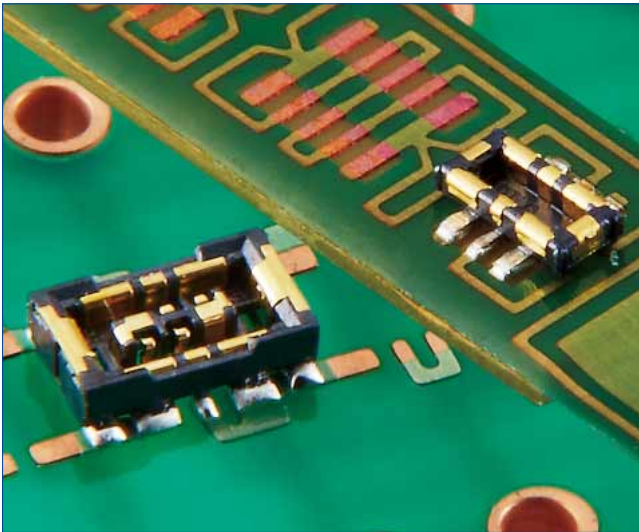


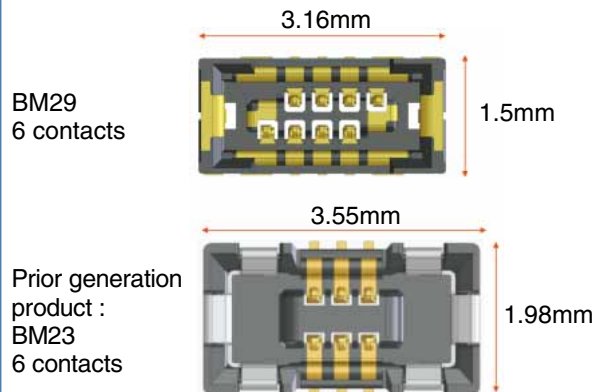
**NEW**

# Ultra-small, power/signal contact design for Board-to-Board/FPC-to-Board providing 3A max current

## BM29 Series



20% reduction in size compared with alternate Hirose's products



The narrower and shorter, yet flexible design allows tight installation.

Fig.1

### ■ Features

#### 1. Space-saving design

Compact and flexible design ideal for mobile devices. (Fig.1)

•Pitch : 0.35mm, Depth : 1.5mm, Stacking height : 0.6mm

#### 2. Equipped with power contacts capable of handling up to 3A current. (Fig.2)

•Rated current : 3A (power contact), 0.3A (signal contact)

#### 3. The proprietary metal guide prevents the connector from being damaged against offset mating. (Fig.3)

#### 4. A tactile click ensures secure mating. (Fig.4)

#### 5. 2-points of contact offer high contact reliability.

### Combination Power / Signal contact design

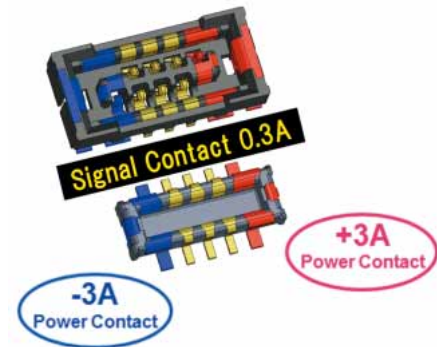


Fig.2

### Contacts mating is designed to reduce connector damage even if mated incorrectly.

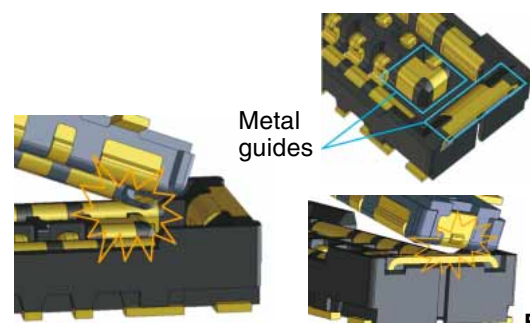


Fig.3

### The contact is designed to provide a tactile click.

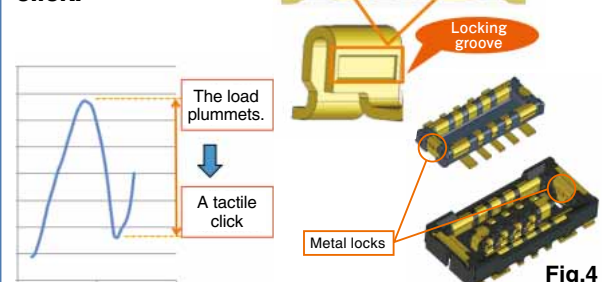


Fig.4

## Product Specifications

Rated current	Power contact : 3A Signal contact : 0.3A	Operation temperature range	-40 to 85°C (Note 1)	Storage temperature range	-10 to 60°C (Note 2)
Rated voltage	30V AC/DC	Operation humidity range	90% RH or below (Note 3)	Storage humidity range	90% RH or below (Notes 2 and 3)

Items	Specifications	Conditions
1. Insulation resistance	Minimum of 1000MΩ	Measured at 100V DC
2. Withstanding voltage	There shall be no flashover or dielectric breakdown.	150V AC for 1 minute
3. Contact resistance	Signal contact : 100mΩ max. Power contact : 30mΩ max.	Measured at 20mV AC, 1kHz, and 1mA
4. Vibration resistance	There shall be no instantaneous power failure lasting for a minimum of 1μs.	Frequency : 10 to 55 Hz, Half amplitude : 0.75mm, in 3 axis directions for 10 cycles each (5 minutes/cycle)
5. Moisture resistance	Contact resistance : Signal contact : 100mΩ max. Power contact : 30mΩ max. Insulation resistance : 100MΩ min.	Temperature : 40±2°C, Humidity : 90 to 95%, left as it is for 96 hours
6. Temperature cycle	Contact resistance : Signal contact : 100mΩ max. Power contact : 30mΩ max. Insulation resistance : 100MΩ min.	(-55°C for 30 minutes → 5 to 35°C for 10 minutes → 85°C for 30 minutes → 5 to 35°C for 10 minutes) in 5 cycles
7. Mating durability	Contact resistance : 100mΩ max.	Mating times : 10 times
8. Soldering heat resistance	There shall be no dissolution of the resin part affecting the performance.	Reflow : according to the Recommended temperature profile Hand soldering : temperature of soldering iron at 350°C for within 3 seconds

Note 1 : Includes temperature rise caused by current flow.

Note 2 : Storage refers to long-term-storage of unused items before they are mounted on the PCB.

Operating temperature / humidity range applies to the state of temporary storage such as non-powered after mounting on the PCB, and during transportation, etc.

Note 3 : Avoid a high humidity environment.

## Materials / Finish

Product	Part	Material	Finish	UL specification
Receptacle Header	Insulator	LCP	Black	UL94V-0
	Signal contact	Phosphor bronze	Gold plated	—
	Power contact			—

## Product Number Structure

Refer to the chart below when determining the product specifications from the product number.

Please select from the product numbers listed in this catalog when placing orders.

### ● Receptacle

**BM 29B 0.6 – \* DS/ 2 – 0.35 V (51)**

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

① Series Name : BM	⑤ Connector type DS : Receptacle	⑨ Gold plating specification and packaging (51) : Gold plating thickness 0.05μm Emboss tape packaging (20,000 pcs/reel)
② Series No. : 29B	⑥ Number of Power Contacts : 2	
③ Stacking height	⑦ Contact Pitch : 0.35mm	
④ Number of Signal Contacts : 2	⑧ Terminal shape V : Straight SMT	

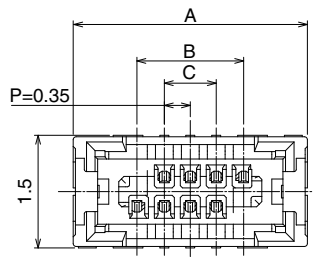
### ● Header

**BM 29B – \* DP/ 2 – 0.35 V (51)**

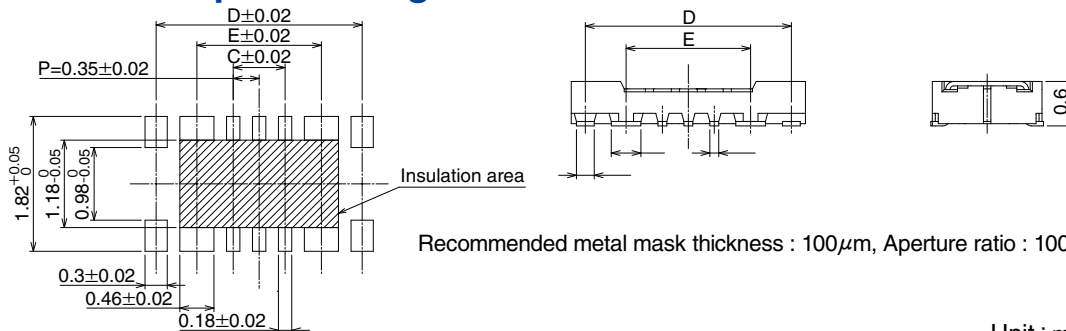
① ② ③ ④ ⑤ ⑥ ⑦ ⑧

① Series Name : BM	⑥ Contact Pitch : 0.35mm
② Series No. : 29B	⑦ Terminal shape V : Straight SMT
③ Number of Signal Contacts : 2	⑧ Gold plating specification and packaging (51) : Gold plating thickness 0.05μm Emboss tape packaging (20,000 pcs/reel)
④ Connector type DP : Header	
⑤ Number of Power Contacts : 2	

## Receptacle



## Recommended PCB pattern diagram



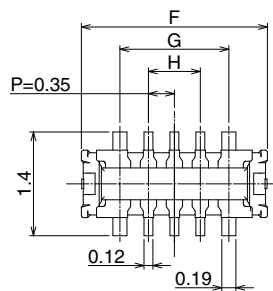
Unit : mm

Part No.	HRS No.	No. of Contacts		A	B	C	D	E
		Signal	Power					
BM29B0.6-2DS/2-0.35V(51)	673-7001-0 51	2	2	2.46	0.7	—	2.08	0.98
BM29B0.6-6DS/2-0.35V(51)	Under development	6	2	3.16	1.44	0.7	2.78	1.68
BM29B0.6-10DS/2-0.35V(51)	Under development	10	2	3.86	2.14	1.4	3.48	2.38

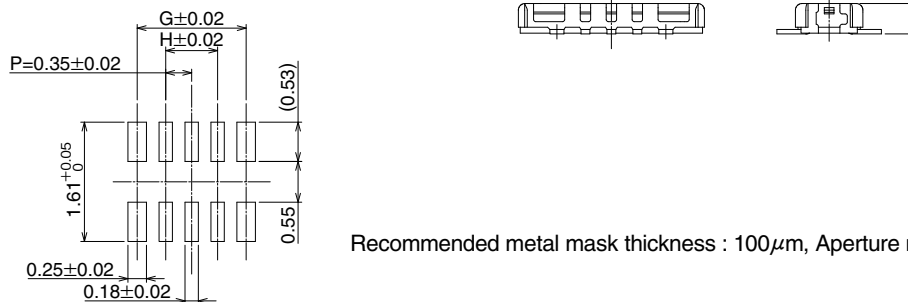
Note 1 : Please place your orders for full reel quantities of embossed tape packages.

Note 2 : This connector has no polarity.

## Header



## Recommended PCB pattern diagram



Unit : mm

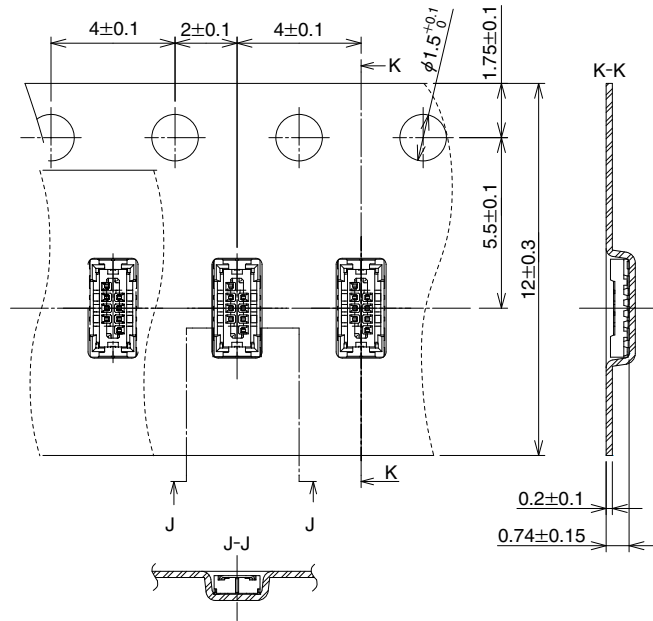
Part No.	HRS No.	No. of Contacts		F	G	H
		Signal	Power			
BM29B-2DP/2-0.35V(51)	673-7002-0 51	2	2	1.81	0.77	—
BM29B-6DP/2-0.35V(51)	Under development	6	2	2.51	1.47	0.7
BM29B-10DP/2-0.35V(51)	Under development	10	2	3.21	2.17	1.4

Note 1 : Please place your orders for full reel quantities of embossed tape packages.

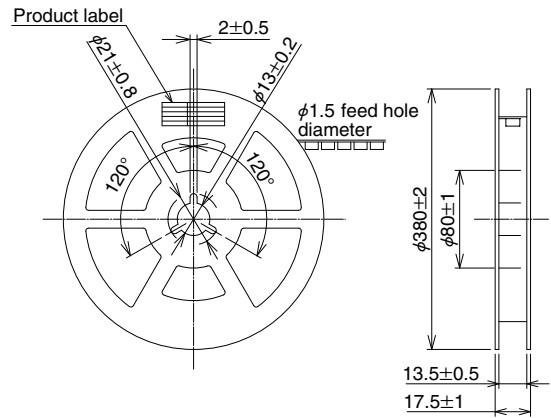
Note 2 : This connector has no polarity.

## ◆ Embossed Tape Dimensions (conforms to JIS C 0806)

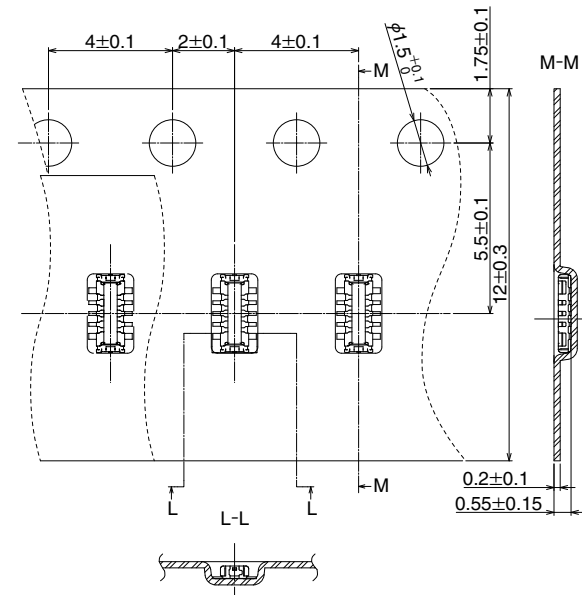
### ● Receptacle



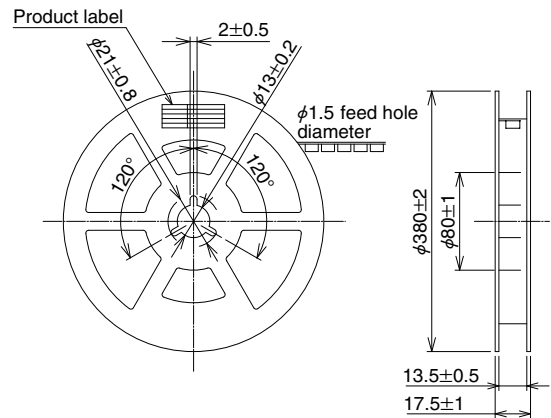
### ● Reel dimensions



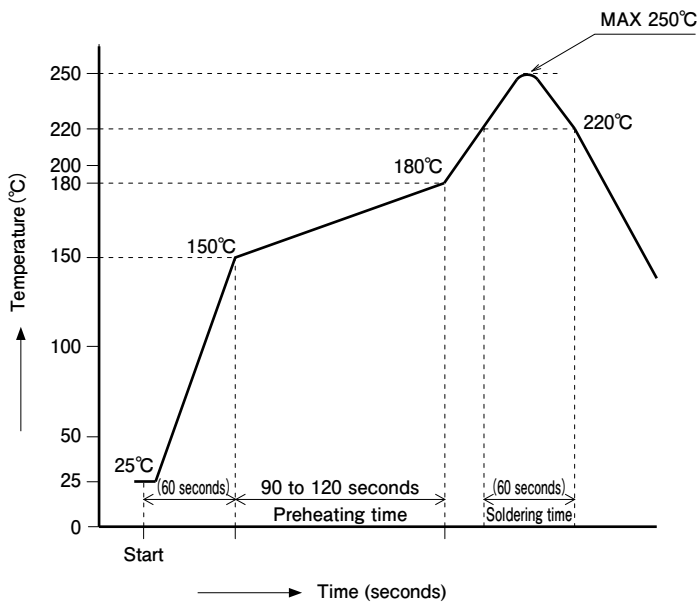
### ● Header



### ● Reel dimensions



## ◆Precautions

<p>1. Recommended temperature profile</p>	 <p>[Conditions]</p> <ol style="list-style-type: none"> <li>1. Peak temperature : 250°C</li> <li>2. Heating unit : No less than 220°C for no more than 60 seconds</li> <li>3. Preheating unit : 150 to 180°C for 90 to 120 seconds</li> <li>4. Number of times : No more than 2 times</li> </ol> <p>Note 1 : The temperature is the surface temperature of the PCB in the vicinity of the connector lead part.</p> <p>Note 2 : When you use nitrogen reflow, please mount the product with the oxygen concentration at a minimum of 1,000 [ppm]. Please contact us if the concentration is below 1,000 [ppm].</p>
<p>2. Recommended hand soldering conditions</p>	<p>Soldering iron temperature : 340 ± 10°C, Soldering time : within 3 seconds</p>
<p>3. Recommended screen thickness/aperture ratio (pattern area ratio)</p>	<p>Thickness : 0.1mm Aperture ratio : 100% on the DS side ; 80% on the DP side</p>
<p>4. Warpage of the PCB</p>	<p>A maximum of 0.02mm at the center part of the connector based on both ends of the connector.</p>
<p>5. Cleaning</p>	<p>Not recommended. If you clean this product, please evaluate the performance before using it. (Cleaning may cause a change in the mating/unmating property and its resistance to environment)</p>
<p>6. Notes</p>	<ul style="list-style-type: none"> <li>■ Care should be taken that mating/unmating operation when the product is not mounted on the PCB could cause damage or deformation, etc. of the contact.</li> <li>■ Avoid supporting the PCB only by connectors, and support it by other means than connectors.</li> <li>■ Care should be taken that excessive prying mating/unmating could cause damage.</li> <li>■ During hand soldering, do not apply flux which will cause flux oozing on connector.</li> <li>■ This product may differ in hue due to production lot variability, but it doesn't have any influence on the performance.</li> <li>■ Please refer to the next page for the precautions for mating/unmating.</li> <li>■ Considering the possibility of disengagement due to the counterforce caused by the drop, impact and routing of FPC, fix the mated state by the use of housings and cushion materials, etc.</li> <li>■ Caution! Do not use the connector in non-recommended conditions (i.e., rated current, rated voltage, PCB design and operating environment, etc.). Such usage could lead to material outgassing, ignition, or short-circuit, etc.</li> </ul> <p>Refer to the specifications and the guidelines for board pattern dimensions, board cautions, and connector treatment.</p> <p>Please contact Hirose if using the connector under conditions other than those described in the specifications and the guidelines is being considered.</p>

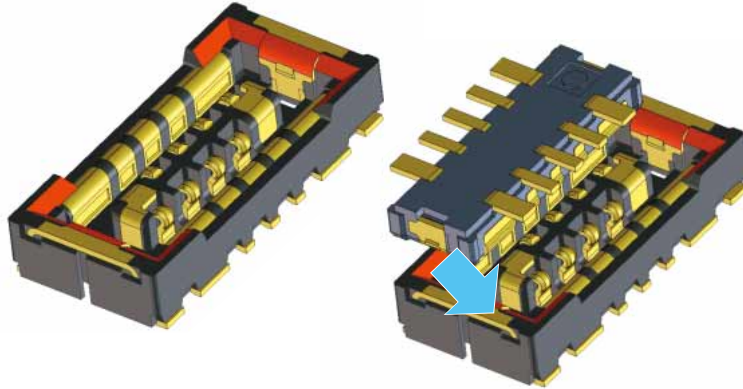
● Notes when mating connector

**Be sure to mate this product manually.**

**Mating procedure**

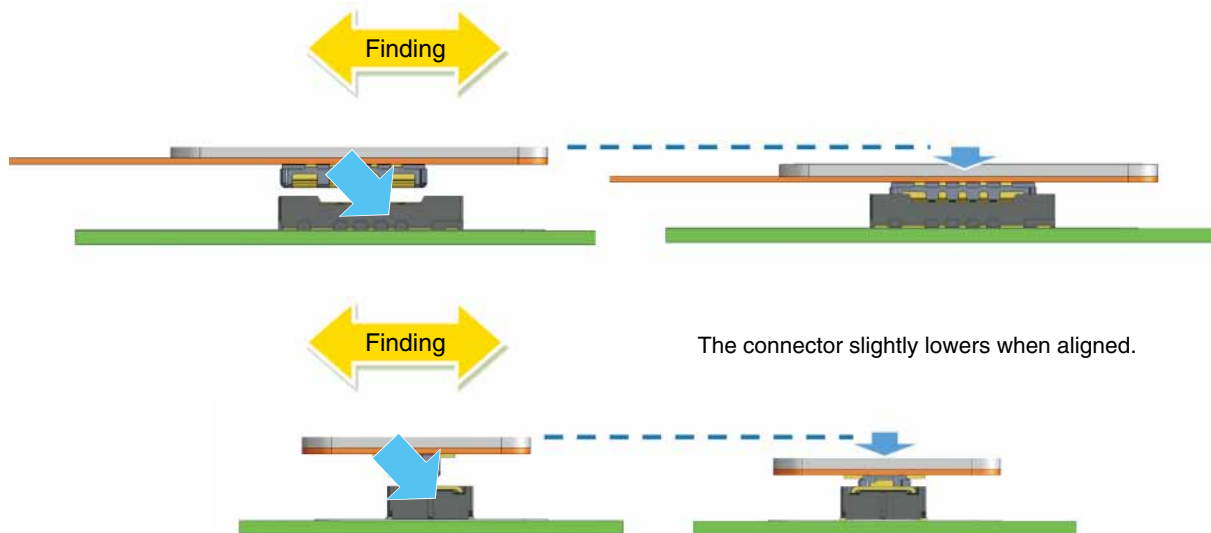
**1) Align the connector at the guide.**

A guide rib (tapered metal) is provided on the outer wall of the connector for mating support. Align the connector to this guide rib.



**2) The connector enters automatically.**

The connector slightly lowers when aligned correctly. Find the guide by moving the connector in the X and Y directions.



**3) Once aligned, mate the connector fully.**

The connector becomes parallel when aligned. You cannot move it laterally and longitudinally.

**4) Confirm the mated connector.**

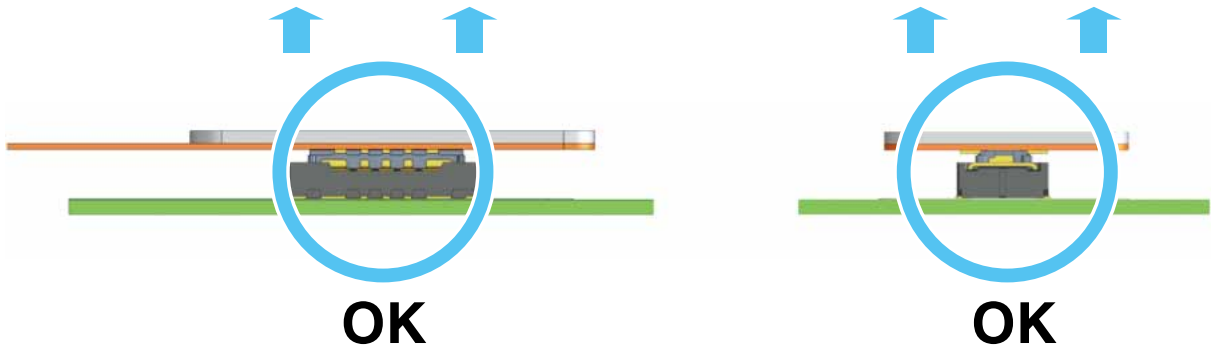
If incorrectly mated, remove, and mate it again.



●Notes when unmating connector

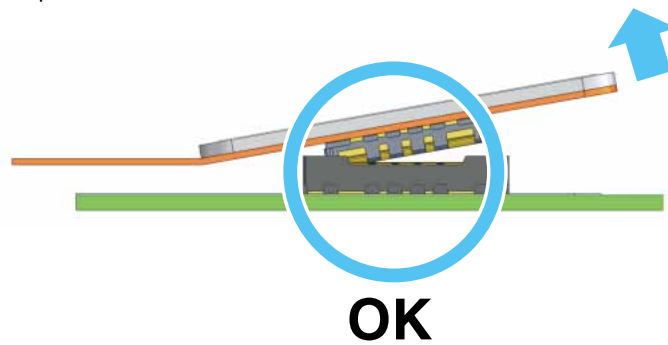
1) Vertical direction

When removing the connector, remove it vertically. Number of contacts, FPC thickness, or other factors may make the vertical removal difficult.



2) Longitudinal removal

Remove the connector in the pitch direction in a slanted manner.



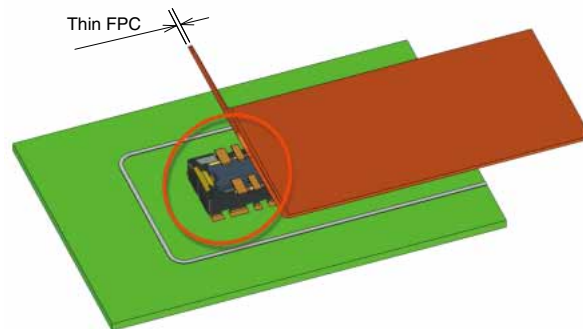
3) Lateral removal

Pull out the tip end of the FPC in the vertical direction. Applying a large force horizontally could deform the contacts.



4) Evaluate the mated state for thin FPCs.

Connector breakage or peeling off at soldering area could occur if the FPC does not have enough rigidity, please check the action in advance on the same type of FPC.



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