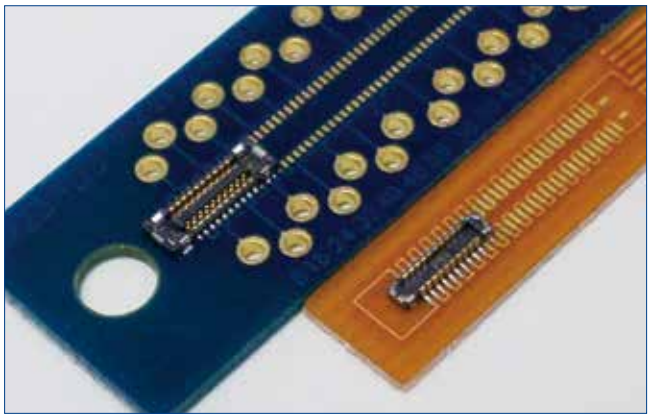
0.35mm Pitch, 0.6 and 0.8mm Height, Board to Board or Board to FPC Connectors

BM23FR Series



■Features

1. Space-saving design

Compact design ideal for mobile devices (See Fig.1)
・Pitch : 0.35mm, Width : 1.98mm, Stacking height : 0.6/0.8mm

2. Robust [Breaking Strength : 90N]

Metal guides prevent housing damage due to incorrect mating. (See Fig.2)

3. Highly reliable contact design

2-point contact design for signal contact ensures high reliability. (See Fig.3)

4. Good mating operation

Wide self alignment range with metal guides offers enhanced mating operation.
(0.4mm in pitch direction, 0.35mm in width direction)
Furthermore, a clear tactile click generated by the unique locking contact design insures complete mating.

5. Supports USB 3.1 Gen.2 (10Gbps) transmission

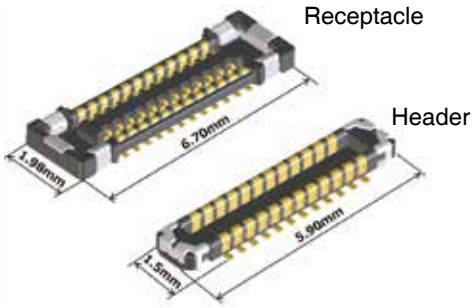
Signal contacts support USB3.1 Gen.2 transmission speed.

■Environmental

・Halogen-free*
As defined by IEC 61249-2-21
Br : 900ppm max., Cl : 900ppm max.
Br+Cl : 1,500ppm max.

Space-saving

Dimension Example : 24 Pos.

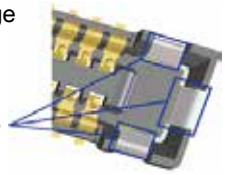


Narrow width design allows for use in small spaces.

Fig.1

Robust design

Metal guides are designed to reduce connector damage even if mated incorrectly.



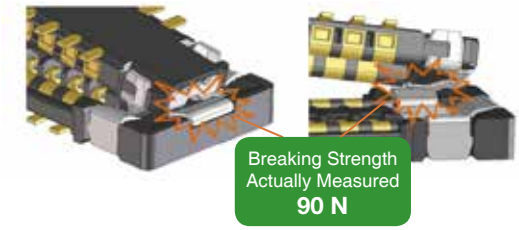
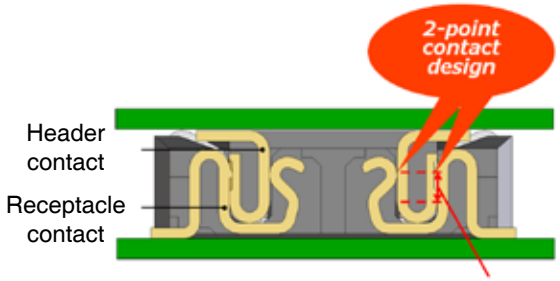


Fig.2

Cross-sectional view of mated contact



Effective mating length
• BM23FR0.6 : 0.15mm
• BM23FR0.8 : 0.20mm

Fig.3

■Product Specifications

Ratings	Rated current	0.3A	Operating temperature range	-55°C to 85°C (Note1)	Storage temperature range	-10°C to 60°C (Note2)
	Rated voltage	30V AC/DC	Operating humidity range	20% to 80%	Storage humidity range	40% to 70% (Note2)

Items	Specifications	Conditions
1. Contact resistance	100mΩ max.	Measured at 20mV AC, 1kHz, and 1mA
2. Insulation resistance	50MΩ min.	Measured at 100V DC
3. Withstanding voltage	No flashover or insulation breakdown	100V AC for 1 minute
4. Durability	Contact resistance: 100mΩ max.	10 mating cycles
5. Vibration	No electrical discontinuity for more than 1μs.	Frequency: 10 to 55Hz, single amplitude : 0.75mm in 3 axis directions for 5 minutes, 10 cycles
6. Shock resistance	No electrical discontinuity of 1μs or more.	Acceleration : 490m/s^2, duration of pulse : 11ms at 3 times for 3 directions
7. Humidity	Contact resistance : 100mΩ max. Insulation resistance : 25mΩ min.	96 hours at temperature of 40±2°C and a humidity range from 90 to 95%
8. Temperature cycle	Contact resistance: 100mΩ max. Insulation resistance: 50MΩ min.	-55°C for 30 minutes → 85°C for 30 minutes, 5 cycles
9. Soldering heat resistance	No dissolution or melting of the resin that will affect the performance.	Reflow: with recommended temperature profile; Hand soldering at soldering iron temperature of 350°C for 3 seconds max.

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.

■Materials / Finish

Product	Part	Material	Finish	UL Regulation
Receptacle Header	Insulator	LCP	Black	UL94V-0
	Contact	Copper alloy	Gold plating	——
	Metal Fitting	Copper alloy	Gold plating	——

■Product Number Structure

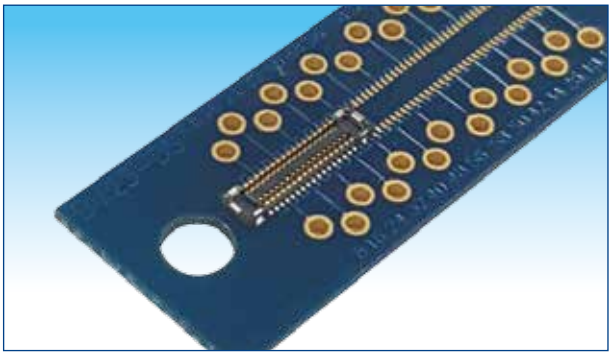
Refer to the chart below when determining the product specifications from the product number.
Please select from the product numbers listed in this catalog when placing orders

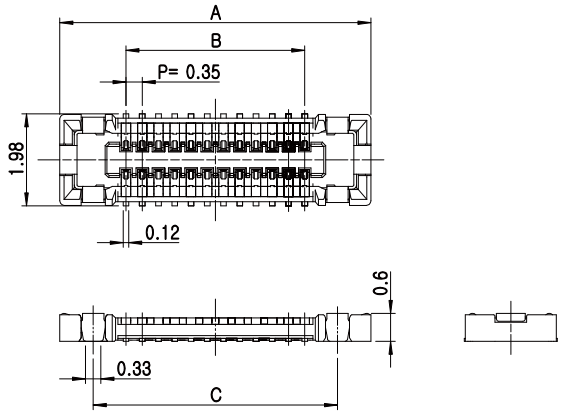
●Receptacle / Header

BM 23 FR ** - * DS - 0.35 V (***)
❶ ❷ ❸ ❹ ❺ ❻ ❼ ❽ ❾

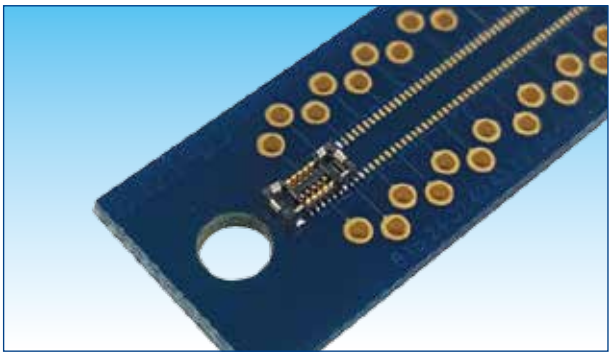
❶ Series Name: BM	❻ Connector Type DS: Receptacle DP: Header
❷ Series No. : 23	❼ Contact Pitch : 0.35mm
❸ Shape Symbols FR: With locking metal fitting	❽ Terminal type V : Straight SMT
❹ Stacking Height : 0.6mm, 0.8mm	❾ Gold plated specification and packaging status (51) : Gold plate thickness 0.05μm Embossed tape packaging (10,000pcs/reel) (895) : Gold plate thickness 0.05μm Embossed tape packaging (1,000pcs/reel)
❺ Number of Contacts	

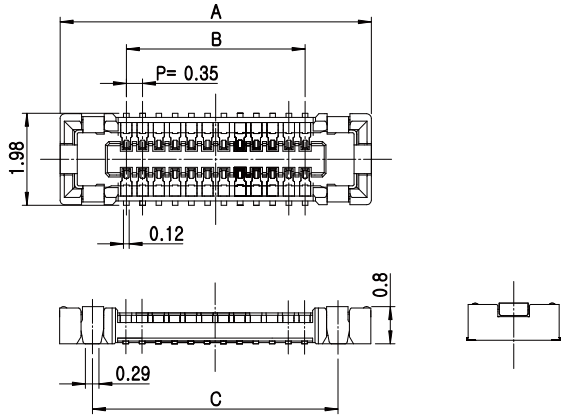
■H=0.6mm Receptacle



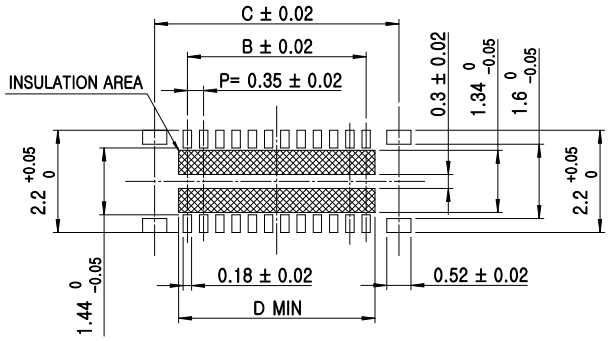


■H=0.8mm Receptacle

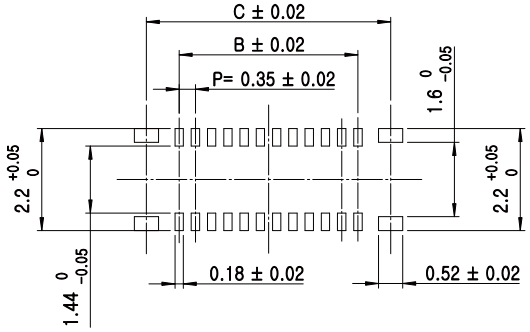




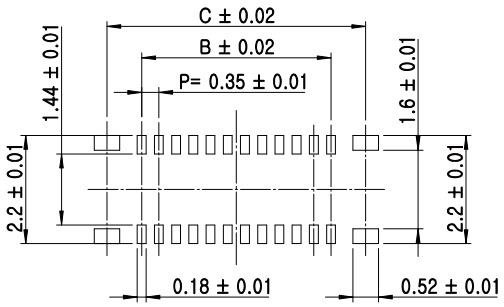
◆Recommended PCB layout [H=0.6 mm]



◆Recommended PCB layout [H=0.8 mm]



◆ Recommended metal mask dimensions (mask thickness : 100µm) [0.6mm and 0.8mm common]



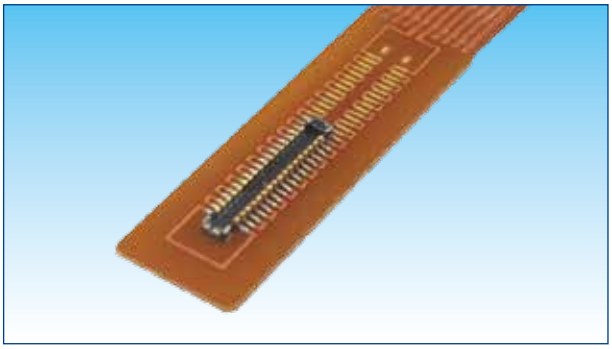
Unit : mm

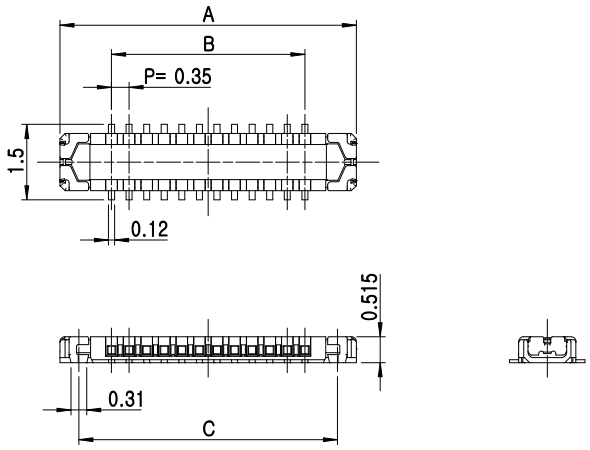
Part No.	HRS No.	No. of contacts	A	B	C	D
BM23FR0.6-6DS-0.35V(***)	480-0287-0 **	6	3.55	0.70	2.11	1.08
BM23FR0.6-8DS-0.35V(***)	480-0360-0 **	8	3.90	1.05	2.46	1.43
BM23FR0.6-10DS-0.35V(***)	480-0258-0 **	10	4.25	1.40	2.81	1.78
BM23FR0.6-12DS-0.35V(***)	480-0371-0 **	12	4.60	1.75	3.16	2.13
BM23FR0.6-16DS-0.35V(***)	480-0295-0 **	16	5.30	2.45	3.86	2.83
BM23FR0.6-20DS-0.35V(***)	480-0272-0 **	20	6.00	3.15	4.56	3.53
BM23FR0.6-24DS-0.35V(***)	480-0260-0 **	24	6.70	3.85	5.26	4.23
BM23FR0.6-30DS-0.35V(***)	480-0327-0 **	30	7.75	4.90	6.31	5.28
BM23FR0.6-34DS-0.35V(***)	480-0274-0 **	34	8.45	5.60	7.01	5.98
BM23FR0.6-40DS-0.35V(***)	480-0390-0 **	40	9.50	6.65	8.06	7.03
BM23FR0.6-50DS-0.35V(***)	480-0382-0 **	50	11.25	8.40	9.81	8.78

Part No.	HRS No.	No. of contacts	A	B	C
BM23FR0.8-10DS-0.35V(***)	480-0298-0 **	10	4.25	1.40	2.81
BM23FR0.8-18DS-0.35V(***)	480-0469-0 **	18	5.65	2.80	4.21
BM23FR0.8-60DS-0.35V(***)	480-0300-0 **	60	13.00	10.15	11.56

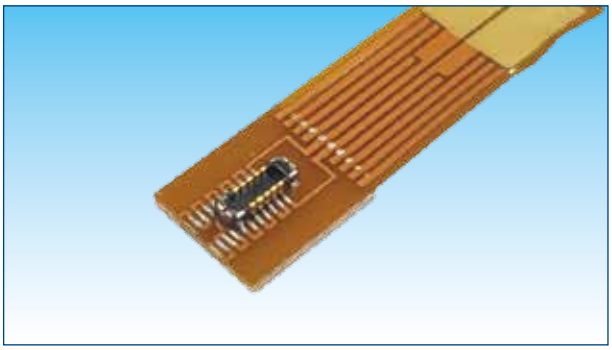
Note 1 : Please place orders in full reel quantities.
Note 2 : This connector has no polarity.
Note 3 : The specification number(895) in the Part No. changes to(95) in the HRS No.

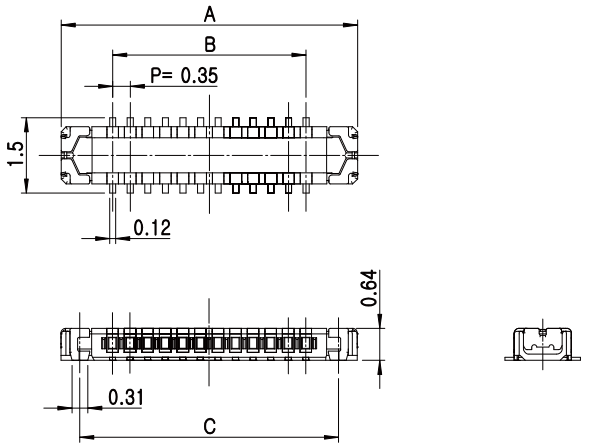
■H=0.6mm Header



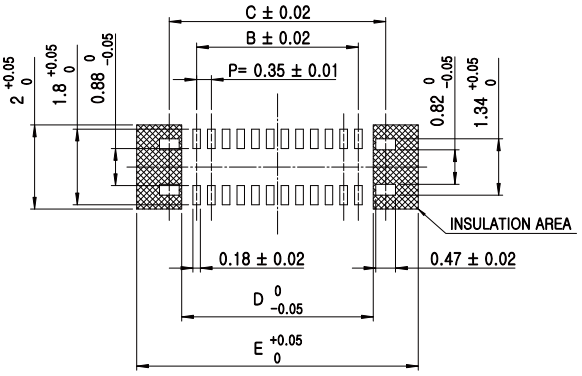


■H=0.8mm Header

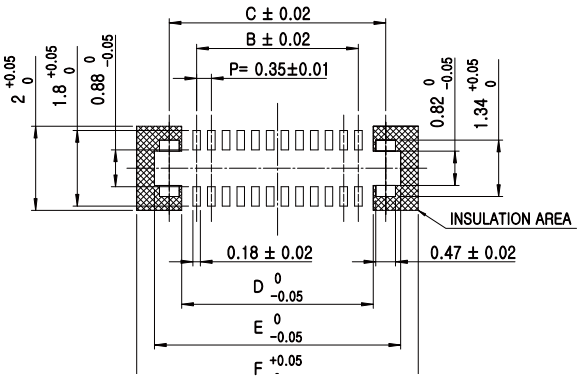




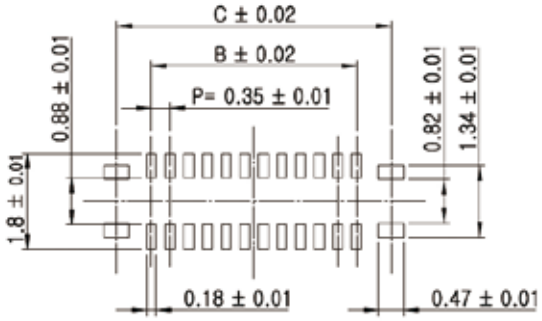
◆Recommended PCB layout [H=0.6mm]



◆Recommended PCB layout [H=0.8mm]



Recommended metal mask dimensions (mask thickness : 100µm) [0.6mm and 0.8mm common]



Unit : mm

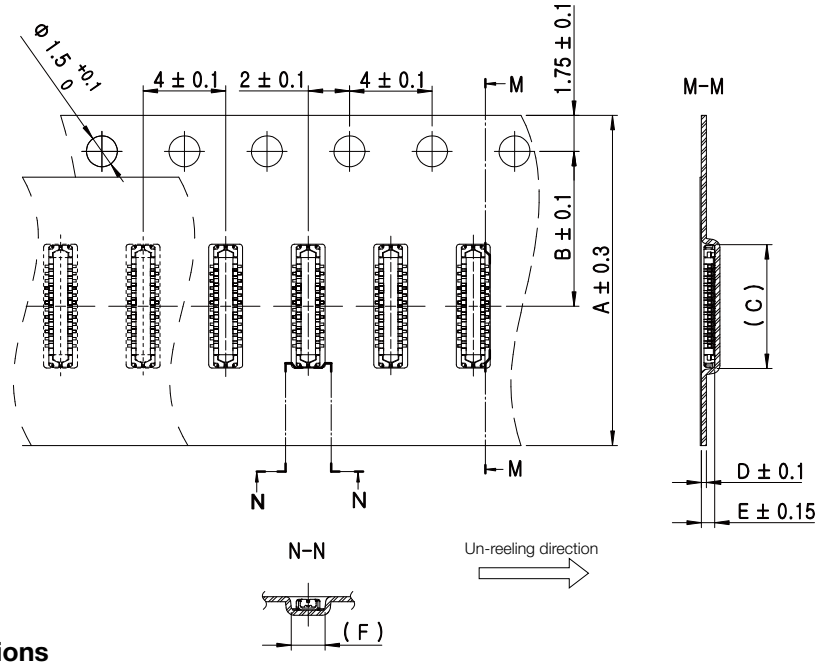
Part No.	HRS No.	No. of contacts	A	B	C	D	E
BM23FR0.6-6DP-0.35V(***)	480-0286-0 **	6	2.75	0.70	2.00	1.41	3.55
BM23FR0.6-8DP-0.35V(***)	480-0361-0 **	8	3.10	1.05	2.35	1.76	3.90
BM23FR0.6-10DP-0.35V(***)	480-0257-0 **	10	3.45	1.40	2.70	2.11	4.25
BM23FR0.6-12DP-0.35V(***)	480-0364-0 **	12	3.80	1.75	3.05	2.46	4.60
BM23FR0.6-16DP-0.35V(***)	480-0290-0 **	16	4.50	2.45	3.75	3.16	5.30
BM23FR0.6-20DP-0.35V(***)	480-0273-0 **	20	5.20	3.15	4.45	3.86	6.00
BM23FR0.6-24DP-0.35V(***)	480-0259-0 **	24	5.90	3.85	5.15	4.56	6.70
BM23FR0.6-30DP-0.35V(***)	480-0328-0 **	30	6.95	4.90	6.20	5.61	7.75
BM23FR0.6-34DP-0.35V(***)	480-0275-0 **	34	7.65	5.60	6.90	6.31	8.45
BM23FR0.6-40DP-0.35V(***)	480-0391-0 **	40	8.70	6.65	7.95	7.36	9.50
BM23FR0.6-50DP-0.35V(***)	480-0383-0 **	50	10.45	8.40	9.70	9.11	11.25

Part No.	HRS No.	No. of contacts	A	B	C	D	E	F
BM23FR0.8-10DP-0.35V(***)	480-0297-0 **	10	3.45	1.40	2.70	2.11	3.41	4.25
BM23FR0.8-18DP-0.35V(***)	480-0468-0 **	18	4.85	2.80	4.10	3.51	4.81	5.65
BM23FR0.8-60DP-0.35V(***)	480-0299-0 **	60	12.20	10.15	11.45	10.86	12.16	13.00

Note 1 : Please place orders in full reel quantities.
Note 2 : This connector has no polarity.
Note 3 : The specification number(895) in the Part No. changes to(95) in the HRS No.

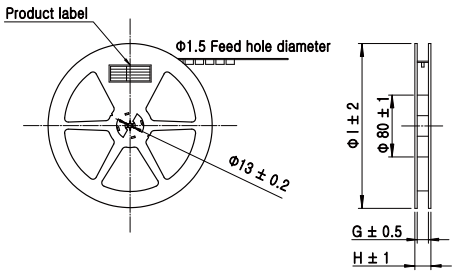
Embossed Tape Dimensions (IEC 602286-3, with JIC C 0806)

● Receptacle

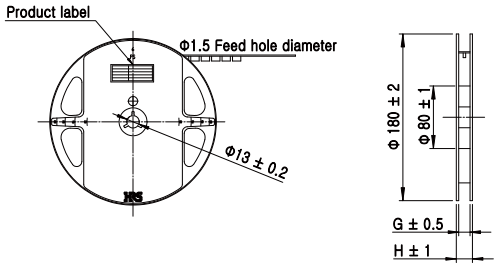


● Reel Dimensions

▸10,000pcs/reel



▸1,000pcs/reel



Unit : mm

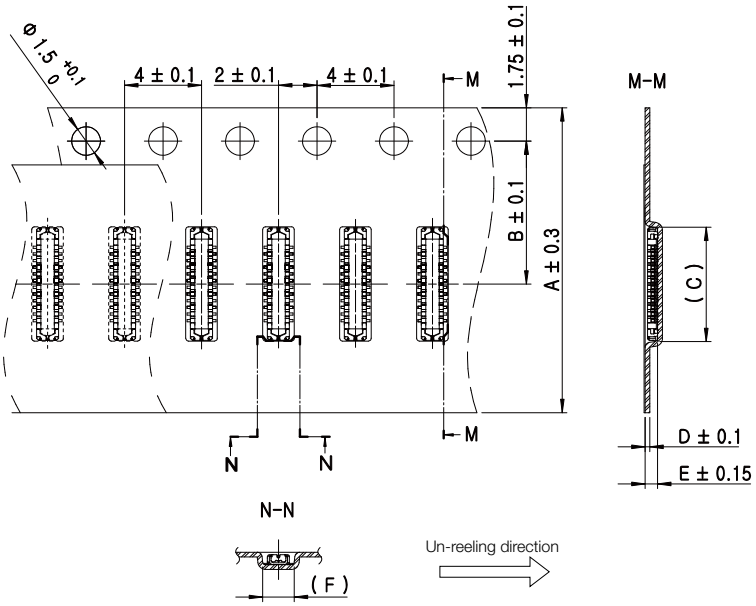
Part No.	HRS No.	No. of contacts	A	B	C	D	E	F	G	H	I
BM23FR0.6-6DS-0.35V(***)	480-0287-0 **	6	12	5.5	3.66	0.25	0.8	2.07	13.5	17.5	330
BM23FR0.6-8DS-0.35V(***)	480-0360-0 **	8	12	5.5	4.01	0.25	0.8	2.07	13.5	17.5	330
BM23FR0.6-10DS-0.35V(***)	480-0371-0 **	10	16	7.5	4.36	0.25	0.8	2.07	17.5	21.5	380
BM23FR0.6-12DS-0.35V(***)	480-0295-0 **	12	16	7.5	4.71	0.25	0.8	2.07	17.5	21.5	330
BM23FR0.6-16DS-0.35V(***)	480-0272-0 **	16	16	7.5	5.41	0.25	0.8	2.07	17.5	21.5	330
BM23FR0.6-20DS-0.35V(***)	480-0260-0 **	20	16	7.5	6.11	0.25	0.8	2.07	17.5	21.5	380
BM23FR0.6-24DS-0.35V(***)	480-0327-0 **	24	16	7.5	6.81	0.25	0.8	2.07	17.5	21.5	380
BM23FR0.6-30DS-0.35V(***)	480-0274-0 **	30	24	11.5	7.86	0.25	0.8	2.07	25.5	29.5	330
BM23FR0.6-34DS-0.35V(***)	480-0390-0 **	34	24	11.5	8.56	0.25	0.8	2.07	25.5	29.5	380
BM23FR0.6-40DS-0.35V(***)	480-0382-0 **	40	24	11.5	9.61	0.25	0.8	2.07	25.5	29.5	330
BM23FR0.6-50DS-0.35V(***)	480-0371-0 **	50	24	11.5	11.36	0.25	0.8	2.07	25.5	29.5	330

Part No.	HRS No.	No. of contacts	A	B	C	D	E	F	G	H	I
BM23FR0.8-10DS-0.35V(***)	480-0298-0 **	10	16	7.5	4.36	0.3	1.0	2.07	17.5	21.5	330
BM23FR0.8-18DS-0.35V(***)	480-0469-0 **	18	16	7.5	5.76	0.3	1.0	2.07	17.5	21.5	330
BM23FR0.8-60DS-0.35V(***)	480-0300-0 **	60	24	11.5	13.11	0.3	1.0	2.07	25.5	29.5	330

Note 1 : The specification number(895) in the Part No. changes to(95) in the HRS No.

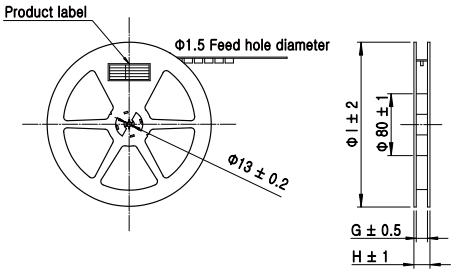
Embossed Tape Dimensions (IEC 602286-3, with JIC C 0806)

● Header

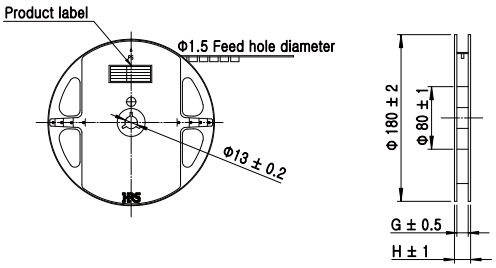


● Reel Dimensions

▸10,000pcs/reel



▸1,000pcs/reel



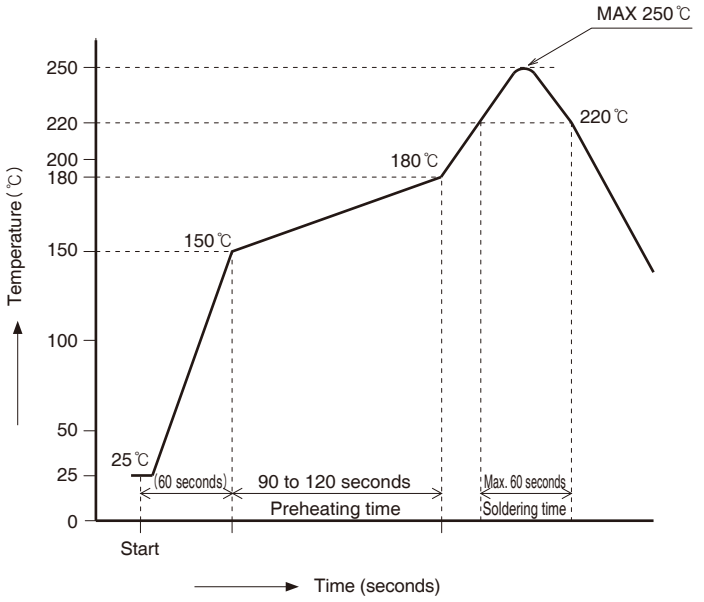
Unit : mm

Part No.	HRS No.	No. of contacts	A	B	C	D	E	F	G	H	I
BM23FR0.6-6DP-0.35V(***)	480-0286-0 **	6	12	5.5	2.85	0.25	0.65	1.58	13.5	17.5	330
BM23FR0.6-8DP-0.35V(***)	480-0361-0 **	8	12	5.5	3.20	0.25	0.65	1.58	13.5	17.5	330
BM23FR0.6-10DP-0.35V(***)	480-0257-0 **	10	12	5.5	3.55	0.25	0.65	1.64	13.5	17.5	380
BM23FR0.6-12DP-0.35V(***)	480-0364-0 **	12	12	5.5	3.90	0.25	0.65	1.64	13.5	17.5	330
BM23FR0.6-16DP-0.35V(***)	480-0290-0 **	16	16	7.5	4.60	0.25	0.65	1.64	17.5	21.5	330
BM23FR0.6-20DP-0.35V(***)	480-0273-0 **	20	16	7.5	5.30	0.25	0.65	1.64	17.5	21.5	380
BM23FR0.6-24DP-0.35V(***)	480-0259-0 **	24	16	7.5	6.00	0.25	0.65	1.64	17.5	21.5	380
BM23FR0.6-30DP-0.35V(***)	480-0328-0 **	30	16	7.5	7.05	0.25	0.65	1.64	17.5	21.5	330
BM23FR0.6-34DP-0.35V(***)	480-0275-0 **	34	16	7.5	7.75	0.25	0.65	1.64	17.5	21.5	380
BM23FR0.6-40DP-0.35V(***)	480-0391-0 **	40	24	11.5	8.80	0.25	0.65	1.64	25.5	29.5	330
BM23FR0.6-50DP-0.35V(***)	480-0383-0 **	50	24	11.5	10.55	0.25	0.65	1.64	25.5	29.5	330

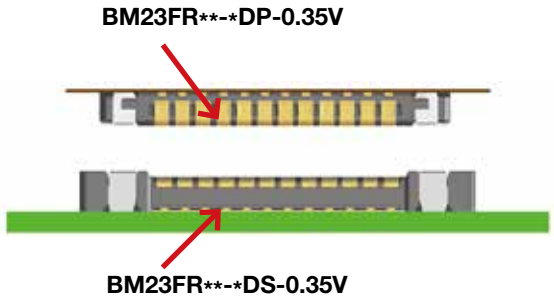
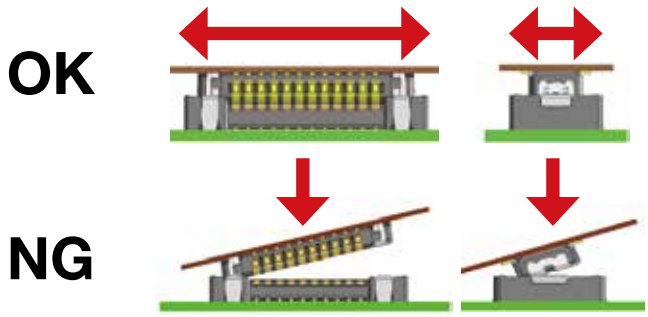
Part No.	HRS No.	No. of contacts	A	B	C	D	E	F	G	H	I
BM23FR0.8-10DP-0.35V(***)	480-0297-0 **	10	12	5.5	3.55	0.3	0.78	1.64	13.5	17.5	330
BM23FR0.8-18DP-0.35V(***)	480-0468-0 **	18	16	7.5	4.95	0.3	0.78	1.64	17.5	21.5	330
BM23FR0.8-60DP-0.35V(***)	480-0299-0 **	60	24	11.5	12.30	0.3	0.78	1.64	25.5	29.5	330

Note 1 : The specification number (895) in the Part No. changes to (95) in the HRS No.

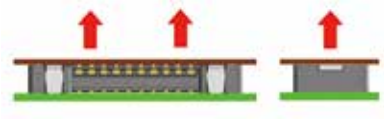
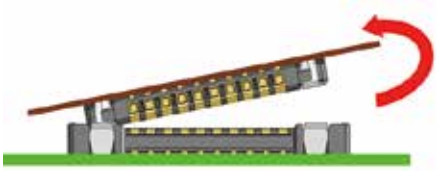
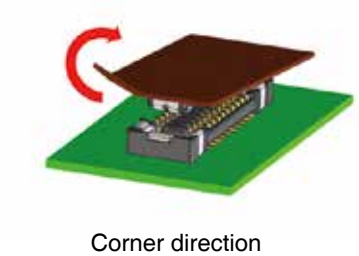
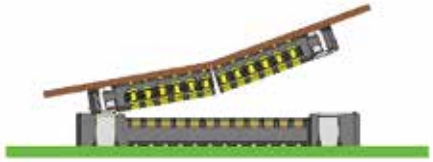
Precautions

1. Recommended solder temperature profile	 **[Conditions]** 1. Peak temperature : Maximum of 250℃ 2. Heat section : 220℃ min., within 60 seconds 3. Preheat section : 150 to 180℃, 90 to 120 seconds 4. Number of reflow cycles : Maximum of 2 cycles Note 1 : The temperature is the surface temperature of the PCB in the vicinity of the connector lead part. Note 2 : When using nitrogen reflow process, please mount the product with the oxygen concentration at a minimum of 1,000[ppm]. Please contact Hirose if the concentration is below 1,000 [ppm].
2. Recommended manual soldering conditions	Soldering iron temperature: 340±10℃ Soldering time : within 3 seconds
3. Recommended screen thickness and open area ratio to PCB pattern area	Thickness : 0.1mm Aperture ratio : 100% on the DS side, 100% on the DP side
4. Warpage of the PCB	A maximum of 0.02mm at the center part of the connector based on both ends of the connector.
5. Cleaning	Not recommended. If this product is cleaned, please evaluate the performance before using it. Cleaning may cause a change in the mating/unmating properties as well as environmental resistance.
6. Notes	■ Care sholud be taken when mating/unmating the connector and when it is not mounted on the PCB. Damage or deformation of the contacts may occur. ■ Avoid supporting the PCB only with the connectors. Support it by other means such as bolts, screws, posts, etc. ■ Care should be taken to avoid excessive prying mating/unmating that could cause damage. ■ During manual soldering, do not apply flux which will cause flux oozing on connector. ■ This product may have slight color differences due to production lot variability, but this does not have any effect on the performance. ■ Please refer to the next page for precautions regarding mating/unmating. ■ Because the product can disengage if dropped (or other impact), and by FPC routing, it is advised to secure the mated connectors to the board with housings and cushioning materials. ■ 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. Refer to the specifications and the guidelines for board pattern dimensions, board cautions, and connector treatment. Please contact Hirose if using the connector under conditions other than those described in the specifications and the guidelines is being considered.

● Handle with care when mating a connector

<table>
<tr>
<td> 
</td>
<td></td>
</tr>
<tr>
<td>Alignment method
 
</td>
<td>When aligning, look for the guide port without applying excessive force.
Caution! If excessive force is applied, the connector could crack or be shaved which could lead to a defect in contact resistance.</td>
</tr>
<tr>
<td>Guiding condition
 
Mated condition
  </td>
<td>When guided, the connectors are aligned parallel to each other with longitudinal and lateral movements restricted. Mate them parallel to each other.</td>
</tr>
</table>

● Handle with care when un-mating connectors

OK 	Un-mate connectors parallel to each other.
OK  Pitch direction	If the connector cannot be un-mated parallel, it can be removed diagonally from the pitch direction, as shown in the left figure. However, the connector can be broken if the FPC is not rigid. Please confirm rigidity of the FPC at the time of trial production.
NG  Corner direction	Do not pull from the corner. If it is pulled from the corner as shown in the left figure, the contact and connector could be damaged.
NG 	Please provide a reinforcing plate for the FPC. If the rigidity of the FPC is not sufficient, the connector may break as shown in the left figure. Please check the action of the FPC to be used repeatedly. A reinforcing plate of 0.3mm or thicker made of glass epoxy material, or 0.2mm or thicker stainless steel is recommended

USA:
HIROSE ELECTRIC (U.S.A.), INC. HEADQUARTERS CHICAGO OFFICE
2300 Warrenville Road, Suite 150,
Downers Grove, IL 60515
Phone : +1-630-282-6700
http://www.hirose.com/us/

USA:
HIROSE ELECTRIC (U.S.A.), INC. SAN JOSE OFFICE
2841 Junction Ave, Suite 200
San Jose, CA. 95134
Phone : +1-408-253-9640
Fax : +1-408-253-9641
http://www.hirose.com/us/

USA:
HIROSE ELECTRIC (U.S.A.), INC. DETROIT OFFICE (AUTOMOTIVE)
17197 N. Laurel Park Drive, Suite 253,
Livonia, MI 48152
Phone : +1-734-542-9963
Fax : +1-734-542-9964
http://www.hirose.com/us/

USA:
HIROSE ELECTRIC (U.S.A.), INC. BOSTON OFFICE
300 Brickstone Square Suite 201,
Andover, MA 01810
Phone : +1-978-662-5255

THE NETHERLANDS:
HIROSE ELECTRIC EUROPE B.V.
Hogehillweg #8 1101 CC Amsterdam Z-O
Phone : +31-20-6557460
Fax : +31-20-6557469
http://www.hirose.com/eu/

GERMANY:
HIROSE ELECTRIC EUROPE B.V. GERMAN BRANCH
Schoenbergstr. 20, 73760 ostfildern
Phone : +49-711-456002-1
Fax : +49-711-456002-299
http://www.hirose.com/eu/

GERMANY:
HIROSE ELECTRIC EUROPE B.V. NUREMBERG OFFICE
Neumeyerstrasse 22-26, 90411 Nurnberg
Phone : +49-911 32 68 89 63
Fax : +49-911 32 68 89 69
http://www.hirose.com/eu/

GERMANY:
HIROSE ELECTRIC EUROPE B.V. HANOVER OFFICE
Bayernstr. 3, Haus C 30855 Langenhagen, Germany
Phone : +49-511 97 82 61 30
Fax : +49-511 97 82 61 35
http://www.hirose.com/eu/

FRANCE:
HIROSE ELECTRIC EUROPE B.V. PARIS OFFICE
130 Avenue Joseph Kessel, Bat E, 78960
Voisins le Bretonneux, France
Phone : +33-1-85764886
Fax : +33-1-85764823
http://www.hirose.com/eu/

UNITED KINGDOM:
HIROSE ELECTRIC EUROPE BV (UK BRANCH)
4 Newton Court, Kelvin Drive, Knowlhill,
Milton Keynes, MK5 8NH
Phone : +44-1908 202050
Fax : +44-1908 202058
http://www.hirose.com/eu/

CHINA:
HIROSE ELECTRIC (CHINA) CO., LTD. (SHANGHAI, HEADQUARTERS)
18, Enterprise Center Tower 2, 209# Gong He Road, Jing'an District, Shanghai, CHINA 200070
Phone : +86-21-6391-3355
Fax : +86-21-6391-3335
http://www.hirose.com/cn/

CHINA:
HIROSE ELECTRIC (CHINA) CO.,LTD. BEIJING BRANCH
A1001, Ocean International Center, Building 56# East 4th Ring Middle Road, ChaoYang District, Beijing, 100025
Phone : +86-10-5165-9332
Fax : +86-10-5908-1381
http://www.hirose.com/cn/

CHINA:
HIROSE ELECTRIC (CHINA) CO., LTD. SHENZHEN BRANCH
Room 09-13, 19/F, Office Tower Shun Hing Square, Di Wang Commercial Centre, 5002 Shen Nan Dong Road, Shenzhen City, Guangdong Province, 518008
Phone : +86-755-8207-0851
Fax : +86-755-8207-0873
http://www.hirose.com/cn/

HONG KONG:
HIROSE ELECTRIC HONGKONG TRADING CO., LTD.
Room 1001, West Wing, Tsim Sha Tsui Centre, 66 Mody Road, Tsim Sha Tsui East, Kowloon, Hong Kong
Phone : +852-2803-5338
Fax : +852-2591-6560
http://www.hirose.com/hk/

TAIWAN:
HIROSE ELECTRIC TAIWAN CO., LTD.
103 8F, No.87, Zhengzhou Rd., Taipei
Phone : +886-2-2555-7377
Fax : +886-2-2555-7355
http://www.hirose.com/tw/

KOREA:
HIROSE KOREA CO.,LTD.
143, Gongdan 1-daero, Siheung-si,
Gyeonggi-do, 15084, Korea
Phone : +82-31-496-7000
Fax : +82-31-496-7100
http://www.hirose.co.kr/

SINGAPORE:
HIROSE ELECTRIC SINGAPORE PTE. LTD.
03, Anson Road, #20-01, Springleaf Tower, Singapore 079909
Phone : +65-6324-6113
Fax : +65-6324-6123
http://www.hirose.com/sg/

INDIA:
HIROSE ELECTRIC SINGAPORE PTE. LTD. DELHI LIAISON OFFICE
Office NO.552, Regus-Green Boulevard, Level5, Tower C, Sec62, Plot B-9A, Block B, Noida, 201301, Uttar Pradesh, India
Phone : +91-12-660-8018
Fax : +91-120-4804949
http://www.hirose.com/sg/

INDIA:
HIROSE ELECTRIC SINGAPORE PTE. LTD. BANGALORE LIAISON OFFICE
Unit No-403, 4th Floor, No-84, Barton Centre, Mahatma Gandhi (MG) Road, Bangalore 560 001, Karnataka, India
Phone : +91-80-4120 1907
Fax : +91-80-4120 9908
http://www.hirose.com/sg/

MALAYSIA:
PENANG REPRESENTATIVE OFFICE
73-3-1, Ideal@The One, Jalan Mahsuri, Bayan Lepas Penang, 11950, Malaysia
Phone : +604-648-5536
http://www.hirose.com/sg/

THAILAND:
BANGKOK OFFICE (REPRESENTATIVE OFFICE)
Unit 4703, 47th FL., 1 Empire Tower, South Sathorn Road, Yannawa, Sathorn, Bangkok 10120 Thailand
Phone : +66-2-686-1255
Fax : +66-2-686-3433
http://www.hirose.com/sg/

Creative Links to World Electronics ®

HRS

HIROSE ELECTRIC CO.,LTD.
2-6-3,Nakagawa Chuoh,Tsuzuki-Ku,Yokohama-Shi 224-8540,JAPAN
TEL: +81-45-620-3526 Fax: +81-45-591-3726
http://www.hirose.com
http://www.hirose-connectors.com