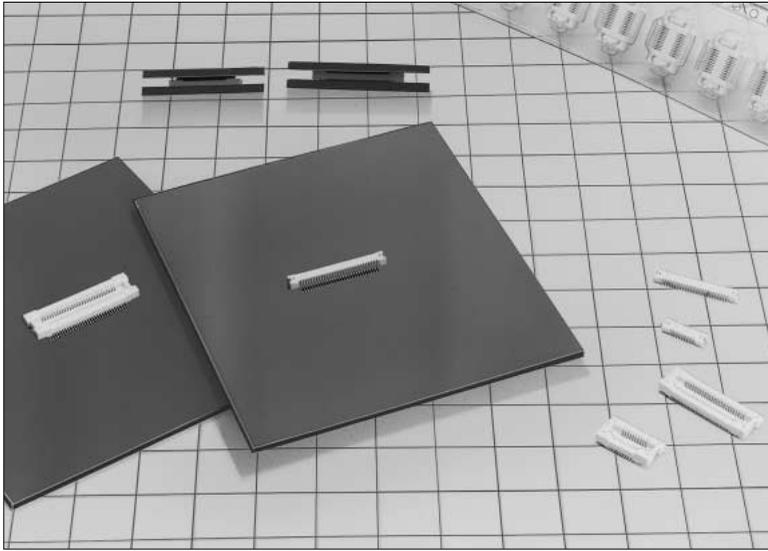


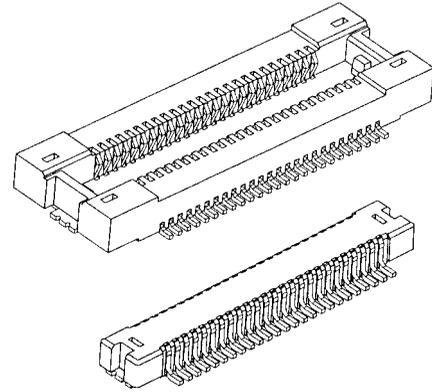
0.5mm Pitch SMT Board to Board Connector

DF16 Series



Correspond to Automatic Mounting

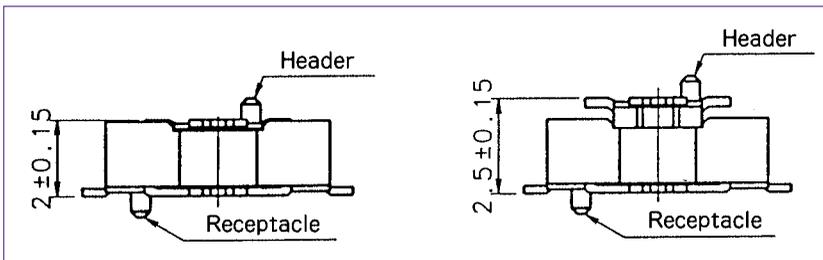
The vacuum pick-up area is prepared for automatic mounting machine.



■ Features

1. Miniaturizing and Slimming

In addition to 0.5mm pitch miniaturization, board to stacking height of 2mm and 2.5mm are provided.



Note1: The stacking height doesn't include the solder paste thickness.

Receptacle commonly uses DF16#-*DS-0.5V.

Header Product Name	Stacking Height
DF16#(2.0)-*DP-0.5V	2.0mm
DF16#(2.5)-*DP-0.5V	2.5mm

2. High Contact Reliability

The bellows female contact has a sufficient spring characteristic despite the low profile, and achieves high contact reliability.

3. Click Sensitivity In Mating

The click feeling is considered to facilitate insertion check when the connector is mated.

4. Metal Fitting Available

The metal fitting to prevent the solder peel is provided, considering the mounting on FPC.

5. Corresponding to Automatic Mounting

The connector has the vacuum pick-up area, and enables the automatic mounting with the embossed tape packaging. Connector specification with no boss and no fitting is also.

■ Applications

Mobile phone, LCD(Liquid Crystal Display), and so on

Product Specifications

Rating	Rated Current : 0.3A	Operating Temperature Range : -35~+85°C (Note 1.)	Storage Temperature Range : -10~+60°C (Note 2.)
	Rated Voltage : 50V AC	Operating Humidity Range : 40~80%	Storage Humidity Range : 40~70% (Note 2.)

Item	Specification	Condition	
1. Insulation Resistance	500MΩ min	Measured at 100V DC	
2. Withstand voltage	Neither short or insulation breakdown	150V AC for 1 minute	
3. Contact Resistance	50mΩ max	Measured at 100mA	
4. Vibration	Electrical discontinuity, 1μ S max.	10~55Hz and single amplitude 0.75mm in 3 directions for 2 hours, respectively.	
5. Moisture Resistance	Contact resistance: 50mΩ max. Insulation resistance: 250MΩ min.	Exposed to temperature 40±2°C and humidity 90~95% for 96 hours	
6. Temperature Cycle	Contact resistance: 50mΩ max. Insulation resistance: 500MΩ min.	(-55°C: 30 minutes 5~35°C: 10 minutes 85°C: 30 minutes 5~35°C: 10 minutes) 5 cycles	
7. Operating Life	Contact resistance: 50mΩ	50cycle	
8. Resistance to Soldering heat	No resion area fusion to degrade performance	SMT Type	
		Reflow	According to the recommended temperature profile
		Manual soldering	Soldering iron temperature: 300°C for 3 seconds

Note 1: Temperature rise included when energized

Note 2: This storage indicates a long-term storage state for the unused product before the board mounted.

The operating temperature and humidity ranges are applied to the non-energized state after the connector has been installed to the board.

Note 3: The above standards represent this series. Individual formal agreement should be based on the "Specification".

Material

Product	Part	Material	Treatment	UL Standard
Receptacle	Insulator	Polyamide resin	White Beige (Natural)	UL94V-0
	Contact	Phosphor copper	Gold plating	————
	Metal fitting	Brass	Solder plating	————
Header	Insulator	Polyamide resin	White Beige (Natural)	UL94V-0
	Contact	Phosphor copper	Gold plating	————
	Metal fitting	Brass	Solder plating	————

Ordering Information

Please determine the specific product. If needed, please select and order products from the product No. as listed on catalog page A310~A315.

Receptacle/Header

DF 16 # () - * DS - 0.5 V (*,*)**

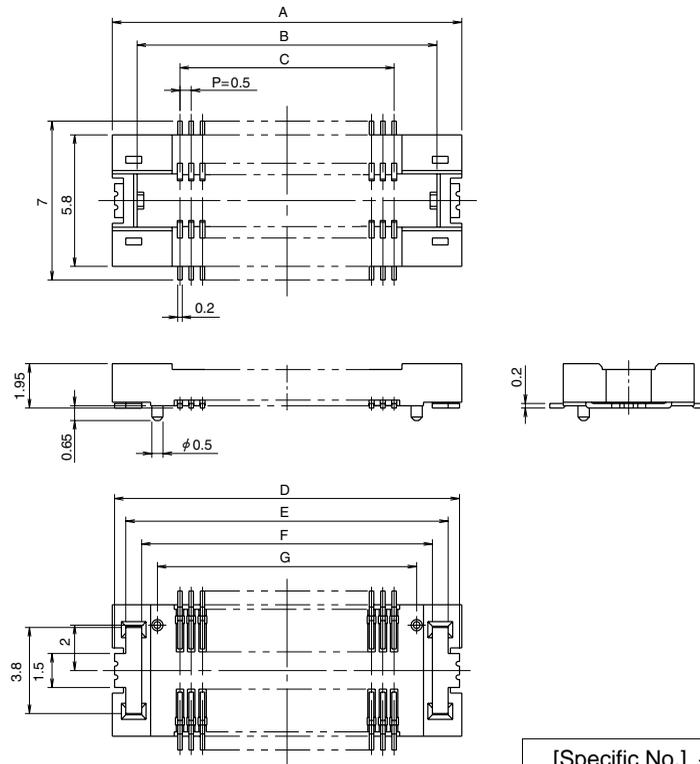
① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

① Series Name : DF	④ Product height Receptacle : None Header : 2.0, 2.5	⑦ Contact Pitch : 0.5mm															
② Series No. : 16	⑤ Number of Contacts 14, 20, 30, 34, 40, 50, 60, (80) (Note1)	⑧ Contact Type V : Straight SMT															
③ Type Symbol <table border="1"> <thead> <tr> <th>Symbol</th> <th>Fitting</th> <th>Boss</th> </tr> </thead> <tbody> <tr> <td>None</td> <td>○</td> <td>○</td> </tr> <tr> <td>A</td> <td>×</td> <td>○</td> </tr> <tr> <td>B</td> <td>○</td> <td>×</td> </tr> <tr> <td>C</td> <td>×</td> <td>×</td> </tr> </tbody> </table>	Symbol	Fitting	Boss	None	○	○	A	×	○	B	○	×	C	×	×	⑥ Connector Type DS : Double-row receptacle DP : Double-row header	⑨ Packaging Type (50) : Gold plating, embossed tape packaging (51) : Gold plating, tube packaging
	Symbol	Fitting	Boss														
	None	○	○														
	A	×	○														
B	○	×															
C	×	×															

Note1: For the 80 contacts connector, the stacking height 2.0mm product only is available.

For the 14 and 34 contacts connectors, the stacking height of 2.5mm product only is available.

■ Receptacle With metal fitting



[Specific No.] - * *, (* *)
 (50) : Gold plating, tube packaging
 (51) : Gold plating, embossed tape packaging

● Receptacle With metal fitting, With boss

Unit: mm

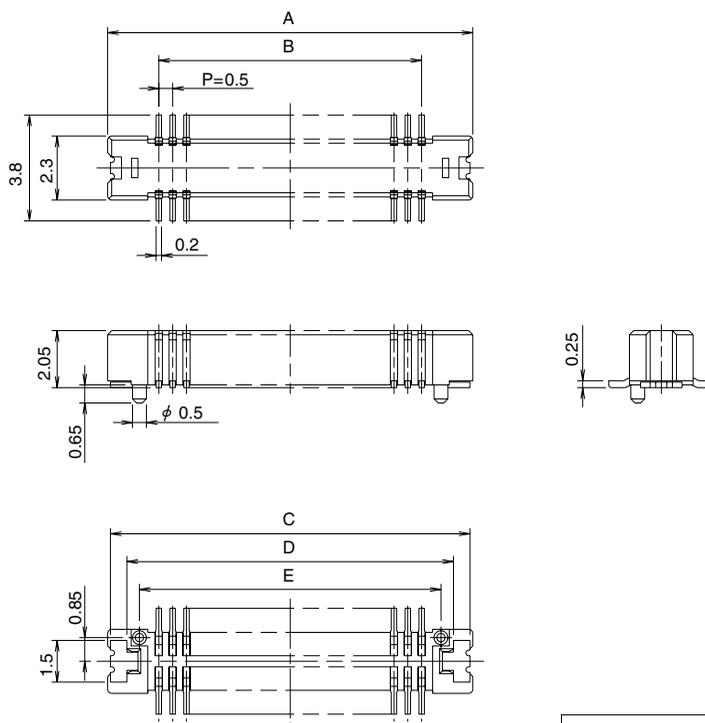
Product No.	HRS No.	Number of Contacts	A	B	C	D	E	F	G	Tube Packaging Quantity(pcs.)
DF16-14DS-0.5V(***)	CL679-0010-1-***	14	9.0	6.8	3.0	8.8	7.8	6.4	5.6	54 pcs.
DF16-20DS-0.5V(***)	CL679-0002-3-***	20	10.5	8.3	4.5	10.3	9.3	7.9	6.5	46 pcs.
DF16-30DS-0.5V(***)	CL679-0003-6-***	30	13.0	10.8	7.0	12.8	11.8	10.4	9.0	37 pcs.
DF16-34DS-0.5V(***)	CL679-0009-2-***	34	14.0	11.8	8.0	13.8	12.8	11.4	10.0	35 pcs.
DF16-40DS-0.5V(***)	CL679-0004-9-***	40	15.5	13.3	9.5	15.3	14.3	12.9	11.5	31 pcs.
DF16-50DS-0.5V(***)	CL679-0005-1-***	50	18.0	15.8	12.0	17.8	16.8	15.4	14.0	27 pcs.
DF16-60DS-0.5V(***)	CL679-0006-4-***	60	20.5	18.3	14.5	20.3	19.3	17.9	16.5	23 pcs.
DF16-80DS-0.5V(***)	CL679-0008-0-***	80	25.5	23.3	19.5	25.3	24.3	22.9	21.5	19 pcs.

● Receptacle With metal fitting, Without boss

Unit: mm

Product No.	HRS No.	Number of Contacts	A	B	C	D	E	F	G	Tube Package Quantity(pcs.)
DF16B-14DS-0.5V(***)	CL679-0030-9-***	14	9.0	6.8	3.0	8.8	7.8	6.4	—	54 pcs.
DF16B-20DS-0.5V(***)	CL679-0022-0-***	20	10.5	8.3	4.5	10.3	9.3	7.9	—	46 pcs.
DF16B-30DS-0.5V(***)	CL679-0023-3-***	30	13.0	10.8	7.0	12.8	11.8	10.4	—	37 pcs.
DF16B-34DS-0.5V(***)	CL679-0029-0-***	34	14.0	11.8	8.0	13.8	12.8	11.4	—	35 pcs.
DF16B-40DS-0.5V(***)	CL679-0024-6-***	40	15.5	13.3	9.5	15.3	14.3	12.9	—	31 pcs.
DF16B-50DS-0.5V(***)	CL679-0025-9-***	50	18.0	15.8	12.0	17.8	16.8	15.4	—	27 pcs.
DF16B-60DS-0.5V(***)	CL679-0026-1-***	60	20.5	18.3	14.5	20.3	19.3	17.9	—	23 pcs.
DF16B-80DS-0.5V(***)	CL679-0028-7-***	80	25.5	23.3	19.5	25.3	24.3	22.9	—	19 pcs.

Board to Board 2.5mm Header With metal fitting



[Specific No.] -** , (**)
 (50) :Gold plating, tube packaging
 (51) :Gold plating, embossed tape packaging

Board to Board 2.5mm Header With metal fitting, With boss

Unit: mm

Product No.	HRS No.	Number of Contacts	A	B	C	D	E	Tube Packaging Quantity(pcs.)
DF16(2.5)-20DP-0.5V(**)	CL679-0082-2-***	20	8.2	4.5	8.0	6.8	5.9	59 pcs.
DF16(2.5)-30DP-0.5V(**)	CL679-0083-5-***	30	10.7	7.0	10.5	9.3	8.4	45 pcs.
DF16(2.5)-34DP-0.5V(**)	CL679-0089-1-***	34	11.7	8.0	11.5	10.3	9.4	42 pcs.
DF16(2.5)-40DP-0.5V(**)	CL679-0084-8-***	40	13.2	9.5	13.0	11.8	10.9	37 pcs.
DF16(2.5)-50DP-0.5V(**)	CL679-0085-0-***	50	15.7	12.0	15.5	14.3	13.4	31 pcs.
DF16(2.5)-60DP-0.5V(**)	CL679-0086-3-***	60	18.2	14.5	18.0	16.8	15.9	26 pcs.

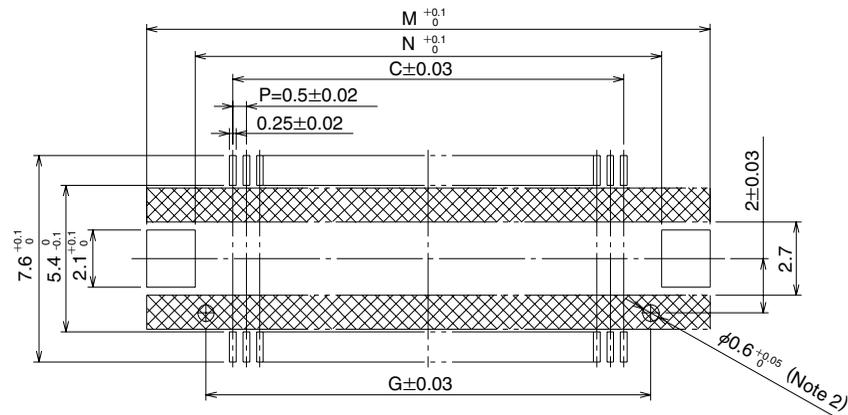
Board to Board 2.5mm Header With metal fitting, Without boss

Unit: mm

Product No.	HRS No.	Number of Contacts	A	B	C	D	E	Tube Packaging Quantity(pcs.)
DF16B(2.5)-20DP-0.5V(**)	CL679-0102-8-***	20	8.2	4.5	8.0	6.8	—	59 pcs.
DF16B(2.5)-30DP-0.5V(**)	CL679-0103-0-***	30	10.7	7.0	10.5	9.3	—	45 pcs.
DF16B(2.5)-34DP-0.5V(**)	CL679-0109-7-***	34	11.7	8.0	11.5	10.3	—	42 pcs.
DF16B(2.5)-40DP-0.5V(**)	CL679-0104-3-***	40	13.2	9.5	13.0	11.8	—	37 pcs.
DF16B(2.5)-50DP-0.5V(**)	CL679-0105-6-***	50	15.7	12.0	15.5	14.3	—	31 pcs.
DF16B(2.5)-60DP-0.5V(**)	CL679-0106-9-***	60	18.2	14.5	18.0	16.8	—	26 pcs.

Recommended PCB Footprints

Receptacle

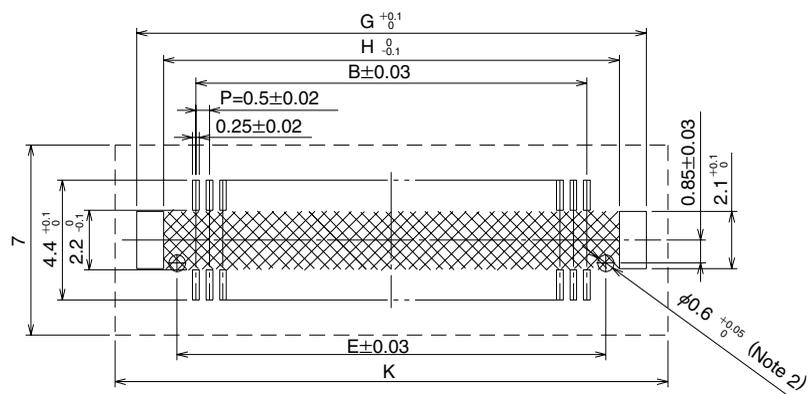


Note1: If the pattern is included in the shaded area, and is not treated with resist, it could touch the connector contact.

Note2: If the boss isn't included, the boss hole shown in the above isn't required.

Number of Contacts	C	G	M	N
14	3.0	5.0	9.4	5.8
20	4.5	6.5	10.9	7.3
30	7.0	9.0	13.4	9.8
34	8.0	10.0	14.4	10.8
40	9.5	11.5	15.9	12.3
50	12.0	14.0	18.4	14.8
60	14.5	16.5	20.9	17.3
80	19.5	21.5	25.9	22.3

Header (Board to Board 2.0, 2.5mm)



Note1: If the pattern is included in the shaded area, and is not treated with resist, it could touch the connector contact.

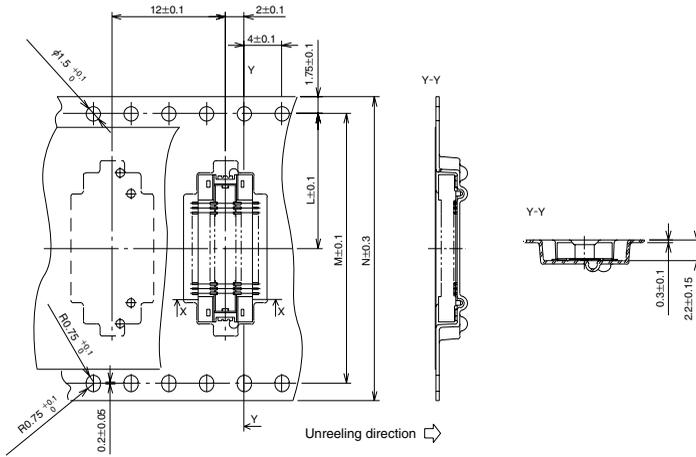
Note2: If the boss isn't included, the boss hole shown in the above isn't required.

Note3: Don't install any part in the shaded area. If installed, the connectors can't be mated with each other.

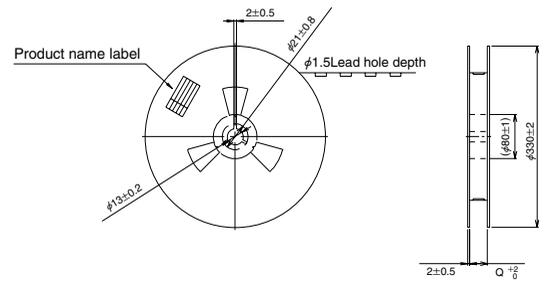
Number of Contacts	B	E	G	H	K
14	3.0	4.4	7.4	5.4	9.0
20	4.5	5.9	8.9	6.9	10.5
30	7.0	8.4	11.4	9.4	13.0
34	8.0	9.4	12.4	10.4	14.0
40	9.5	10.9	13.9	11.9	15.5
50	12.0	13.4	16.4	14.4	18.0
60	14.5	15.9	18.9	16.9	20.5
80	19.5	20.9	23.9	21.9	25.5

■ Embossed Carrier Tape Dimensions

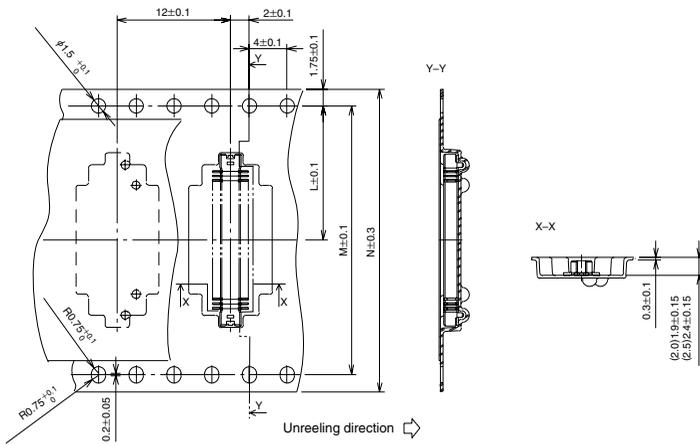
● Receptacle



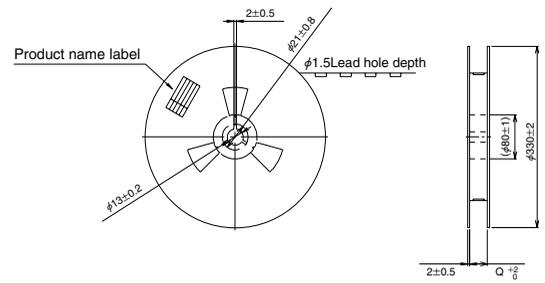
● Reel Dimensions



● Header

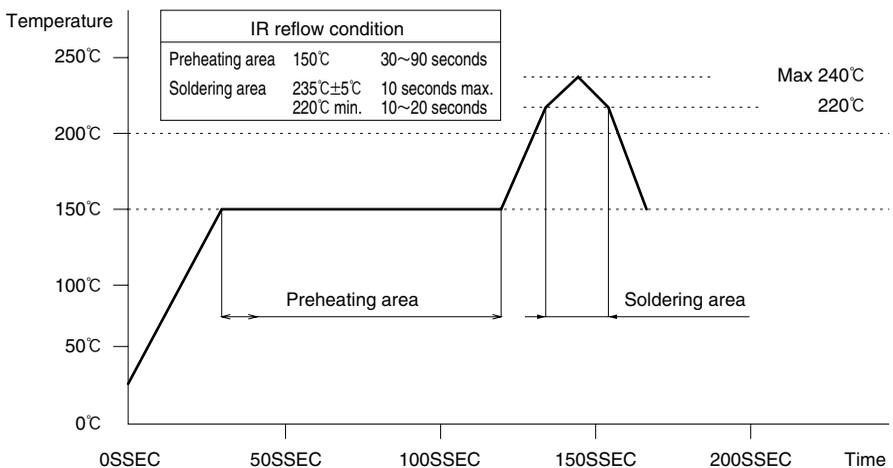


● Reel Dimensions



Product Name	N	M	L	Q
DF16#-14DS-0.5V	24.0	—	11.5	24.4
DF16#-20DS-0.5V	24.0	—	11.5	24.4
DF16#-30DS-0.5V	24.0	—	11.5	24.4
DF16#-34DS-0.5V	24.0	—	11.5	24.4
DF16#-40DS-0.5V	32.0	28.4	14.2	32.4
DF16#-50DS-0.5V	32.0	28.4	14.2	32.4
DF16#-60DS-0.5V	32.0	28.4	14.2	32.4
DF16#-80DS-0.5V	44.0	40.4	20.2	44.4
DF16#(2.0)-14DP-0.5V	16.0	—	7.5	16.4
DF16#(2.0)-34DP-0.5V	24.0	—	11.5	24.4
DF16#(2.0/2.5)-20DP-0.5V	16.0	—	7.5	16.4
DF16#(2.0/2.5)-30DP-0.5V	24.0	—	11.5	24.4
DF16#(2.0/2.5)-40DP-0.5V	24.0	—	11.5	24.4
DF16#(2.0/2.5)-50DP-0.5V	24.0	—	11.5	24.4
DF16#(2.0/2.5)-60DP-0.5V	32.0	28.4	14.2	32.4
DF16#(2.0/2.5)-80DP-0.5V	44.0	40.4	20.2	44.4

◆Precautions for Use

<p>1. Recommended Temperature Profile (SMT)</p>	 <p>Note1: Maximum two actions are allowed under the same condition. However, the interval between the first and second actions must be maintained at the room temperature.</p> <p>Note2: The temperature indicates the board surface temperature of the connector lead area.</p>
<p>2. Recommended Manual Soldering Condition (SMT)</p>	<p>Soldering iron temperature: $290\pm 10^{\circ}\text{C}$, Soldering time: Within 2 seconds</p>
<p>3. Recommended Screen Thickness (SMT)</p>	<p>0.15mm</p>
<p>4. Board Warp (SMT)</p>	<p>Maximum 0.2mm in the connector center area, based on the both connector edges</p>
<p>5. Cleaning Condition</p>	<p>Refer to the "Nylon Connector Instruction Manual".</p>
<p>6. Cautions</p>	<ul style="list-style-type: none"> ■ The header is designed in a structure where contacts are exposed. Touching it with bare hands would cause contact failure or electrostatic element damage. ■ Where no board is mounted, the insertion or extraction will cause damage or contact deformation. ■ Avoid retaining the board with the connector only, and fix the board by any other means than the connector. ■ Excessive scoop insertion or extraction may result in damage. ■ In the manual soldering process, don't carry out flux coating which will cause a flux blister on the connector. ■ The color phase of this product may be slightly different from that of the formed product according to the manufacturing lot. However, the difference doesn't affect the performance.