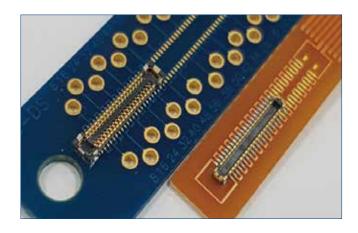


BM23PF Series



■Features

1. Rated current: 5A

Equipped with power contacts capable of handling up to 5A current. (See Fig.1)

• Rated current : 5A (Power contact), 0.3A (Signal contact)

2. Space saving design

Compact design ideal for mobile devices. (See Fig.2)

• Pitch: 0.35mm, Width: 1.98mm, Stacking height: 0.8mm

3. Robust [Breaking Strength: 90N]

Metal guides prevent housing damage due to incorrect mating. (See Fig.3)

4. Highly reliable contact design

2-point contact design for both power and signal contact ensures high reliability. (See Fig.4)

5. 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.

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

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

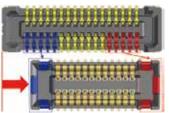
Environmental

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

High current applicable

Conventional product (P=0.35mm, 34pos.)

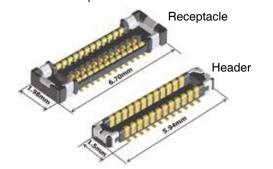
BM23PF-24pos. (+2pos. for power)



Power lines are concentrated into 2 power contacts (Up to 5A/line) instead of conventional multiple signal contacts.

Space-saving

Dimension Example: 24 Pos.



The narrower and shorter, yet flexible design allows tight installation (Pitch : 0.35mm, Width : 1.98mm)
Fig.2

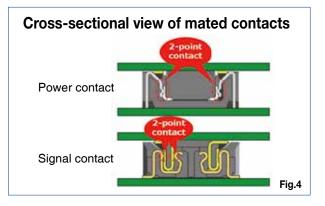
Robust design

Metal guide prevents connector damage even if mated incorrectly.

Metal guide

Breaking Strength Actually Measured 90 N

Fig.3



■Product Specifications

Datings	Rated current	Signal contact : 0.3A (Note1) Power contact : 5A	Operating temperature range	-55°C to 85°C (Note2)	Storage temperature range	-10°C to 60°C (Note3)
Ratings	Rated voltage	30V AC/DC	Operating humidity range	20% to 80%	Storage humidity range	40% to 70% (Note3)

Items	Specifications	Conditions
1. Contact resistance	Signal contact : 90mΩ max. Power contact : 30mΩ 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 : Signal contact : $90m\Omega$ max. Power contact : $30m\Omega$ 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/s², duration of pulse: 11ms at 3 times for 3 directions.
7. Humidity	Contact resistance : Signal contact : $90m\Omega$ max. Power contact : $30m\Omega$ max. Insulation resistance : $25M\Omega$ min.	96 hours at temperature of 40±2°C and a humidity range from 90 to 95%
8. Temperature cycle	Contact resistance : Signal contact : $90m\Omega$ max. Power contact: $30m\Omega$ max. Insulation resistance : $50M\Omega$ min.	-55°C for 30minutes → 85°C for 30minutes, 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: The total current capacity for the connector with 40 or more signal contacts is 12A for all contacts. (Signal contact only)
- Note 2: Includes temperature rise caused by current flow.
- Note 3: 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
	Insulator	LCP	Black	UL94V-0
Receptacle Header	Signal Contact	Copper alloy	Gold plating	
	Power Contact	Copper alloy	Gold plating	

■ Product Number Structure

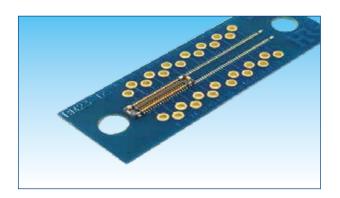
Refer to the chart below when determining the product specifications from the product number. Please select from the product numbers listed in this catalog when placing orders.

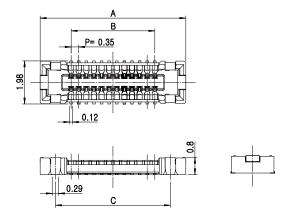
● Receptacle / Header

BM	23	PF	8.0	-	*	DS	-	0.35	V	(<u>***</u>)
0										9

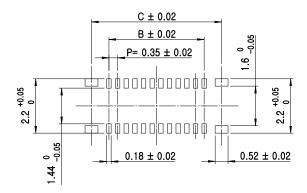
Series Name: BM	© Connector Type DS: Receptacle DP: Header
2 Series No. : 23	Ocontact Pitch : 0.35mm
Shape Symbols PF: Power contact type	Terminal type V : Straight SMT
4 Stacking Height: 0.8mm	Gold plated specification and packaging status Gold plate thickness 0.05 years.
Number of Contacts	 (51): Gold plate thickness 0.05μm Embossed tape packaging(10,000pcs/reel) (895): Gold plate thickness 0.05μm Embossed tape packaging (1,000pcs/reel)

■Receptacle

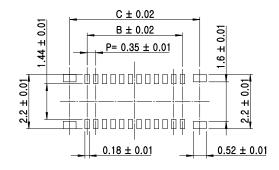




♠ Recommended PCB layout



♠ Recommended metal mask dimensions (mask thickness: 100µm)



Unit: mm

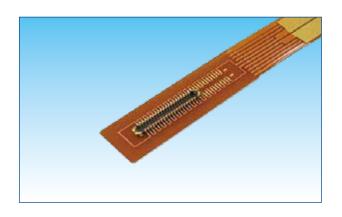
Part No.	HRS No.	No. of contacts	Α	В	С
BM23PF0.8-10DS-0.35V(***)	480-0312-0 **	10	4.25	1.40	2.84
BM23PF0.8-14DS-0.35V(***)	480-0367-0 **	14	4.95	2.10	3.54
BM23PF0.8-20DS-0.35V(***)	480-0434-0 **	20	6.00	3.15	4.59
BM23PF0.8-24DS-0.35V(***)	480-0368-0 **	24	6.70	3.85	5.29
BM23PF0.8-30DS-0.35V(***)	480-0472-0 **	30	7.75	4.90	6.34
BM23PF0.8-40DS-0.35V(***)	480-0369-0 **	40	9.50	6.65	8.09
BM23PF0.8-42DS-0.35V(***)	480-0436-0 **	42	9.85	7.00	8.44
BM23PF0.8-46DS-0.35V(***)	480-0402-0 **	46	10.55	7.70	9.14
BM23PF0.8-54DS-0.35V(***)	480-0370-0 **	54	11.95	9.10	10.54

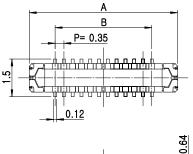
Note 1 : Please place orders in full reel quantities.

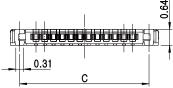
Note 2: This connector has no polarity.

Note 3: The specification number(895) in the Part No. changes to(95) in the HRS No.

■Header

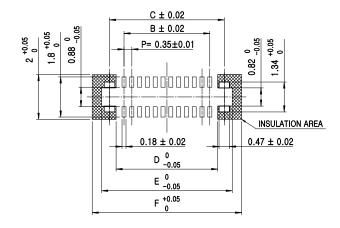




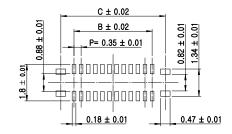




▶ Recommended PCB layout



Recommended metal mask dimensions (mask thickness: 100μm)



Unit: mm

Part No.	HRS No.	No. of contacts	А	В	С	D	Е	F
BM23PF0.8-10DP-0.35V(***)	480-0306-0 **	10	3.49	1.40	2.70	2.11	3.41	4.25
BM23PF0.8-14DP-0.35V(***)	480-0366-0 **	14	4.19	2.10	3.40	2.81	4.11	4.95
BM23PF0.8-20DP-0.35V(***)	480-0433-0 **	20	5.24	3.15	4.45	3.86	5.16	6.00
BM23PF0.8-24DP-0.35V(***)	480-0291-0 **	24	5.94	3.85	5.15	4.56	5.86	6.70
BM23PF0.8-30DS-0.35V(***)	480-0426-0 **	30	6.99	4.90	6.20	5.61	6.91	7.75
BM23PF0.8-40DP-0.35V(***)	480-0317-0 **	40	8.74	6.65	7.95	7.36	8.66	9.50
BM23PF0.8-42DP-0.35V(***)	480-0435-0 **	42	9.09	7.00	8.30	7.71	9.01	9.85
BM23PF0.8-46DP-0.35V(***)	480-0402-0 **	46	9.79	7.70	9.00	8.41	9.71	10.55
BM23PF0.8-54DP-0.35V(***)	480-0303-0 **	54	11.19	9.10	10.40	9.81	11.11	11.95

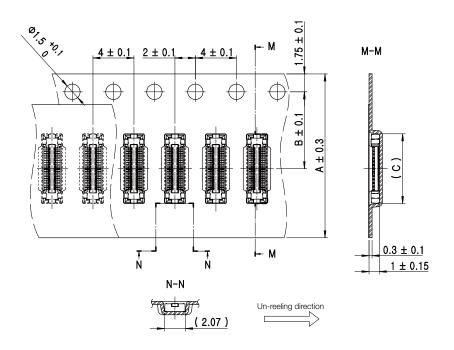
Note 1 : Please place orders in full reel quantities.

Note 2 : This connector has no polarity.

Note 3: The specification number(895) in the Part No. changes to(95) in the HRS No.

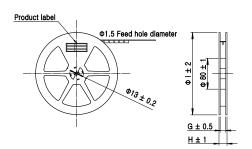
● Embossed Tape Dimensions (IEC 602286-3, with JIC C 0806)

Receptacle

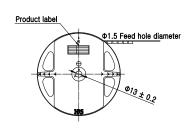


● Reel Dimensions

▶10,000pcs/reel



▶1,000pcs/reel



Ф 180 ± 2 Ф 80 ± 1			
G ± 0.5_		L	
H ± 1	ľ		

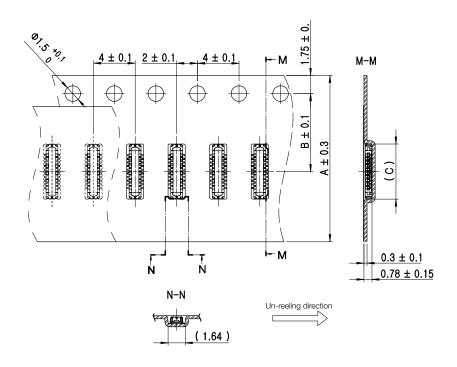
Unit: mm

Part No.	HRS No.	No. of contacts	Α	В	С	G	Н	1
BM23PF0.8-10DS-0.35V(***)	480-0312-0 **	10	16	7.5	4.36	17.5	21.5	330
BM23PF0.8-14DS-0.35V(***)	480-0367-0 **	14	16	7.5	5.06	17.5	21.5	330
BM23PF0.8-20DS-0.35V(***)	480-0434-0 **	20	16	7.5	6.11	17.5	21.5	330
BM23PF0.8-24DS-0.35V(***)	480-0368-0 **	24	16	7.5	6.81	17.5	21.5	330
BM23PF0.8-30DS-0.35V(***)	480-0472-0 **	30	16	7.5	7.86	17.5	21.5	330
BM23PF0.8-40DS-0.35V(***)	480-0369-0 **	40	24	11.5	9.61	25.5	29.5	330
BM23PF0.8-42DS-0.35V(***)	480-0436-0 **	42	24	11.5	9.96	25.5	29.5	330
BM23PF0.8-46DS-0.35V(***)	480-0402-0 **	46	24	11.5	10.66	25.5	29.5	330
BM23PF0.8-54DS-0.35V(***)	480-0370-0 **	54	24	11.5	12.06	25.5	29.5	330

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

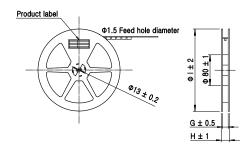
♦ Embossed Tape Dimensions (IEC 602286-3, with JIC C 0806)

Header

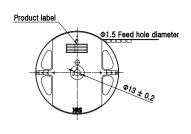


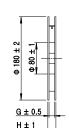
Reel Dimensions

▶10,000pcs/reel



▶1,000pcs/reel





Unit: mm

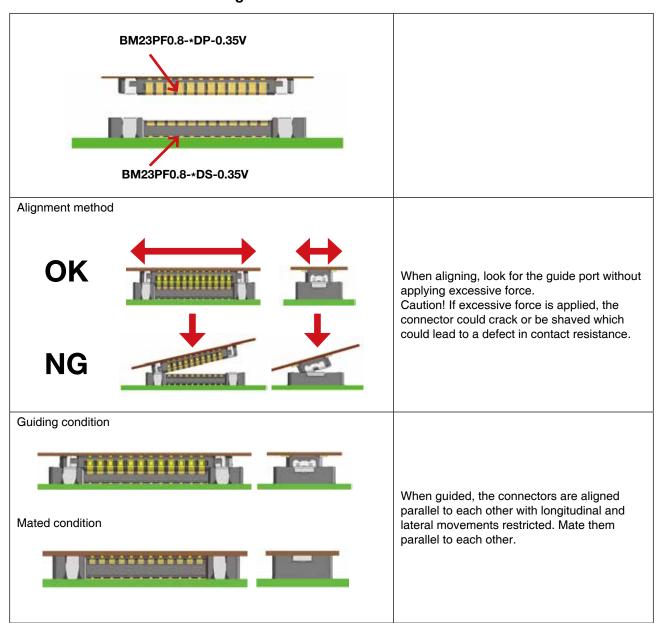
Part No.	HRS No.	No. of contacts	Α	В	С	G	Н	I
BM23PF0.8-10DP-0.35V(***)	480-0306-0 **	10	12	5.5	3.65	13.5	17.5	330
BM23PF0.8-14DP-0.35V(***)	480-0366-0 **	14	16	7.5	4.35	17.5	21.5	330
BM23PF0.8-20DP-0.35V(***)	480-0433-0 **	20	16	7.5	5.4	17.5	21.5	330
BM23PF0.8-24DP-0.35V(***)	480-0291-0 **	24	16	7.5	6.10	17.5	21.5	330
BM23PF0.8-30DS-0.35V(***)	480-0426-0 **	30	16	7.5	7.15	17.5	21.5	330
BM23PF0.8-40DP-0.35V(***)	480-0317-0 **	40	24	11.5	8.90	25.5	29.5	330
BM23PF0.8-42DP-0.35V(***)	480-0435-0 **	42	24	11.5	9.25	25.5	29.5	330
BM23PF0.8-46DP-0.35V(***)	480-0402-0 **	46	24	11.5	9.95	25.5	29.5	330
BM23PF0.8-54DP-0.35V(***)	480-0303-0 **	54	24	11.5	11.35	25.5	29.5	330

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

Precautions

Recommended solder	MAX 250 ℃						
temperature profile	250						
	220 C						
	© 180°C						
	150°C						
	© 180 — 150 © 150 — 150 °C						
	100						
	50 -						
	25 C 90 to 120 seconds Max. 60 seconds						
	Preheating time Soldering time						
	Start						
	Time (seconds)						
	[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]						
Recommended manual soldering conditions	Soldering iron temperature: 340±10℃ Soldering time : within 3 seconds						
3. Recommended screen	Thickness: 0.1mm						
thickness and open area ratio to PCB pattern area	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 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.						
	■ Care sholud be taken when mating/unmating the connector and when it is not mounted on the						
6. Notes	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



● Handle with care when un-mating connectors

ОК		Un-mate connectors parallel to each other.
ОК	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	- Congression of the Congression	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

MEMO

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BM23PF0.8-46DS-0.35V(51) BM23PF0.8-40DP-0.35V(51) BM23PF0.8-40DS-0.35V(51) BM23PF0.8-14DP-0.35V(51) BM23PF0.8-54DS-0.35V(895) BM23PF0.8-30DP-0.35V(51) BM23PF0.8-30DS-0.35V(51) BM23PF0.8-20DS-0.35V(895) BM23PF0.8-14DS-0.35V(895) BM23PF0.8-20DP-0.35V(51) BM23PF0.8-42DP-0.35V(895) BM23PF0.8-14DP-0.35V(895) BM23PF0.8-40DS-0.35V(895) BM23PF0.8-24DP-0.35V(895) BM23PF0.8-46DP-0.35V(51) BM23PF0.8-24DP-0.35V(51) BM23PF0.8-30DS-0.35V(895) BM23PF0.8-30DP-0.35V(895) BM23PF0.8-30DP-0.35V(895) BM23PF0.8-30DP-0.35V(895) BM23PF0.8-30DP-0.35V(895) BM23PF0.8-30DP-0.35V(895) BM23PF0.8-30DP-0.35V(895) BM23PF0.8-24DS-0.35V(51) BM23PF0.8-20DS-0.35V(51) BM23PF0.8-20DS-0.35V(51) BM23PF0.8-20DS-0.35V(51) BM23PF0.8-20DS-0.35V(51) BM23PF0.8-20DS-0.35V(51) BM23PF0.8-24DP-0.35V(895) BM23PF0.8-24DP-0.35V(895) BM23PF0.8-46DP-0.35V(895) BM23PF0.8-24DP-0.35V(895) BM23PF0.8-46DS-0.35V(895) BM23PF0.8-30DP-0.35V(895) BM23PF0.8-30DP-0.35V(895)