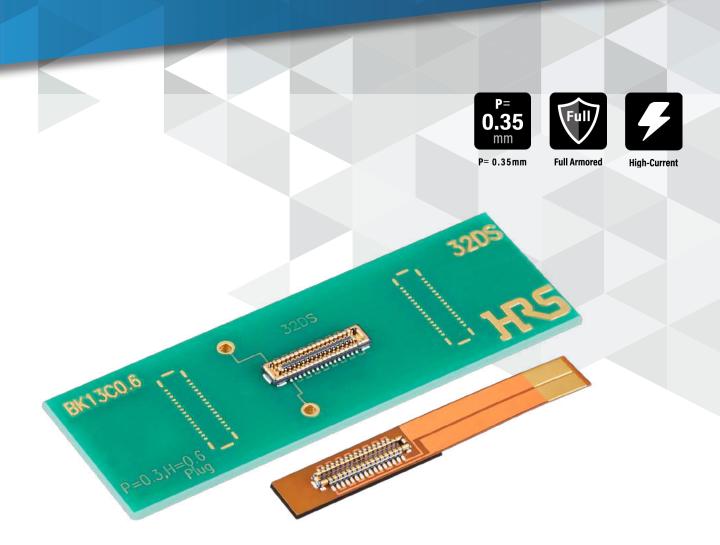


BK13 Series

0.35mm Pitch, 0.6mm Stacking Height, 1.9mm Width, Low-Profile Hybrid FPC-to-Board Connector Supporting 5A

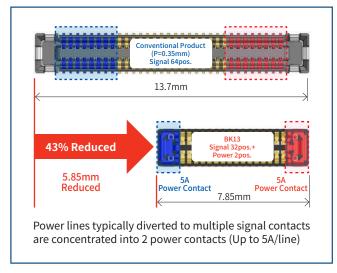




Features

Hybrid Power Supply Capacity and Space-saving Design

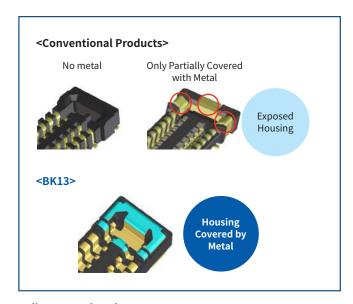
Equipped with two power contacts capable of handling up to 5A, reducing the number of signal contacts to save mounting space.



High Current (5A)

2. Robust Design

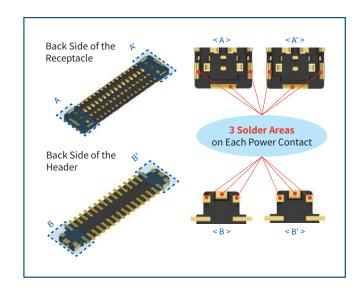
Fully armored guides prevent housing damage due to misalignment when mating.



Fully Armored Design

3. Enhanced PCB Peeling Strength

Both the geader and receptacle have 3 soldering areas at each power contact for greater PCB peeling strength.



4. High Contact Reliability

Both power and signal contacts have a two-point contact design, ensuring high contact reliability.

5. Superior Mating

Wide self-alignment range with metal guides offers enhanced mating operation. (0.3mm in pitch direction, 0.22mm in width direction)

Additionally, a clear tactile click generated by the unique locking contact design secures complete mating.

6. Halogen-Free

All materials and substances used to produce this product Comply with Halogen-free standards.

*As defined by IEC 61249-2-21 Br: 900ppm max., Cl: 900ppm max.,

Br+Cl: 1,500ppm max.



Product Specifications

	Signal Contact : 0.3A (Note 1)	Operating Temperature (Note 2)	-55 to +85°C
Rated Current		Operating Humidity Range (Note 4)	20 to 80%
	Power Contact : 5A	Storage Temperature (Note 3)	-10 to +60°C
Rated Voltage	30V AC/DC	Storage Humidity Range (Note 3)(Note 4)	40 to 70%

Items	Specifications	Conditions
Contact Resistance	Signal Contact : $90m\Omega$ Max. Power Contact : $30m\Omega$ Max.	Measured at 20mV AC, 1kHz, 1mA
Insulation Resistance	50MΩ Min.	Measured at 100V DC
Withstanding Voltage	No flashover or insulation breakdown	100V AC for 1 min.
Mating Durability	Contact Resistance : Signal Contact : $90m\Omega$ Max. Power Contact : $30m\Omega$ Max. No damage, crack or looseness of parts	10 mating cycles
Vibration Resistance	No electrical discontinuity of 1μs or more No damage, crack or looseness of parts	Frequency: 10 to 55Hz, single amplitude 0.75mm, 10 cycles in each of 3 axis directions for 5 minutes/cycle
Shock Resistance	No electrical discontinuity of 1μs or more No damage, crack or looseness of parts	Acceleration: 490m/s², duration of pulse: 11ms at 3 times for 3 directions.
Humidity Resistance	Contact Resistance : Signal Contact : $90m\Omega$ Max. Power Contact : $30m\Omega$ Max. Insulation Resistance : $50M\Omega$ Min. No damage, crack or looseness of parts	96 hours at temperature of 40±2°C and humidity range from 90 to 95%
Temperature Cycle	Contact Resistance : Signal Contact : $90m\Omega$ Max. Power Contact : $30m\Omega$ Max. Insulation Resistance : $50M\Omega$ Min. No damage, crack or looseness of parts	-55°C for 30min. → +85°C for 30 min. for 5 Cycles. (Stabilizing Time In Chamber : Within 2 to 3 min.)
Sulphur Dioxide	Contact Resistance : Signal Contact : $90m\Omega$ Max. Power Contact: $30m\Omega$ Max. No damage, crack or looseness of parts	Exposed in 25 PPM for 96h at 25°C, 75±5%RH. (Test standard : JIS C 60068)

⁽Note 1) The total current capacity for the signal contacts is 12A Max.

(Note 2) Includes temperature rise caused by current flow.

(Note 3) The term "storage" refers to long-term-storage of unused items before they are mounted on the PCB.

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

(Note 4) Range identified without condensation.

Materials / Finish

Part	Component	Material	Finish	UL Standard
	Insulator	LCP	Black	UL94V-0
Header Receptacle	Signal Contact	Copper Alloy	Gold Plated over Nickel Underplating	-
	Power Contact	Copper Alloy	Gold Plated over Nickel Underplating	-

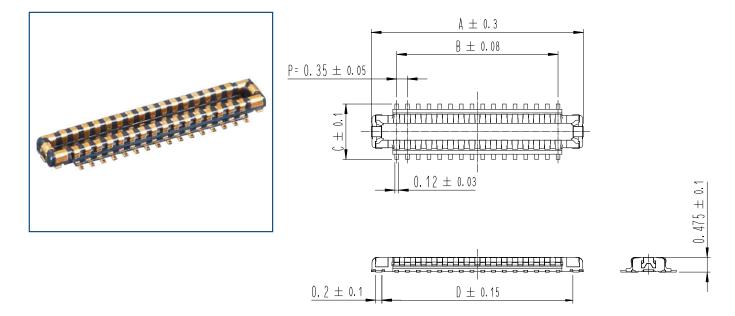
Product Number Structure

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.

• Header/Receptacle

1 Series Name	BK13	6 Number of Power Contacts	2pos.
2 Stacking Height	0.6mm	6 Contact Pitch	0.35mm
3 Number of Signal Contacts	6, 10, 12, 16, 32, 40, 50, 60pos.	7 Terminal Type	V : Straight SMT
4 Connector Type	DP : Double-row Header DS : Double-row Receptacle	8 Packaging	(800): Standard, Embossed tape packaging (20,000pcs per reel) (895): Embossed tape packaging (1,000pcs per reel) (For trial production)

Header



Unit : mm

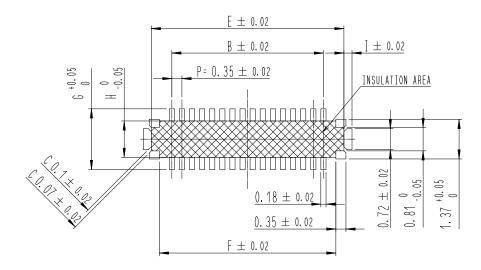
		No. o	f Pos.					Purcha	se Unit
Part No.	HRS No.	Signal Contact	Power Contact	A	В	С	D	##:00	##:95
BK13C06-6DP/2-0.35V(8##) (Note 1)	CL0480-0798-0-##	6	2	2.35	0.70	1.60	1.665		
BK13C06-10DP/2-0.35V(8##)	CL0480-0719-0-##	10	2	3.05	1.40	1.60	2.365		
BK13C06-12DP/2-0.35V(8##)	CL0480-0895-0-##	12	2	3.40	1.75	1.80	2.175		
BK13C06-16DP/2-0.35V(8##)	CL0480-0721-0-##	16	2	4.10	2.45	1.80	3.415	20,000pcs	1,000pcs
BK13C06-32DP/2-0.35V(8##)	CL0480-0663-0-##	32	2	6.90	5.25	1.80	6.215	per reel	per reel
BK13C06-40DP/2-0.35V(8##)	CL0480-0665-0-##	40	2	8.30	6.65	1.80	7.615		
BK13C06-50DP/2-0.35V(8##)	CL0480-0725-0-##	50	2	10.05	8.40	1.80	9.365		
BK13C06-60DP/2-0.35V(8##)	CL0480-0727-0-##	60	2	11.80	10.15	1.80	11.115		

(Note 1) The power contacts of BK13C06-6DP/2-0.35V(8##) have an embossed design. (Note 2) This connector has no polarity.

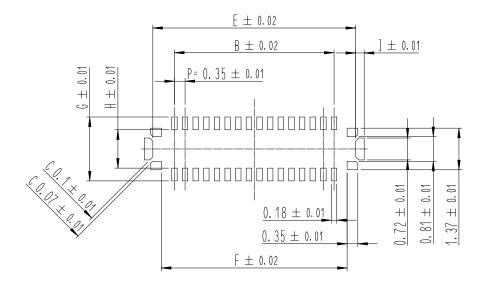
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Header

Recommended PCB Layout



Recommended Metal Mask Dimensions (Mask Thickness: 0.08mm)

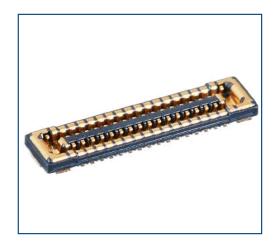


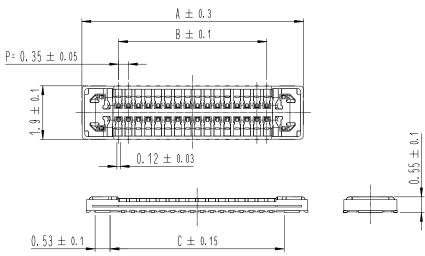
Unit : mm

		No. o	f Pos.						
Part No.	HRS No.	Signal Contact	Power Contact	В	E	F	G	Н	ı
BK13C06-6DP/2-0.35V(8##)	CL0480-0798-0-##	6	2	0.70	2.12	1.56	1.8	1.06	0.23
BK13C06-10DP/2-0.35V(8##)	CL0480-0719-0-##	10	2	1.40	2.82	2.26	1.8	1.06	0.23
BK13C06-12DP/2-0.35V(8##)	CL0480-0895-0-##	12	2	1.75	3.17	2.61	2.1	1.26	0.28
BK13C06-16DP/2-0.35V(8##)	CL0480-0721-0-##	16	2	2.45	3.87	3.31	2.1	1.26	0.28
BK13C06-32DP/2-0.35V(8##)	CL0480-0663-0-##	32	2	5.25	6.67	6.11	2.1	1.26	0.28
BK13C06-40DP/2-0.35V(8##)	CL0480-0665-0-##	40	2	6.65	8.07	7.51	2.1	1.26	0.28
BK13C06-50DP/2-0.35V(8##)	CL0480-0725-0-##	50	2	8.40	9.82	9.26	2.1	1.26	0.28
BK13C06-60DP/2-0.35V(8##)	CL0480-0727-0-##	60	2	10.15	11.57	11.01	2.1	1.26	0.28

(Note) This connector has no polarity.

Receptacle





Unit : mm

		No. o	f Pos.				Purcha	se Unit
Part No.	HRS No.	Signal Contact	Power Contact	A	В	С	##:00	##:95
BK13C06-6DS/2-0.35V(8##) (Note 1, 2)	CL0480-0799-0-##	6	2	3.30	0.70	1.62		
BK13C06-10DS/2-0.35V(8##) (Note 2)	CL0480-0720-0-##	10	2	4.00	1.40	2.32		
BK13C06-12DS/2-0.35V(8##)	CL0480-0896-0-##	12	2	4.35	1.75	2.67		
BK13C06-16DS/2-0.35V(8##)	CL0480-0722-0-##	16	2	5.05	2.45	3.37	20,000pcs	1,000pcs
BK13C06-32DS/2-0.35V(8##)	CL0480-0664-0-##	32	2	7.85	5.25	6.17	per reel	per reel
BK13C06-40DS/2-0.35V(8##)	CL0480-0666-0-##	40	2	9.25	6.65	7.57		
BK13C06-50DS/2-0.35V(8##)	CL0480-0726-0-##	50	2	11.00	8.40	9.32		
BK13C06-60DS/2-0.35V(8##)	CL0480-0728-0-##	60	2	12.75	10.15	11.07		

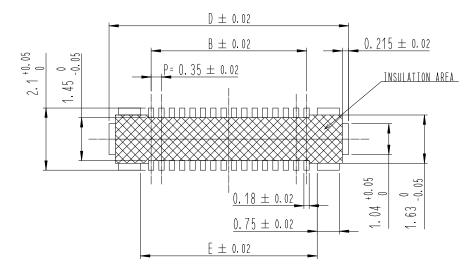
(Note 1) The power contacts of BK13C06-6DS/2-0.35V(8##) have a dimpled design. (Note 2) BK13C06-6DS/2-0.35V(8##) and BK13C06-10DS/2-0.35V(8##) have a metal reinforcement in the center of the product.

(Note 3) This connector has no polarity.

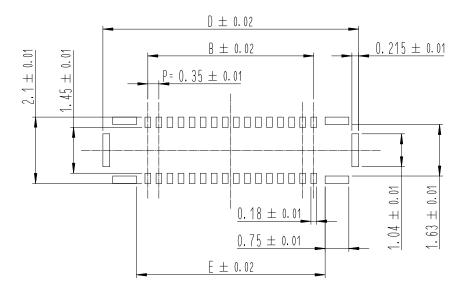
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Receptacle

Recommended PCB Layout



Recommended Metal Mask Dimensions (Mask Thickness: 0.08mm)



Unit: mm

		No. o	f Pos.			
Part No.	HRS No.	Signal Contact	Power Contact	В	D	E
BK13C06-6DS/2-0.35V(8##)	CL0480-0799-0-##	6	2	0.70	3.545	1.42
BK13C06-10DS/2-0.35V(8##)	CL0480-0720-0-##	10	2	1.40	4.245	2.12
BK13C06-12DS/2-0.35V(8##)	CL0480-0896-0-##	12	2	1.75	4.595	2.47
BK13C06-16DS/2-0.35V(8##)	CL0480-0722-0-##	16	2	2.45	5.295	3.17
BK13C06-32DS/2-0.35V(8##)	CL0480-0664-0-##	32	2	5.25	8.095	5.97
BK13C06-40DS/2-0.35V(8##)	CL0480-0666-0-##	40	2	6.65	9.495	7.37
BK13C06-50DS/2-0.35V(8##)	CL0480-0726-0-##	50	2	8.40	11.245	9.12
BK13C06-60DS/2-0.35V(8##)	CL0480-0728-0-##	60	2	10.15	12.995	10.87

(Note) This connector has no polarity.

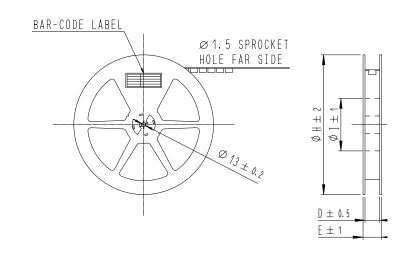
Packaging Specifications Diagram

Header

Embossed Tape Dimensions

1.75 ± 0.1 G-G (5:1) 0.25 ± 0.1 F-F (5:1) 0.65 ± 0.1 DIRECTION OF UNREELING (1.21)

Reel Dimensions



Unit: mm

		No. o	f Pos.							
Part No.	HRS No.	Signal Contact	Power Contact	А	В	С	D	E	Н	I
BK13C06-6DP/2-0.35V(800)	CL0480-0798-0-00	6	2	12.0	5.5	2.46	13.5	17.5	380	80
BK13C06-10DP/2-0.35V(800)	CL0480-0719-0-00	10	2	16.0	7.5	3.16	17.5	21.5	380	80
BK13C06-12DP/2-0.35V(800)	CL0480-0895-0-00	12	2	16.0	7.5	3.51	17.5	21.5	380	80
BK13C06-16DP/2-0.35V(800)	CL0480-0721-0-00	16	2	16.0	7.5	4.21	17.5	21.5	380	80
BK13C06-32DP/2-0.35V(800)	CL0480-0663-0-00	32	2	24.0	11.5	7.01	25.5	29.5	380	80
BK13C06-40DP/2-0.35V(800)	CL0480-0665-0-00	40	2	24.0	11.5	8.41	25.5	29.5	380	80
BK13C06-50DP/2-0.35V(800)	CL0480-0725-0-00	50	2	24.0	11.5	10.16	25.5	29.5	380	80
BK13C06-60DP/2-0.35V(800)	CL0480-0727-0-00	60	2	24.0	11.5	11.91	25.5	29.5	380	80

		No. o	f Pos.							
Part No.	HRS No.	Signal Contact	Power Contact	А	В	С	D	Е	Н	
BK13C06-6DP/2-0.35V(895)	CL0480-0798-0-95	6	2	12.0	5.5	2.46	13.5	17.5	180	60
BK13C06-10DP/2-0.35V(895)	CL0480-0719-0-95	10	2	16.0	7.5	3.16	17.5	21.5	180	60
BK13C06-12DP/2-0.35V(895)	CL0480-0895-0-95	12	2	16.0	7.5	3.51	17.5	21.5	180	60
BK13C06-16DP/2-0.35V(895)	CL0480-0721-0-95	16	2	16.0	7.5	4.21	17.5	21.5	180	60
BK13C06-32DP/2-0.35V(895)	CL0480-0663-0-95	32	2	24.0	11.5	7.01	25.5	29.5	180	60
BK13C06-40DP/2-0.35V(895)	CL0480-0665-0-95	40	2	24.0	11.5	8.41	25.5	29.5	180	60
BK13C06-50DP/2-0.35V(895)	CL0480-0725-0-95	50	2	24.0	11.5	10.16	25.5	29.5	180	60
BK13C06-60DP/2-0.35V(895)	CL0480-0727-0-95	60	2	24.0	11.5	11.91	25.5	29.5	180	60

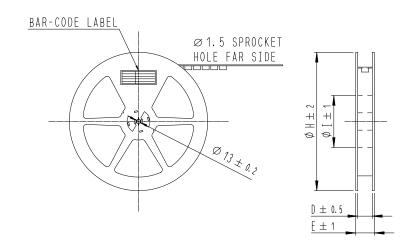
Packaging Specifications Diagram

Receptacle

Embossed Tape Dimensions

G-G (5:1) 0.75 ± 0.15 F-F (5:1) DIR DIRECTION OF UNREELING

Reel Dimensions

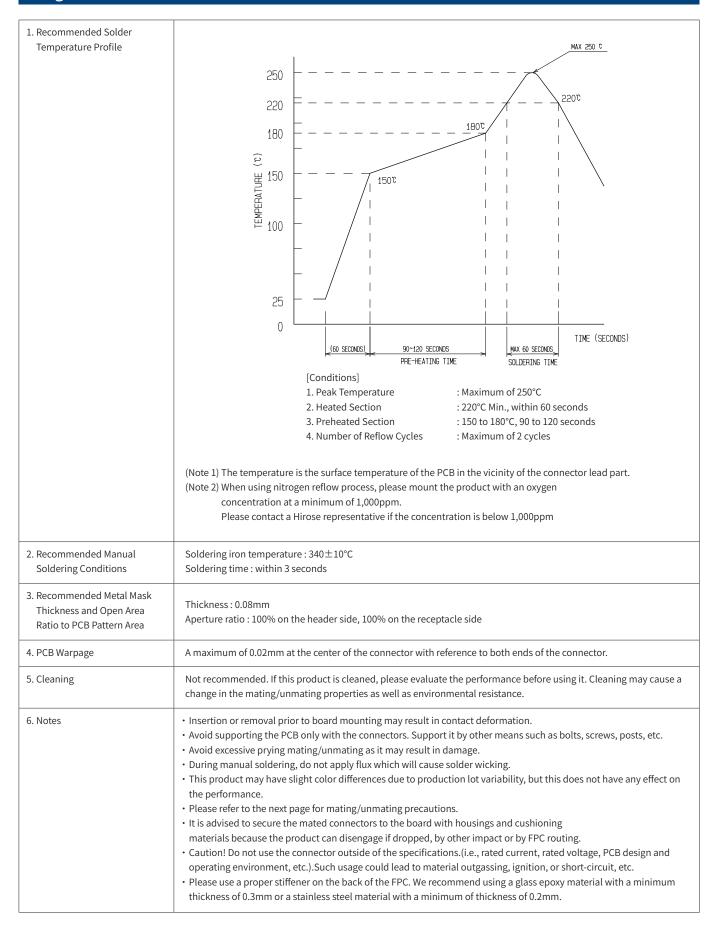


Unit: mm

		No. o	f Pos.							
Part No.	HRS No.	Signal Contact	Power Contact	А	В	С	D	E	Н	I
BK13C06-6DS/2-0.35V(800)	CL0480-0799-0-00	6	2	12.0	5.5	3.4	13.5	17.5	380	80
BK13C06-10DS/2-0.35V(800)	CL0480-0720-0-00	10	2	16.0	7.5	4.10	17.5	21.5	380	80
BK13C06-12DS/2-0.35V(800)	CL0480-0896-0-00	12	2	16.0	7.5	4.45	17.5	21.5	380	80
BK13C06-16DS/2-0.35V(800)	CL0480-0722-0-00	16	2	16.0	7.5	5.15	17.5	21.5	380	80
BK13C06-32DS/2-0.35V(800)	CL0480-0664-0-00	32	2	24.0	11.5	7.95	25.5	29.5	380	80
BK13C06-40DS/2-0.35V(800)	CL0480-0666-0-00	40	2	24.0	11.5	9.35	25.5	29.5	380	80
BK13C06-50DS/2-0.35V(800)	CL0480-0726-0-00	50	2	24.0	11.5	11.10	25.5	29.5	380	80
BK13C06-60DS/2-0.35V(800)	CL0480-0728-0-00	60	2	24.0	11.5	12.85	25.5	29.5	380	80

		No. o	f Pos.							
Part No.	HRS No.	Signal Contact	Power Contact	А	В	С	D	E	H	I
BK13C06-6DS/2-0.35V(895)	CL0480-0799-0-95	6	2	12.0	5.5	3.4	13.5	17.5	180	60
BK13C06-10DS/2-0.35V(895)	CL0480-0720-0-95	10	2	16.0	7.5	4.10	17.5	21.5	180	60
BK13C06-12DS/2-0.35V(895)	CL0480-0896-0-95	12	2	16.0	7.5	4.45	17.5	21.5	180	60
BK13C06-16DS/2-0.35V(895)	CL0480-0722-0-95	16	2	16.0	7.5	5.15	17.5	21.5	180	60
BK13C06-32DS/2-0.35V(895)	CL0480-0664-0-95	32	2	24.0	11.5	7.95	25.5	29.5	180	60
BK13C06-40DS/2-0.35V(895)	CL0480-0666-0-95	40	2	24.0	11.5	9.35	25.5	29.5	180	60
BK13C06-50DS/2-0.35V(895)	CL0480-0726-0-95	50	2	24.0	11.5	11.10	25.5	29.5	180	60
BK13C06-60DS/2-0.35V(895)	CL0480-0728-0-95	60	2	24.0	11.5	12.85	25.5	29.5	180	60

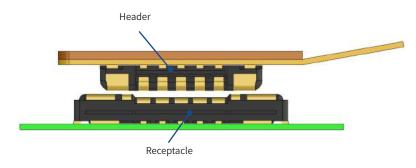
Usage Precautions



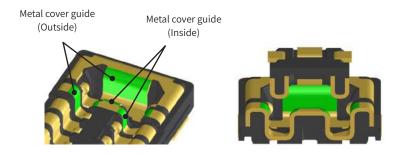


Connector Handling Precautions

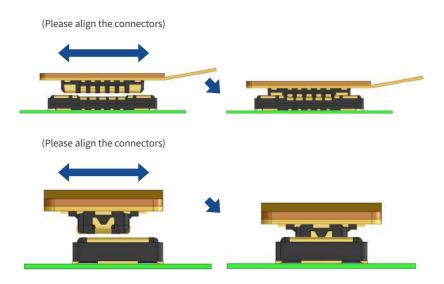
【Connector Mating Precautions】



1. Locate the guides and align the connectors to the appropriate mating position. The connector has guide ribs on the receptacle for proper mating alignment. Align the connectors with the guide ribs.



- 2. When the connector comes to the appropriate position, the connector will lower into place as indicated by the change in mated height.
- 3. When the connectors has lowered into place, the connector pair will be parallel to each other and cannot be moved back and forth or left and right. Please complete mating from this state by applying force.

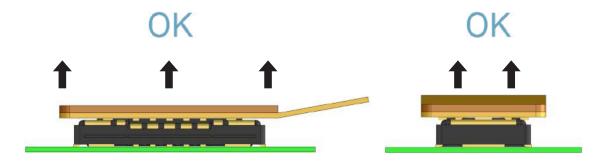


4. Please make sure connectors are mated completely. If one side is floating or the connectors are mated at an angle, please unmate and then redo the mating procedure following the steps described.

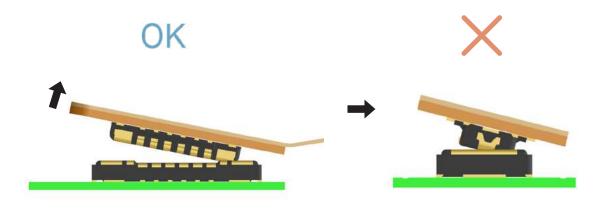


【Connector Un-Mating Precautions】

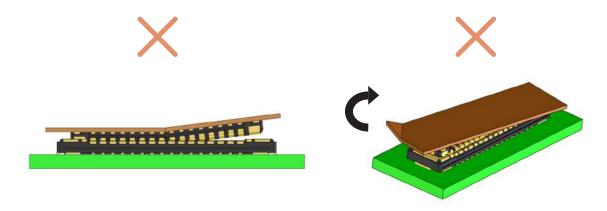
1. It is recommended to remove the connector by pulling perpendicular to the connector mounted surface. However, unmating FPC-to-board connectors can become more difficult with higher pin count connectors and thinner FPCs.



2. If is difficult to remove the connector parallel to the mounting surface, remove it diagonally towards the pitch direction. Do not remove the connector towards the width direction as it may put a large amount of stress on the contacts.



3. If the FPC is not rigid enough, there is a possibility of solder peeling or connector damage. Please check the repetitive operation of the FPC planned to be used in advance, such as during the early stage build. Please do not remove the FPC by holding one corner and pulling at a diagonal as this will put a great amount of stress on the contacts.





While Taking into Consideration

Specifications mentioned in this catalog are reference values.

When considering to order or use this product, please confirm the Drawing and Product Specifications sheets.

Use an appropriate cable when using the connector in combination with cables.

If considering usage of a non-specified cable, please contact your sales representative.

If assembly process is done by jigs & tools which are not identified by Hirose, assurance will not be given.

If considering usage for below mentioned applications, please contact your sales representative.

In cases where the application will demand a high level of reliability, such as automotive, medical instruments, public infrastructure, aerospace/ defense etc. Hirose must review before assurance of reliability can be given.

HIROSE

