



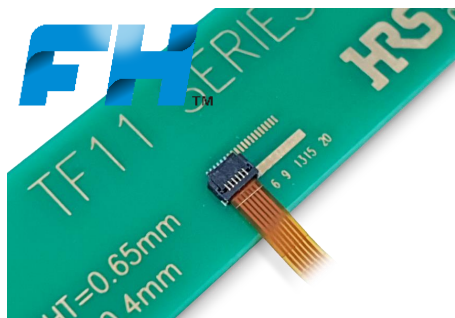
Back Flip



Close without FPC



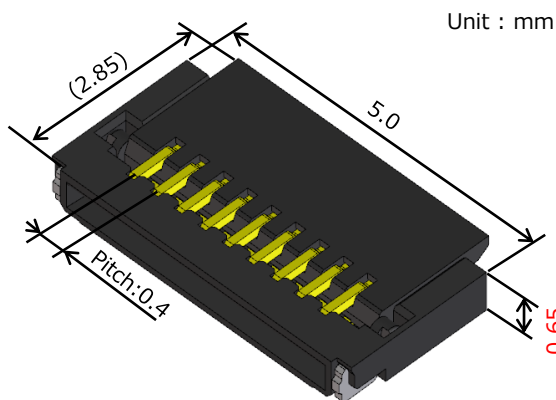
Ultra Low Profile



Features

- 1 Space saving
 - 0.4mm Pitch, 3.0mm Mounting Depth, 0.65mm Height
- 2 Back Flip Design (Front Axis™)
 - Actuator is closed during delivery and mounting to prevent damage
 - Contact gap for FPC insertion is guaranteed regardless of actuator operation
- 3 High reliability
 - High FPC retention force with FPC side catch design
 - Solder wicking and flux penetration prevention

Dimensions (9pos.)



※ Variations : 9 pos.

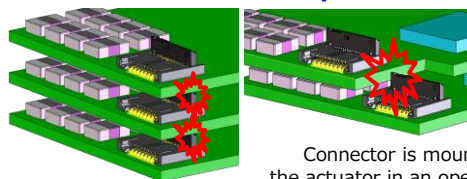
Алматы (7273)495-231
Ангарск (3955)60-70-56
Архангельск (8182)63-90-72
Астрахань (8512)99-46-04
Барнаул (3852)73-04-60
Белгород (4722)40-23-64
Благовещенск (4162)22-76-07
Брянск (4832)59-03-52
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Back Flip Design (Front Axis™)

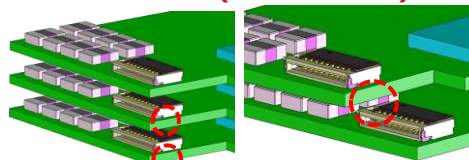
Conventional Back Flip Connector



Connector is mounted with the actuator in an opened state

⇒ Actuator might be damaged

TF11 Series (Front Axis™)



Магнитогорск (3519)55-03-13
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Мурманск (8152)59-64-93
Набережные Челны (8552)20-53-41
Нижний Новгород (831)429-08-12
Новокузнецк (3843)20-46-81
Ноябрьск (3496)41-32-12
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Тамбов (4752)50-40-97
Тверь (4822)63-31-35

Киргизия +996(312)96-26-47

Specifications

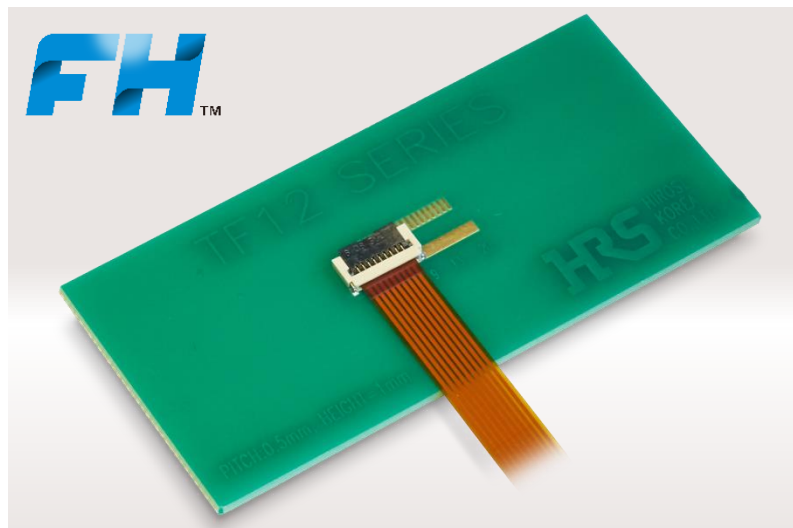
Contact Resistance *1	100mΩ Max.
Withstanding Voltage	150V AC for 1minute
Insulation Resistance	500MΩ Min. (100V DC)
Rated Current	0.5A
Rated Voltage	50V AC/DC
FPC Thickness	0.12±0.02mm

• RoHS compliant, Halogen-free product *2

*1 FPC resistance is included.

*2 This product satisfies halogen free requirements defined as 900ppm maximum chlorine, 900ppm maximum bromine, and 1,500ppm maximum total of chlorine and bromine.

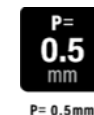
Тольятти (8482)63-91-07
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Тула (4872)33-79-87
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Чита (3022)38-34-83
Якутск (4112)23-90-97
Ярославль (4852)69-52-93



FH Flip-Lock Pioneer **Hirose**

Features

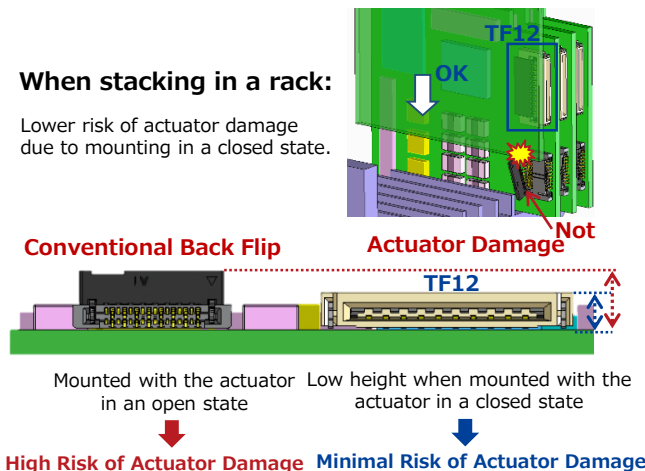
- Space-Saving**
 - 0.5mm Pitch, 3.9mm Mounting Depth, 1.0mm Height
- Back Flip Design (Front Axis™)**
 - Actuator is closed during delivery and mounting to prevent damage
 - Contact gap for FPC insertion is guaranteed regardless of actuator operation
- High Reliability**
 - High FPC retention force with FPC side catch design
 - Solder wicking and flux penetration prevention



Actuator Damage Prevention

When stacking in a rack:

Lower risk of actuator damage due to mounting in a closed state.

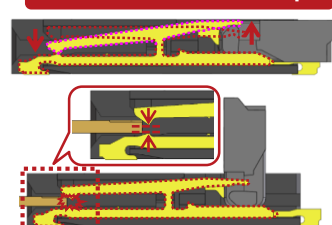


Can Close Actuator Before FPC Insertion

In case of unintentional actuator closing:

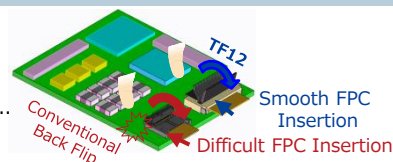
When the actuator is accidentally closed without the FPC inserted...

Conventional Back Flip

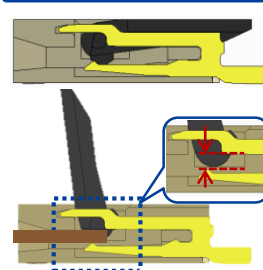


If the actuator is closed when the FPC is not inserted and then reopened, the contact gap becomes narrower.

⇒ **FPC Insertion Force Increases**



TF12



No change in the contact gap

⇒ **Superior FPC Insertion**

Specifications

Rated Current	0.5A
Rated Voltage	50V AC/DC
Operating Temperature	-55 to +85°C
Contact Resistance*1	100mΩ Max.
Insulation Resistance	500MΩ Min. (100V DC)
Withstanding Voltage	150V AC for i min.

*1 Including FPC resistance

- Reflow Temperature: 260°C Max.

- FPC Thickness: 0.2±0.03mm

- RoHS, Halogen-free*2 product

- Variations:

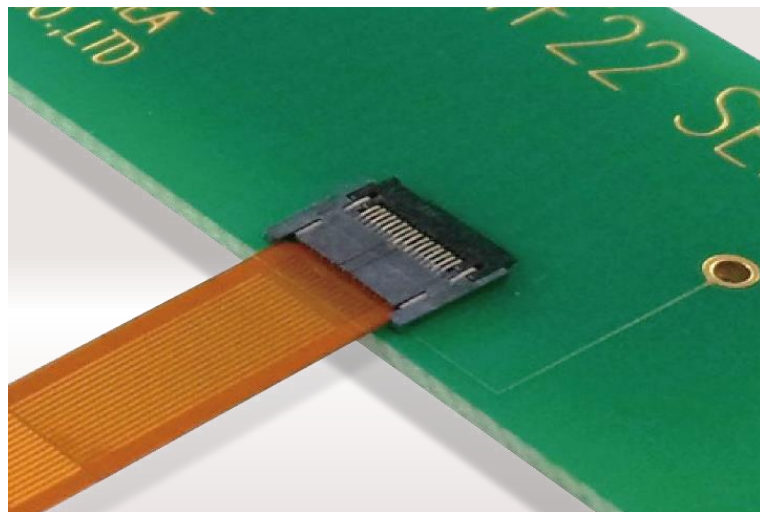
(TF12 and TF12S differ in the recommended FPC specifications. TF12S and TF12SD differ in the actuator materials.)

TF12: 9pos.

TF12S: 4, 6, 13, 15, 20pos.

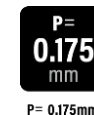
TF12SD: 10pos.

*2 This product satisfies halogen free requirements defined as 900ppm maximum chlorine, 900ppm maximum bromine, and 1,500ppm maximum total of chlorine and bromine.

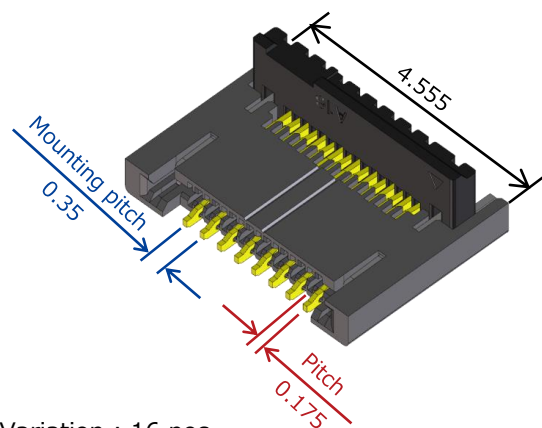


Features

- 1 Space saving, Ultra low profile**
 - 0.175mm Pitch, 0.66mm Height, 3.52mm Mounting depth
- 2 High reliability**
 - High FPC retention force with FPC side-catch design
 - Solder wicking and flux penetration prevention
- 3 User friendly design**
 - Wide Tapers for smooth FPC insertion



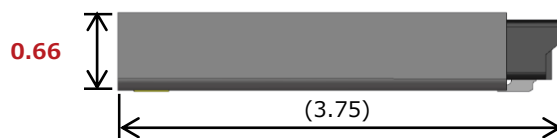
Dimensions (16pos.)



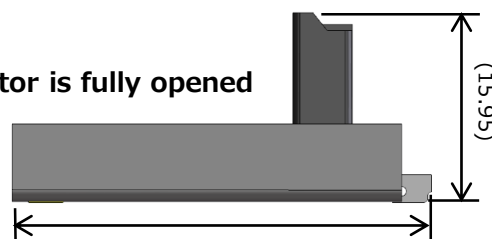
※ Variation : 16 pos.

Actuator in a closed state

Unit : mm



Actuator is fully opened



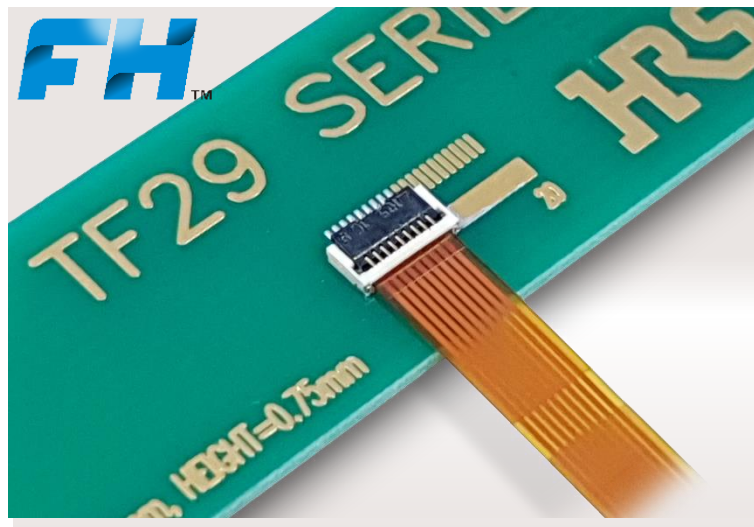
Specifications

Contact Resistance ^{*1}	300mΩ Max.
Withstanding Voltage	90V AC for 1 minute
Insulation Resistance	50MΩ Min. (100V DC)
Rated Current	0.15A
Rated Voltage	30V AC/DC
FPC Thickness	0.12±0.02mm

• RoHS compliant, Halogen-free product^{*2}

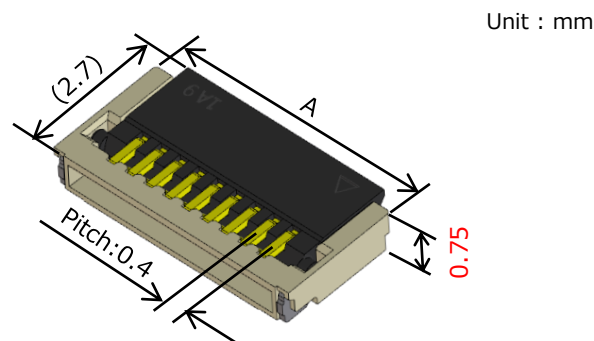
^{*1} FPC resistance is included.

^{*2} This product satisfies halogen free requirements defined as 900ppm maximum chlorine, 900ppm maximum bromine, and 1,500ppm maximum total of chlorine and bromine.



FH... Flip-Lock Pioneer HROSE

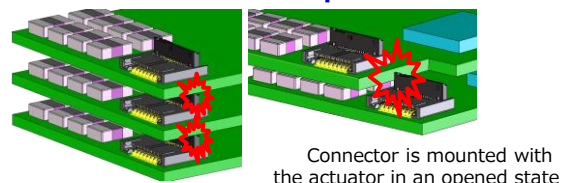
Dimensions



Pos.	8	9	13
A	4.6	5.0	6.6

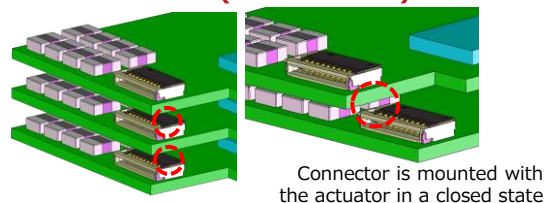
Back Flip Design (Front Axis™)

Conventional Back Flip Connector



⇒ Actuator might be damaged

TF29 Series (Front Axis™)



Features

- Space saving**
 - 0.4mm Pitch, 3.0mm Mounting Depth, 0.75mm Height
- Back Flip Design (Front Axis™)**
 - Actuator is closed during delivery and mounting to prevent damage
 - Contact gap for FPC insertion is guaranteed regardless of actuator operation
- High reliability**
 - High FPC retention force with FPC side catch design
- User-friendly design**
 - Fully enclosed molded design enables flexible PCB patterning



Back Flip



Close without FPC



Low Profile

Specifications

Contact Resistance*1	100mΩ Max.
Withstanding Voltage	150V AC for 1 minute
Insulation Resistance	500MΩ Min. (100V DC)
Rated Current	0.5A
Rated Voltage	50V AC/DC
FPC Thickness	0.12±0.02mm

• RoHS compliant, Halogen-free product *2

*1 FPC resistance is included.

*2 This product satisfies halogen free requirements defined as 900ppm maximum chlorine, 900ppm maximum bromine, and 1,500ppm maximum total of chlorine and bromine.



FH Flip-Lock Pioneer Hirose

Features

- 1 Space-Saving**
 - 0.35mm Pitch, 3.0mm Mounting depth, 0.9mm Height
- 2 Back Flip Design (Front Axis™)**
 - Actuator is closed during delivery and mounting to prevent damage
 - Contact gap for FPC insertion is guaranteed regardless of actuator operation
- 3 High reliability**
 - High FPC retention force with FPC side catch design
 - Solder and flux wicking prevention



Back Flip

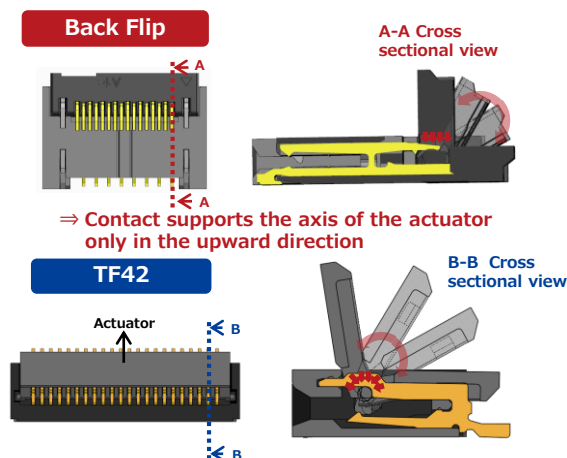


Close without FPC

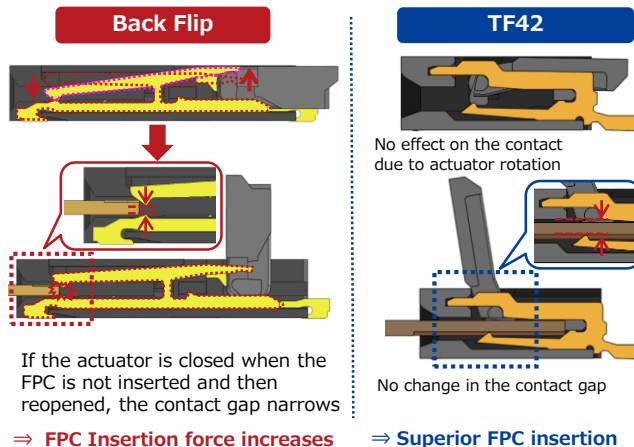


Robust

Actuator Damage Prevention



Contact Deformation Prevention



Specifications

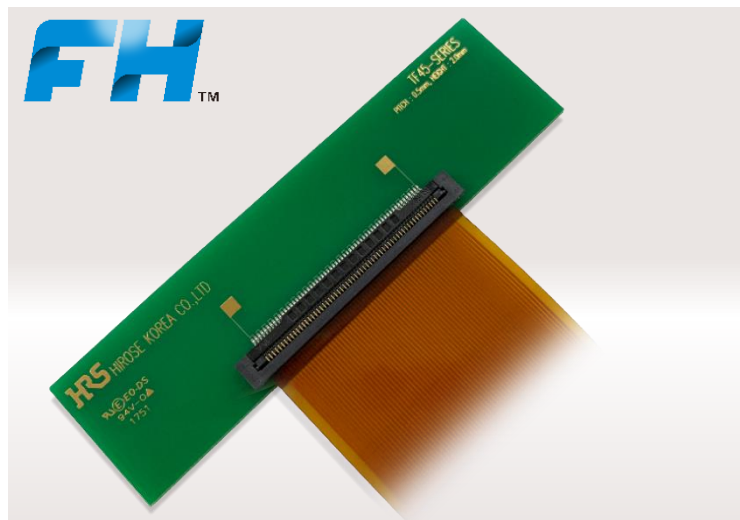
Rated Current	0.4A
Rated Voltage	30V AC/DC
Operating Temperature	-55 to +85°C
Contact Resistance*1	100mΩ Max.
Insulation Resistance	500MΩ Min. (DC 100V)
Withstanding Voltage	150V AC for 1 min.
Reflow temperature	Max.250°C*2

• RoHS compliant, Halogen-free product*3

*1 FPC resistance is included.

*2 Lead-free solder has been used.

*3 This product satisfies halogen free requirements defined as 900ppm maximum chlorine, 900ppm maximum bromine, and 1,500ppm maximum total of chlorine and bromine.



FH ... Flip-Lock Pioneer Hirose

Features

- 1 Consistent reliability**
 - High FPC retention force with FPC side catch design
- 2 Back Flip/Front Axis™**
 - Actuator is closed during delivery and mounting to prevent damage
 - Contact gap for FPC insertion is guaranteed regardless of actuator operation
- 3 User-friendly design**
 - Tapers for smooth FPC/FFC insertion
 - Can check FPC position
- 4 Suitable for automotive infotainment**



Back Flip



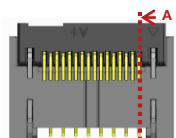
Close without FPC



Automotive

Contacts Prevent Actuator from Coming Off

Conventional Back Flip

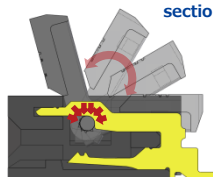


⇒ Contact supports the rotating axis of the actuator only in the upward direction

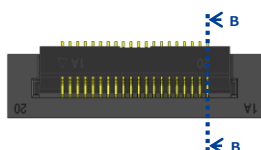
A-A Cross sectional view



B-B Cross sectional view



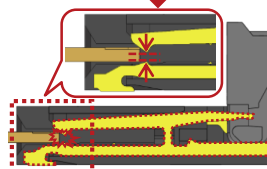
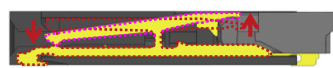
TF45



⇒ Contact covers the rotating axis of the actuator.

Contact Deformation Prevention

Conventional Back Flip



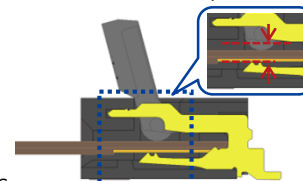
If the actuator is closed when the FPC is not inserted and then reopened, the contact gap becomes narrower.

⇒ FPC insertion force increases

TF45



No effect on the contact from actuator operation



No change in the contact gap

⇒ Superior FPC insertion

Specifications

Rated Current	0.5A
Rated Voltage	50V AC/DC
Operating Temperature	-40 to +105°C
Contact Resistance*	50mΩ Max.
Insulation Resistance	500MΩ Min. (500V DC)
Withstanding Voltage	250V AC for 1 min.

* Includes FPC conductor resistance

- Reflow temperature: 250°C^{*1} Max.
- RoHS compliant, Halogen-free product^{*2}
- Variations : 10, 15, 20, 25, 30, 40, 50, 60pos.

^{*1} Lead-free solder has been used.

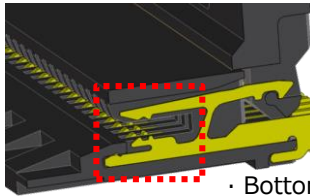
^{*2} This product satisfies halogen free requirements defined as 900ppm maximum chlorine, 900ppm maximum bromine, and 1,500ppm maximum total of chlorine and bromine.



Features

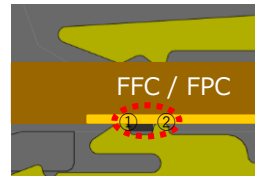
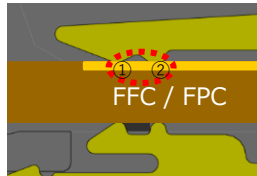
- User-friendly design**
 - Top & bottom contact increases design flexibility
 - Easy FFC/FPC insertion (Packaged with open actuator)
- High reliability**
 - 2-point contact design
 - Enhanced vertical retention force with back flip design
- Environment compliance**
 - RoHS, Halogen free compliance

Top & Bottom Contact



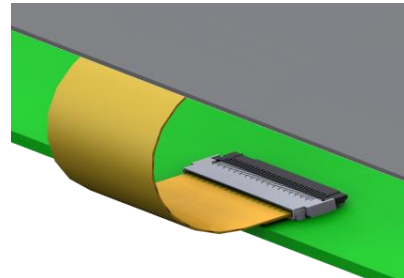
• Top contact

• Bottom contact



- Top & bottom contact improves design flexibility
- 2-point contact design assures reliable electrical connection

Suitable for FPC/FFC Routing



High FFC/FPC retention force with the back flip design is especially suitable for flexed FFC/FPC connection.

Specifications

Contact Resistance*1	50mΩ Max.
Withstanding Voltage	250V AC for 1 minute
Insulation Resistance	100 MΩ Min. (500V DC)
Rated Current	0.5A
Rated Voltage	50V AC/DC
FPC Thickness	0.3±0.03mm

- RoHS compliant, Halogen-free product *2

*1 FPC resistance is included.

*2 This product satisfies halogen free requirements defined as 900ppm maximum chlorine, 900ppm maximum bromine, and 1,500ppm maximum total of chlorine and bromine.

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