal (normal operation)



① By pushing the pin in,The eject bar lifts up

② When the tray is pulled out, the eject bar is pressed.

③ Tray Ejection

If the pin eject operation is not performed, the lock and stopper will interfere with each other, preventing the tray from falling out.

USB Type- C® Connector
DX07 Series / Receptacle

* USB4®, USB Type-C® and USB-C® are trademarks of USB- IF (USB Implementers Forum, Inc.)

Features

- Compliant with Universal Serial Bus Type-C Specification Release 2.3 (Waterproof type is USB Type-C mating compatible connector)
- Supports USB PD Extended Power Range (EPR), delivering up to 240 W (5 A/48 V)
- Lock structure with superior durability.
- Excellent EMI/EMC characteristics.
- Large selection of connector variations are available.

General Specifications

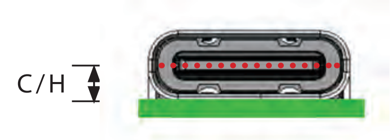
Number of Contacts	16,24
Rated Current	V_{BUS} : DC 5 A max. GND: DC 6.25 A max. V_{CONN} : DC 1.25 A max. Others : DC 0.25 A max.
Voltage Rating	AC 48 V
D.W.Voltage	AC 100 Vr.m.s. (for 1 minute)
Insulation Resistance	100 MΩ min.
Contact Resistance	40 mΩ max.
Durability	10,000 mating cycles
Operating Temperature Range	Angle: -40 deg.C to +85 deg.C Straight: -30 to +85 deg.C

■ Wide Variety of Options

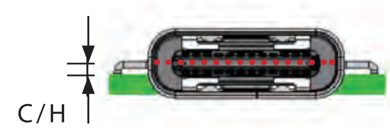
＊ Center height (C/H)… The height from the board mounting surface to the center of the connector mating surface

		Not waterproof			Waterproof	
2-rou SMT (24 Pos.)	Onboard					
	*C/H (mm)	1.57	1.57	1.57	1.5	
	Mid Mount					
	*C/H (mm)	0.47	-0.64	0.47	1.35	1.35
	Straight					
	H (mm)	12	10	10		
1row SMT (16 Pos.)						
*C/H (mm)		1.57				
Hybrid (24 Pos.)						
*C/H (mm)		0.7	1.6	2.0	3.4	3.4

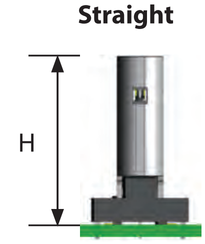
Onboard



Mid Mount



Straight



USB Type- C® Connector
DX07 Series / USB4® Receptacle

＊1 USB4®, USB Type- C® and USB-C® are trademarks of USB- IF (USB Implementers Forum , Inc.)
＊2 Thunderbolt TM is an Intel is a trademark of the Corporation.

Features

- Compliant with Universal Serial Bus Type-C Specification Release 2.3
- Supports USB PD Extended Power Range (EPR), delivering up to 240 W (5 A/48 V).
- Supports USB 80Gbps high-speed transmission
- Tunneling enables consolidation of external interfaces of devices

General Specifications

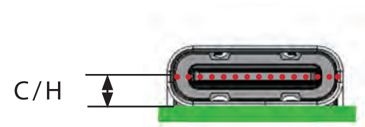
Number of Contacts	24
Rated Current	V_{BUS}: DC 5 A max. GND: DC 6.25 A max. V_{CONN}: DC 1.25 A max. Others: DC 0.25 A max.
Voltage Rating	AC 48 V
D.W.Voltage	AC 100 Vr.ms. (for 1 minute)
Insulation Resistance	100 MΩ min.
Contact Resistance	40 mΩ max.
Durability	10,000 mating cycles
Operating Temperature Range	-40 deg.C to +85 deg.C

■ Variations

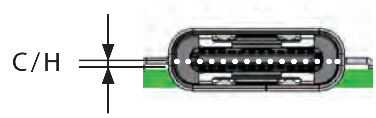
＊ Center height (C/H): The height from the board mounting surface to the center of the connector mating surface

		Standard		With bracket	
2-row SMT (24 Pos.)	Onboard	(Ni plating) 	(Black Ni plating) 		
	*C/H(mm)	1.57	1.57	1.57	3.4
	Mid Mount	(Ni plating) 	(Black Ni plating) 		
	*C/H(mm)	0.47	0.47	0.47	-0.1

Onboard

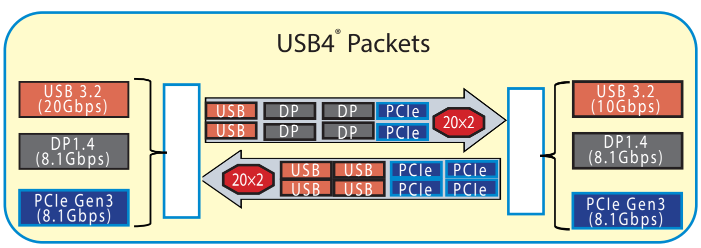


Mid Mount



■ Tunneling

Implemented with USB4®, this transmission technology is based on Intel® Thunderbolt™ 3, allowing for the transmission of mixed packets of various standards on the same line. It can dynamically allocate packets within the 80 Gbps bandwidth according to the data volume, enabling efficient utilization of the 80Gbps capacity.



It is possible to combine multiple communication standards on a single interface.

Distributes USB 3.2, DP 1.4, and PCIe (optional) within the 80 Gbps bandwidth according to data volume and transmits them within USB4 packets.

USB Type- C® Connector
DX07 Series / Plug

∗USB4®, USB Type- C® and USB- C® are trademarks of USB- IF (USB Implementers Forum, Inc.)

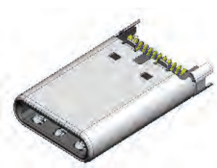
Features

- Compatible with Universal Serial Bus Type-C Specification Release 2.3 (The vertical type is a USB Type-C compatible connector.)
- Supports USB PD Extended Power Range (EPR), allowing for power delivery of up to 240W (5A/48 V).
- Supports high-speed transmission of USB 20 Gbps / USB 80Gbps.
- Superior EMI/ EMC characteristics.
- Features a locking structure with excellent durability.

General Specifications

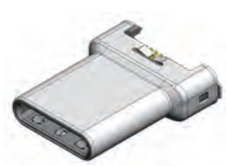
Number of Contacts	22, 24
Rated Current	V_{BUS}: DC 5 A max. GND: DC 6.25 A max. V_{CONN}: DC 1.25 A max. Others: DC 0.25 A max.
Voltage Rating	AC 48 V
D.W.Voltage	AC 100 Vr.ms. (for 1 minute)
Insulation Resistance	100 MΩ min.
Contact Resistance	40 mΩ max.
Durability	10,000 mating cycles
Operating Temperature Range	-40 deg.C to +85 deg.C

■ Variations According to Purpose

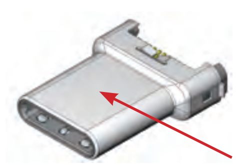
For cables			For cradle and docking
Stamped Shell	Drawn Shell		Stamped Shell
USB 3.2		USB 4	USB 3.2
22,24 Pos.	24 Pos.	22 Pos.	24 Pos.
			

Drawm Shell

Front

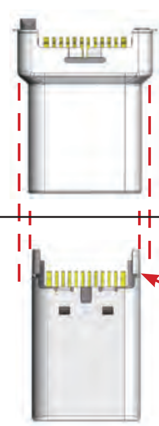


Back



Seamless shell for a reversible look

Top



Stamped Shell

Front

Back

The slim outline with no protrusions allows for high design freedom

USB Type- C® Connector
DX07 Series / Cable Harness

(Note) This product is sold as a harness.

＊ USB4® , USB Type- C® and USB-C® are trademarks of USB- IF (USB Implementers Forum , Inc.)

Features

- Compatible with USB Type-C Cable and Connector Specification Release 2.3
- Supports high-speed data transfer of up to 10 Gbps (USB 10 Gbps).*
- Compatible with USB Power Delivery Revision 3.2, enabling power delivery of up to 100 W (5 A/20 V)*.
- Available with a screw lock for securely fixing to the device housing.
  (The screw lock attachment dimensions conform to the screw lock USB Type-C standard.)

＊USB 10Gbps with cable harness on both ends

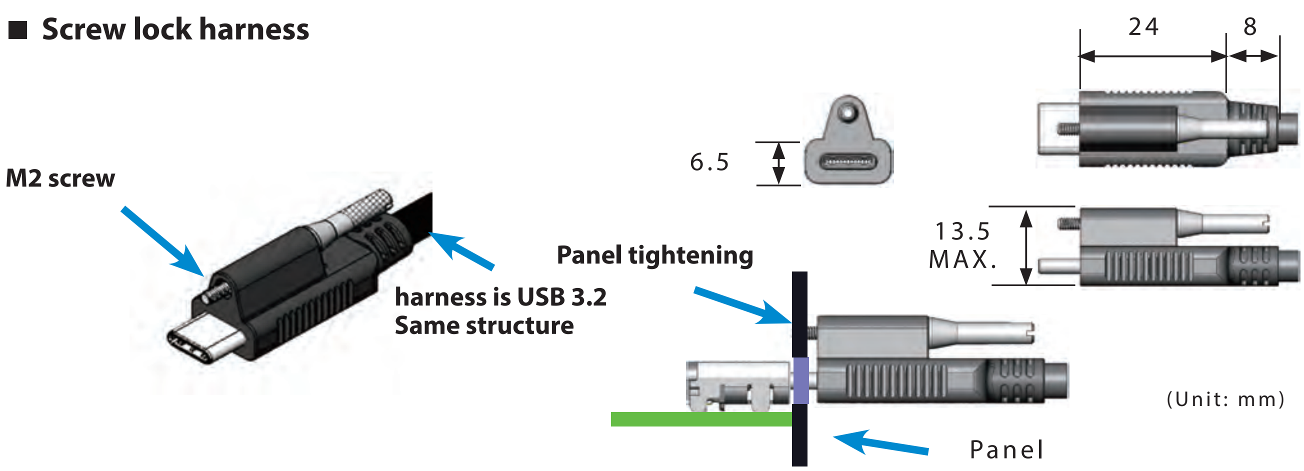
General Specifications

Number of Contacts	24
Applicable standards	1m: USB 3.2 Gen 2　2 m: USB 3.2 Gen 1
Rated Current (V_{BUS})	1 m: 5 A max.　2 m: 3 A max.
Voltage Rating	AC 20 V
D.W.Voltage	AC 40 Vr.m.s. (for 1 minute)
Insulation Resistance	10 MΩ min.
Contact Resistance	40 mΩ max.
Durability	10,000 mating cycles
Operating Temperature Range	PVC material: + 10 deg.C to +40 deg.C TPE material: -20 deg.C to +50 deg.C

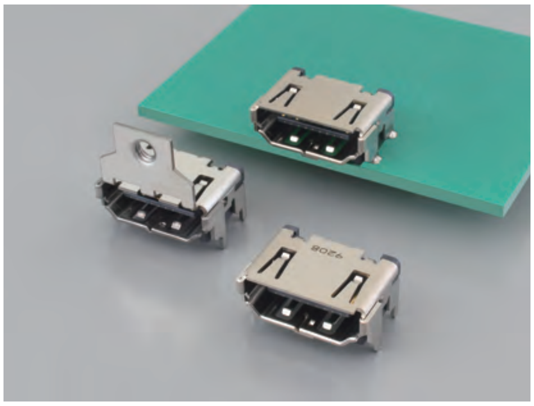
■ Cable harnesses

◆Equipped with a highly reliable in-house plug connector that is USB-IF certified
◆High-quality harness with consistent quality control from connector manufacturing to harness assembly
◆Flexible support for custom designs

■ Screw lock harness



HDMI™ 2.1 Standard-Certified Connectors
DC04 Series



HDMI , High- Definition Multimedia The HDMI Interface , and the HDMI Logo are trademarks of HDMI Corporation in the United States and other countries. Licensing are trademarks or registered trademarks of

Features

- Improved and consistent impedance characteristics due to insert mold structure
- Reduced crosstalk by optimizing the position of each channel's terminals
- Enhanced robustness with original structure of shell tip

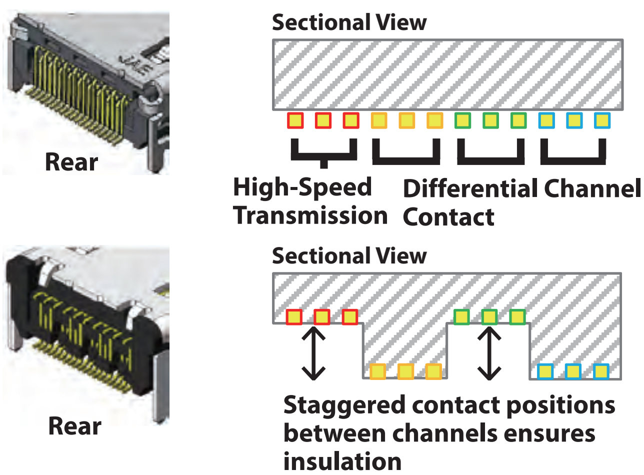
General Specifications

Number of Contacts	19
Current Rating (per contact)	0.5 A max.
D.W.Voltage	AC 500 Vr.m.s. (for 1 minute)
Insulation Resistance	100 MΩ min.
Operating Temperature Range	-20 deg.C to +85 deg.C

■ Optimized Contact Position for Each Channel

Previous Products

DC04



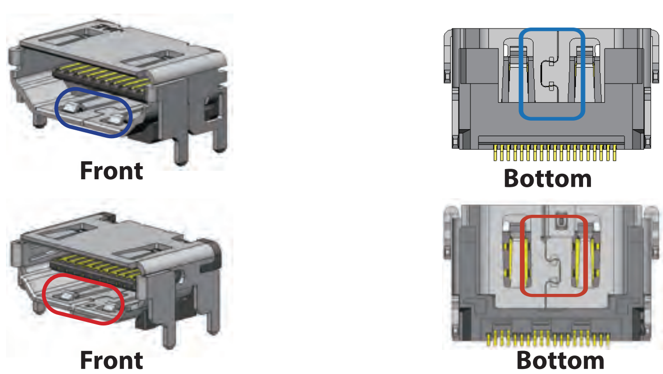
With the increase in transmission speed, Crosstalk between channels is an issue

Crosstalk is reduced by optimizing the contact position of each channel (patent owned by our company)

■ Shell Overlap Crimping Structure

Previous Products

DC04



Strength against prying during user handling is an issue.

Improved robustness through unique shell overlap crimping structure (patent owned by our company)

PCI-SIG® M.2 Specification Compatible Card Edge Connector
SM3 Series

∗ PCI-Express® is a registered trademark of PCI-SIG.

Features

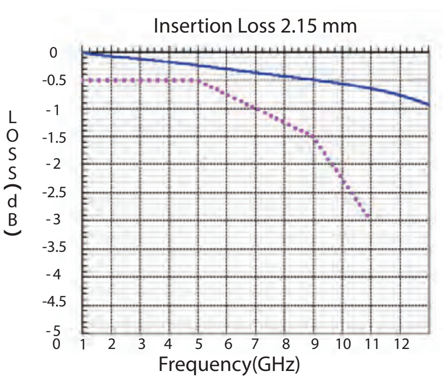
- Compliant with PCI Express M.2 Specification and enables transmission of PCIe Gen 4 (on board type)/ PCIe Gen 3 (mid mount type), USB 3.0, DisplayPort, SATA, and others
- On-board type and Mid-mount type are available
  Onboard type heights: 2.15 mm, 3.1mm, 4.1 mm
  Mid-mount type height: 1.2 mm
- Compatible with four types of polarity keys, allowing for various modules to be used

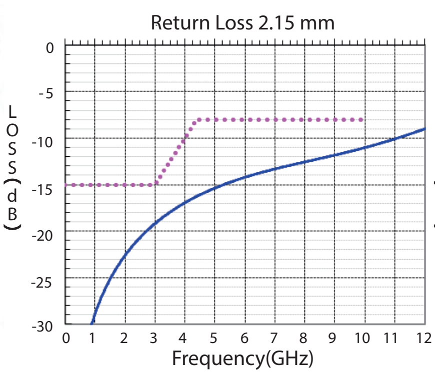
General Specifications

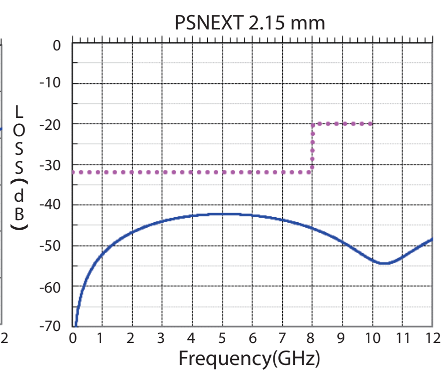
Number of Contacts	67
Current Rating (per contact)	0.5 A max.
D.W.Voltage	AC 300 Vr.m.s. (for 1 minute)
Insulation Resistance	500 MΩ min.
Contact Resistance	55 mΩ max.
Durability	60 mating cycles
Operating Temperature Range	-40 deg.C to +80 deg.C

■ PCIe® Supports PCIe Gen4 Standard Transmission

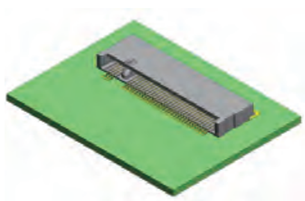
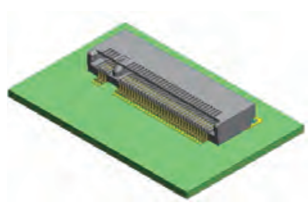
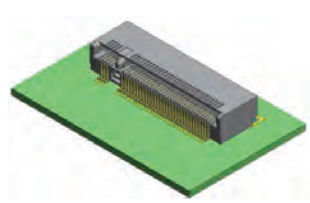
Simulation characteristics for product height 2.15 mm







■ Product Height of On-Board Mounted Product

Height	2.15 mm	3.1 mm	4.1 mm
Exterior			

Smart Textile Compatible Connector
RK01 Series

Features

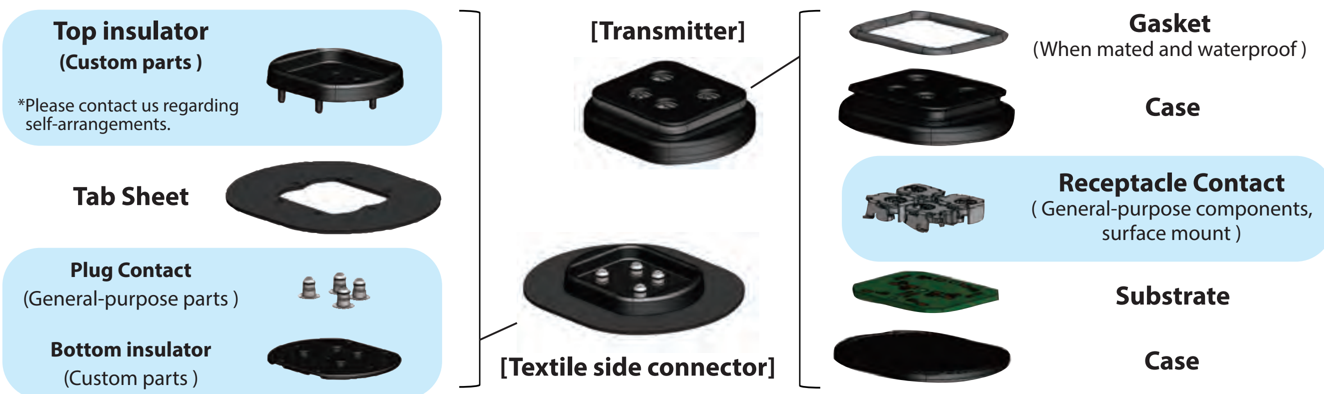
- Washable in a domestic washing machine (When transmitter is detached)
- Proprietary contact structure which allows for multiple circuits to be attached and detached in one action
- Highly versatile: supporting a wide variety of conductive materials and pin counts
- Waterproof when the transmitter is mated

General Specifications

Number of Contacts	2 positions or more
Contact Resistance	Initial: 1 Ω max., After test: 5 Ω max.
Durability	500 times
Washing Test	JIS L 1930 (C4G)
Operating Temperature Range	-20 deg.C to +50 deg.C
D.W.Voltage	AC 250 Vr.ms., 1m A max. (for 1 minute)

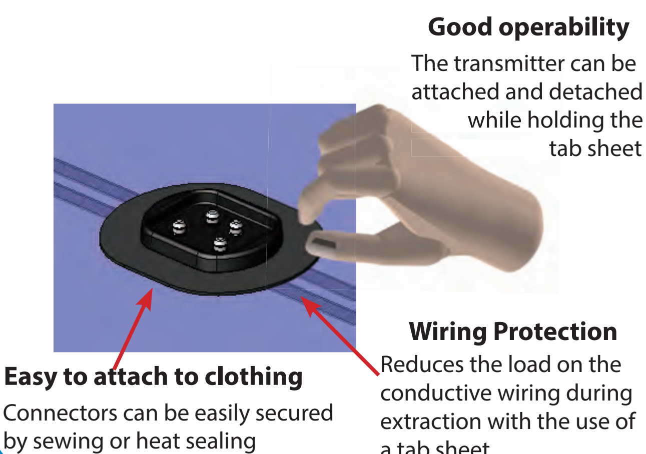
■ Components

This product is available in the form of individually sold kits consisting of various contacts, top insulators, and bottom insulators provided by JAE. Please arrange for other parts and the complete assembly of the plug and receptacle based on JAE's guidance.



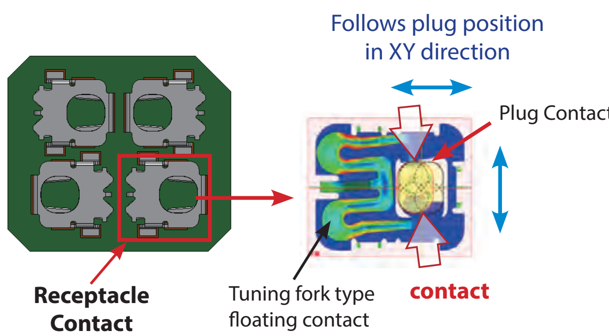
: **Products manufactured and sold by our company**

■ Effects of our recommended tab sheet specifications



■ Floating mechanism

With the floating function:
- •Achieves a stable connection that is resistant to sudden disconnections
- •Absorbs manufacturing position deviations, allowing for simultaneous mating of multiple contacts



Selection Guide   Mobile Device Connectors

Notice:

1. The specifications provided in this brochure are for reference purpose only. The products and their specifications are subject to change without notice. Please contact our sales representatives for further information before considering or placing an order. A formal product specification must be agreed upon prior to purchase.
2. Users are responsible for implementing appropriate protection and redundancy circuits to ensure safety of the equipment and sufficiently review the suitability of JAE's products to the equipment.
3. The products presented in this brochure are designed for the uses recommended below.
   We strongly suggest you contact our sales staff when considering use of any of the products in any other way than the recommended applications or for a specific use that requires an extremely high reliability.

(1) Applications that require consultation:

(i) Please contact us if you are considering use involving a quality assurance program that you specify or that is peculiar to the industry, such as:
Automotive electrical components, train control, telecommunications devices (mainline), traffic light control, electric power, combustion control, fire prevention or security systems, disaster prevention equipment, etc.

(ii) We may provide separate support based on your specified quality assurance program, when you think of a use such as :
Aviation or space equipment, submarine repeaters, nuclear power control systems, medical equipment for life support, etc.

(2) Recommended applications include:
Computers, office appliances, telecommunications devices (terminals, mobile units), measuring equipment, audiovisual equipment, home electric appliances, factory automation equipment, etc.

Japan Aviation Electronics Industry, Limited

https://www.jae.com/