

Product Specifications

Ratings	Current rating	0.3A	Operating temperature range	-35°C to 85°C (Note 1)	Storage temperature range	-10°C to 60°C (Note 2)
	Voltage rating	50V AC	Operating humidity range	20% to 80%	Storage humidity range	40% to 70% (Note 2)

Item	Specification	Condition
1. Insulation resistance	500M ohms min.	100V DC
2. Withstanding voltage	No flashover or insulation breakdown	150V AC/1 minute
3. Contact resistance	60m ohms max.	100mA
4. Vibration	No momentary disconnections of 1 μs min	Frequency of 10 to 55 Hz, single amplitude of 0.75 mm, in 3 directions for 2 hours
5. Humidity	Contact resistance : 60 m ohms max. Insulation resistance : 250 M ohms min.	Temperature of 40°C±2°C, humidity of 90% to 95%, 96 hours
6. Temperature cycle	Contact resistance : 60 m ohms max. Insulation resistance : 500 M ohms min.	(-55°C : 30minutes →5 to 35°C : 10minutes →85°C : 30minutes →5 to 35°C: 10minutes) for 5 cycles
7. Durability	Contact resistance : 60m ohms max.	50 cycles (mating/unmating)
8. Resistance to soldering heat	No deformation of the insulator parts affecting performance	Reflow: At recommended temperature profile Manual soldering: Soldering iron temperature 300°C, for 3 seconds

Note 1: Includes temperature rise caused by the current flow.

Note 2: The term "storage" refers to products stored for long period of time prior to mounting and use. Operating Temperature Range and Humidity range covers non- conducting condition of installed connectors in storage, shipment or during transportation.

Note 3: Information contained in this catalog represents general requirements for this Series. Contact us for the drawings and specifications for a specific part number shown.

Materials

Item	Part	Material	Finish	Remarks
Receptacles	Insulator	LCP	Color : Black	UL94V-0
Plugs	Contacts	Phosphor bronze	Gold plated	—

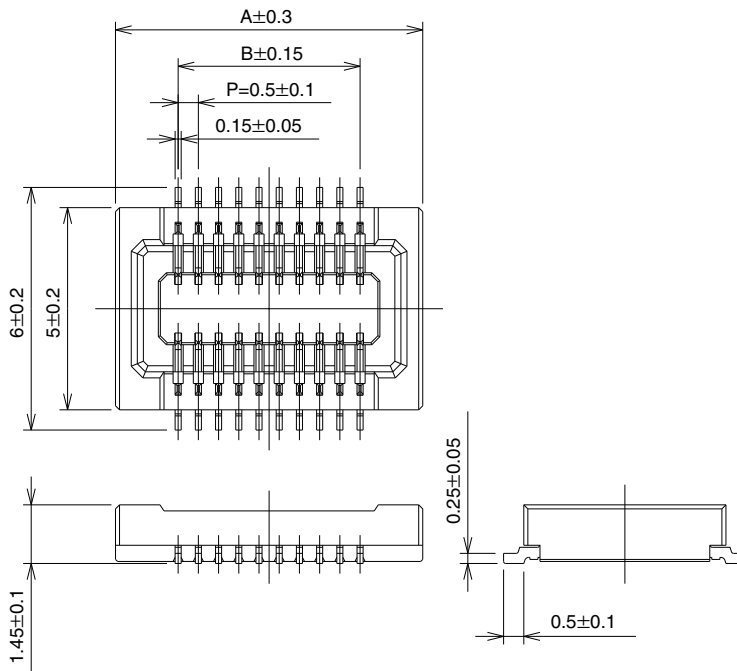
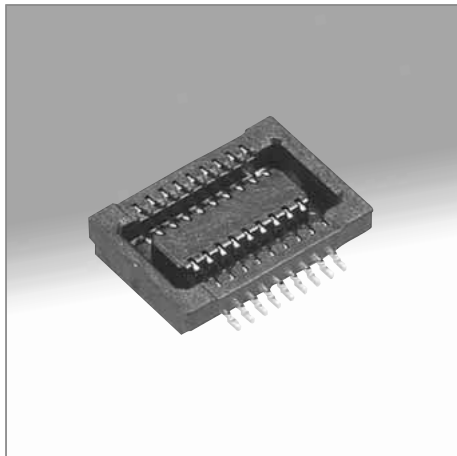
Ordering information

●Receptacles/Plugs

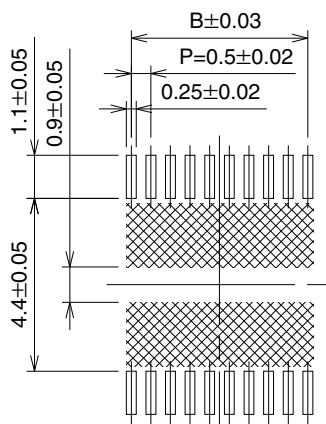
DF23 C - * DS - 0.5 V (**)
 ① ② ③ ④ ⑤ ⑥ ⑦

① Series name: DF23	⑤ Contact pitch: 0.5mm
② Metal fitting & Locating boss type C: Without metal fittings, without Locating boss	⑥ Terminal type V: Straight SMT
③ Number of contacts: 10, 12, 14, 16, 18, 20, 22, 30, 40, 50, 60	⑦ Packaging type Receptacle(51): Embossed tape packaging (2,000 pieces per reel) Receptacle(53): Embossed tape packaging (3,000 pieces per reel) Plug(92): Embossed tape packaging (2,000 pieces per reel) Plug(91): Embossed tape packaging (3,000 pieces per reel)
④ Connector type DS: Double-row receptacle DP: Double-row plug	

Receptacles



Recommended PCB Footprints



Note: Shaded area should be free of any conductive traces.

[Packaging/ quantity per reel code] - **, (**)
 (51): Embossed tape packaging (2,000 pieces per reel)
 (53): Embossed tape packaging (3,000 pieces per reel)

Unit: mm

Product No.	CL No.	Number of Contacts	A	B	Remarks	RoHS
DF23C-10DS-0.5V(**)	CL688-0306-9-**	10	5.1	2.0		YES
DF23C-12DS-0.5V(**)	CL688-0309-7-**	12	5.6	2.5	(Note 2)	
DF23C-14DS-0.5V(**)	CL688-0300-2-**	14	6.1	3.0		
DF23C-16DS-0.5V(**)	CL688-0307-1-**	16	6.6	3.5	(Note 1)	
DF23C-18DS-0.5V(**)	CL688-0308-4-**	18	7.1	4.0	(Note 2)	
DF23C-20DS-0.5V(**)	CL688-0301-5-**	20	7.6	4.5	(Note 1)	
DF23C-22DS-0.5V(**)	CL688-0310-6-**	22	8.1	5.0	(Note 2)	
DF23C-30DS-0.5V(**)	CL688-0302-8-**	30	10.1	7.0	(Note 1)	
DF23C-40DS-0.5V(**)	CL688-0303-0-**	40	12.6	9.5	(Note 1)	
DF23C-50DS-0.5V(**)	CL688-0304-3-**	50	15.1	12.0	(Note 1)	
DF23C-60DS-0.5V(**)	CL688-0305-6-**	60	17.6	14.5	(Note 1)	

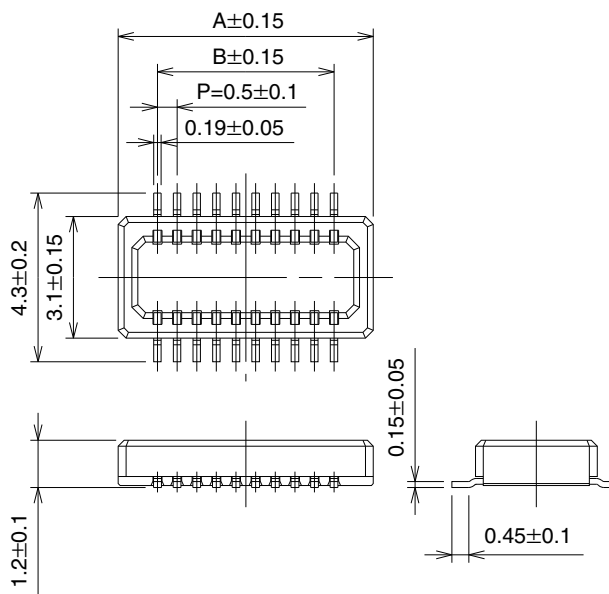
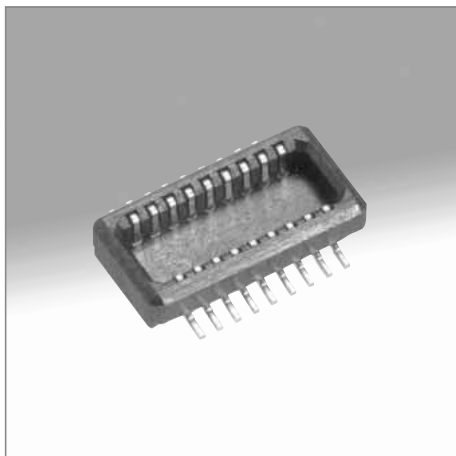
Note 1: Available in code (51) only.

Note 2: Available in code (53) only.

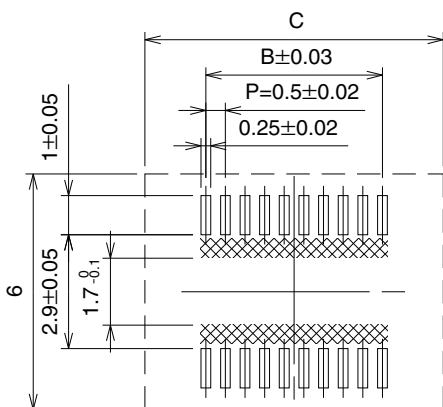
Note 3: Contact Hirose for availability.

Note 4: Please order embossed tape packaging items by the reel.

Plugs



Recommended PCB Footprints



Note 1: Shaded area should be free of any conductive traces.

Note 2: Do not leave any conductive traces or install components in this area.

[Packaging/ quantity per reel code] - **, (**)
 (92): Embossed tape packaging (2,000 pieces per reel)
 (91): Embossed tape packaging (3,000 pieces per reel)

Unit: mm

Product No.	CL No.	Number of Contacts	A	B	C	Remarks	RoHS
DF23C-10DP-0.5V(**)	CL688-0806-1-**	10	4.0	2.0	5.1		YES
DF23C-12DP-0.5V(**)	CL688-0809-0-**	12	4.5	2.5	5.6	(Note 1)	
DF23C-14DP-0.5V(**)	CL688-0800-5-**	14	5.0	3.0	6.1		
DF23C-16DP-0.5V(**)	CL688-0807-4-**	16	5.5	3.5	6.6	(Note 2)	
DF23C-18DP-0.5V(**)	CL688-0808-7-**	18	6.0	4.0	7.1		
DF23C-20DP-0.5V(**)	CL688-0801-8-**	20	6.5	4.5	7.6	(Note 2)	
DF23C-22DP-0.5V(**)	CL688-0810-9-**	22	7.0	5.0	8.1	(Note 1)	
DF23C-30DP-0.5V(**)	CL688-0802-0-**	30	9.0	7.0	10.1		
DF23C-40DP-0.5V(**)	CL688-0803-3-**	40	11.5	9.5	12.6	(Note 2)	
DF23C-50DP-0.5V(**)	CL688-0804-6-**	50	14.0	12.0	15.1	(Note 2)	
DF23C-60DP-0.5V(**)	CL688-0805-9-**	60	16.5	14.5	17.6	(Note 2)	

Note 1: Available in code (91) only.

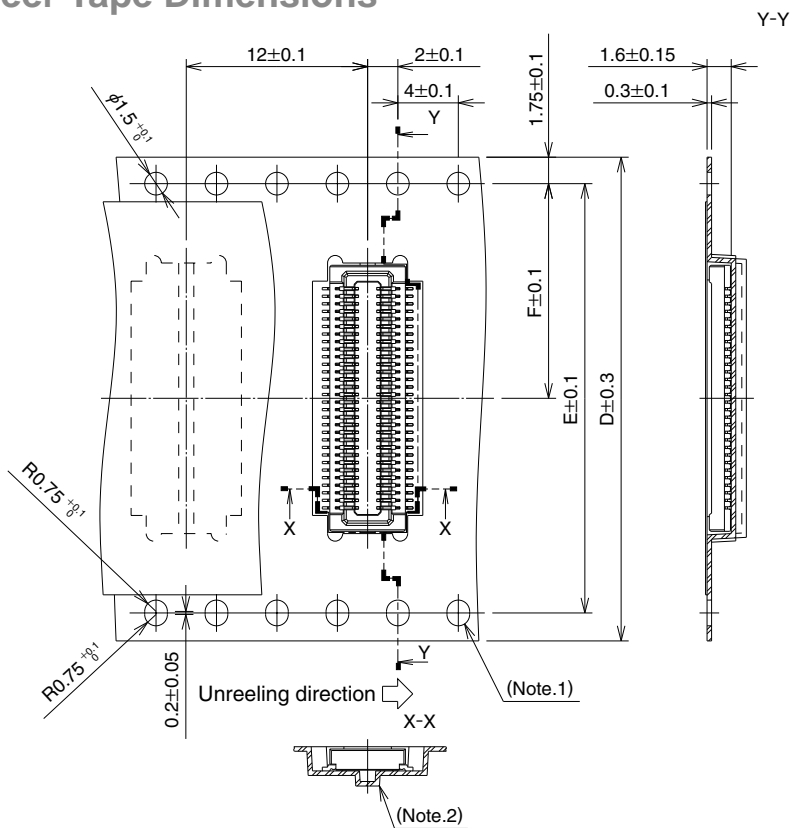
Note 2: Available in code (92) only.

Note 3: Contact Hirose for availability.

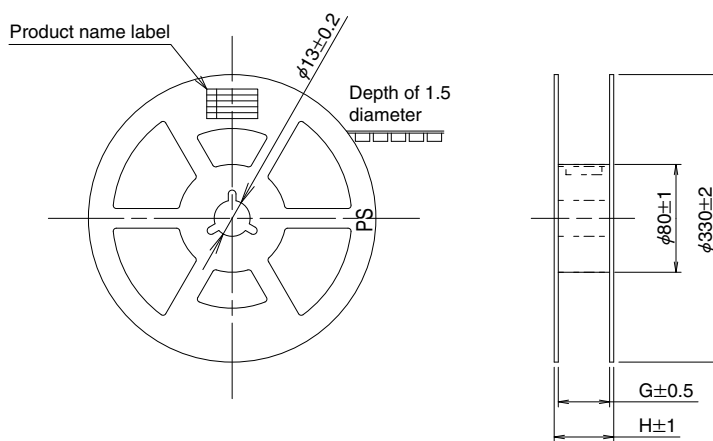
Note 4: Please order embossed tape packaged items by the reel.

◆ Embossed Career Tape Dimensions

■ Receptacles



■ Reel Dimensions



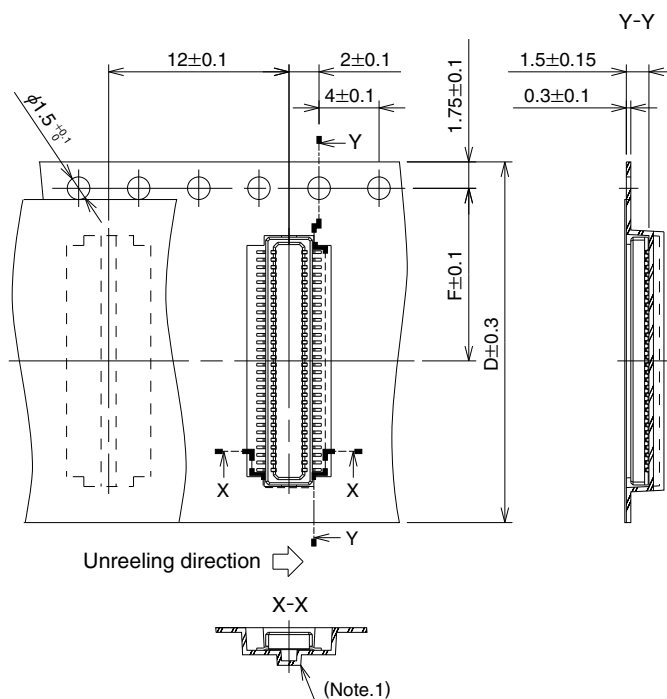
Unit: mm

Product No.	D	E	F	G	H
DF23C-10DS-0.5V(**)	16.0	—	7.5	17.5	21.5
DF23C-12DS-0.5V(**)	16.0	—	7.5	17.5	21.5
DF23C-14DS-0.5V(**)	16.0	—	7.5	17.5	21.5
DF23C-16DS-0.5V(**)	16.0	—	7.5	17.5	21.5
DF23C-18DS-0.5V(**)	16.0	—	7.5	17.5	21.5
DF23C-20DS-0.5V(**)	16.0	—	7.5	17.5	21.5
DF23C-22DS-0.5V(**)	24.0	—	11.5	25.5	29.5
DF23C-30DS-0.5V(**)	24.0	—	11.5	25.5	29.5
DF23C-40DS-0.5V(**)	24.0	—	11.5	25.5	29.5
DF23C-50DS-0.5V(**)	24.0	—	11.5	25.5	29.5
DF23C-60DS-0.5V(**)	32.0	28.4	14.2	33.5	37.5

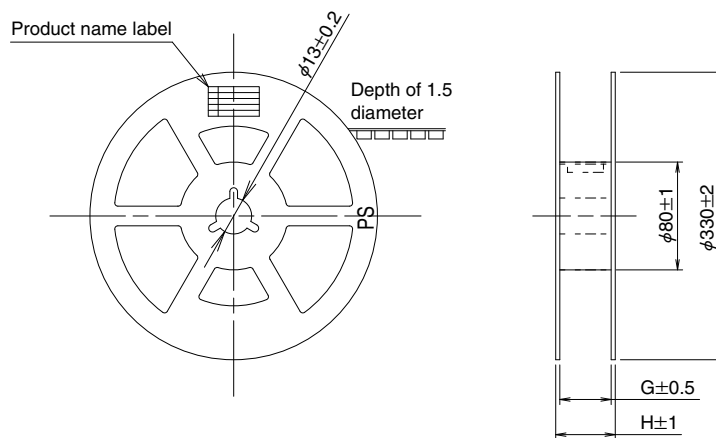
Note 1: This side feed hole is added to embossed tape where the D dimension is 32.0 min. wide.

Note 2: (53) packaging code embossed tape is without the bottom surface protrusion.

Plugs



Reel Dimensions

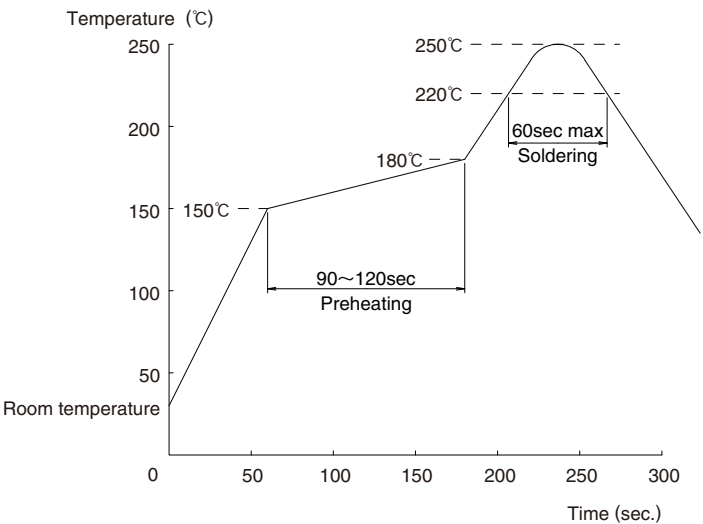


Unit: mm

Product No.	D	F	G	H
DF23C-10DP-0.5V(**)	16.0	7.5	17.5	21.5
DF23C-12DP-0.5V(**)	16.0	7.5	17.5	21.5
DF23C-14DP-0.5V(**)	16.0	7.5	17.5	21.5
DF23C-16DP-0.5V(**)	16.0	7.5	17.5	21.5
DF23C-18DP-0.5V(**)	16.0	7.5	17.5	21.5
DF23C-20DP-0.5V(**)	16.0	7.5	17.5	21.5
DF23C-22DP-0.5V(**)	24.0	11.5	25.5	29.5
DF23C-30DP-0.5V(**)	16.0	7.5	17.5	21.5
DF23C-40DP-0.5V(**)	24.0	11.5	25.5	29.5
DF23C-50DP-0.5V(**)	24.0	11.5	25.5	29.5
DF23C-60DP-0.5V(**)	24.0	11.5	25.5	29.5

Note : Code number (91) embossed tape is without the bottom surface protrusion.

◆ Usage Precautions

<p>1.Recommended Temperature Profile Temperature</p>	 <p>Note 1: Up to 2 cycles of Reflow soldering are possible under the same conditions, provided that there is a return to normal temperature between the first and second cycle.</p> <p>Note 2: The temperature profile indicates the board surface temperature at the point of contacts with the connector terminals.</p>
<p>2.Recommended Manual Soldering Conditions</p>	<p>Temperature: 290°C±10°C, Soldering time: within 2 sec.</p>
<p>3.Recommended Screen Thickness and Open Area Ratio (Pattern Area Ratio)</p>	<p>Thickness : 0.12 mm Open Area ratio: 80%</p>
<p>4.Board Warping</p>	<p>Maximum of 0.03 mm at the connector center section, with both ends of the connector as reference points.</p>
<p>5.Cleaning Conditions</p>	<p>Refer to the "Nylon Connector Use Handbook."</p>
<p>6.Use and handling precautions.</p>	<p>■When manually handling the connectors avoid touching any portion of exposed terminal leads. This may cause deformation and lead to difficulties with placement and soldering on the PCB.</p> <p>When mating/un-mating do not use excessive force or lifting of one side only.</p>

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