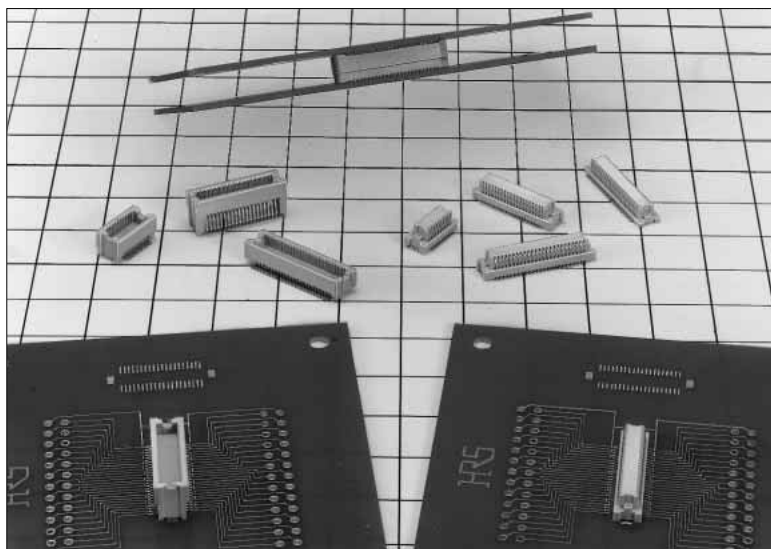


0.65mm Pitch SMT Board to Board Connector

DF15 Series



Corresponding to automatic mounting

The vacuum area is secured the automatic mounting machine for vacuum.

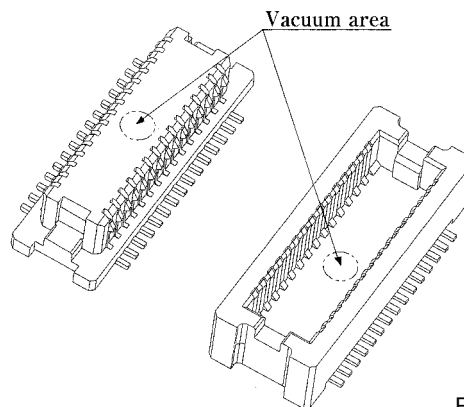


Figure 1

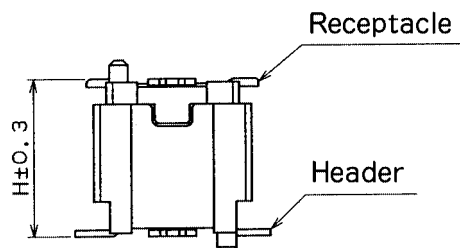
■Features

1. Compatibility of Miniaturization with Service Efficiency

This series considers the service efficiency to set the pitch to 0.65mm, corresponding to the 0.5mm pitch DF12 series. This connector widely covers the definition of the mounting space or the board to board size together with the DF12 series.

2. Broad Variations in Board to Board Size

The board to board size is specified at 1mm step between 4mm and 8mm.



Header/Receptacle	DF15#(0.8)-*DS-0.65V Combinnation with H size	DF15#(1.8)-*DS-0.65V Combinnation with H size
DF15#(3.2)-*DP-0.65V	4	5
DF15#(4.2)-*DP-0.65V	5	6
DF15#(6.2)-*DP-0.65V	7	8

Note1: The stacking height is determined by adding the header and receptacle to the figures followed by the product name DF15#.

Note2: The stacking height (H size) doesn't include the soldering paste thickness.

3. Correspond to Automatic Mounting

The connector has the vacuum area, which enables the automatic mounting by the embossed tape packaging.

4. Metal Fitting Available

The product including the metal fitting to prevent solder peeling is prepared, considering the mounting on FPC.

■Applications

Mobile phone, LCD(Liquid Crystal Display), MO(Optical Disk), Note PC

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

Note 1: Includes temperature rise caused by 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.

Product	Part	Material	Finish	Remarks
Receptacle	Insulator	Polyamide	Beige	UL94V-0
	Contact	Phosphor copper	Gold plated	_____
	Metal fitting	Brass	Tin plated	_____
Header	Insulator	Polyamide	Beige	UL94V-0
	Contact	Phosphor copper	Gold plated	_____
	Metal fitting	Brass	Tin plated	_____

■ Ordering Information

$$\frac{\text{DF15}}{①} \frac{\#}{②} \frac{(**)}{③} - \frac{*}{④} \frac{\text{DS}}{⑤} - \frac{0.65}{⑥} \frac{\text{V}}{⑦} \frac{(**)}{⑧}$$

① Series Name : DF15

② Type

	Fitting	Boss
Blank		
A	×	
B		×
C	×	×

③ Product height

Receptacle : 0.8, 1.8

Header : 3.2, 4.2, 6.2

④ Number of Contacts
20, 30, 40, 50

⑤ Connector Type

DS : Double-row receptacle

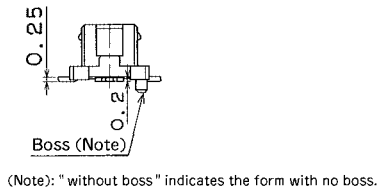
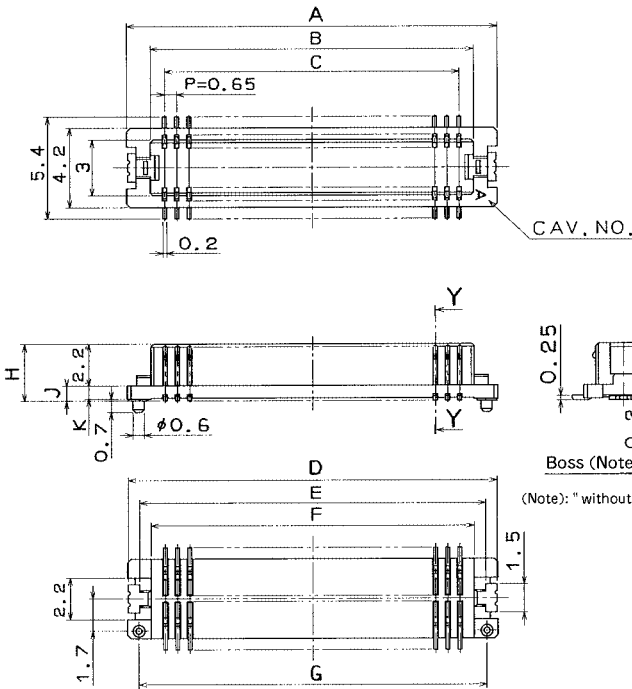
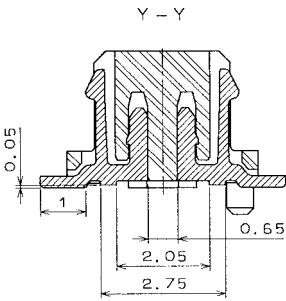
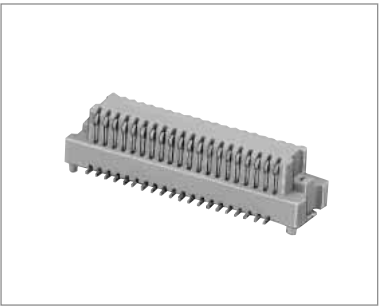
DP : Double-row header

⑥ Contact Pitch : 0.65mm

⑦ Contact type
V : Straight SMT type

⑧ (56) : Embossed tape packaging

■Receptacle With metal fitting



[Specific No.] -* *, (* *)
(56) :Gold plated embossed tape packaging

●Product Height: 0.8mm Product

Unit: mm

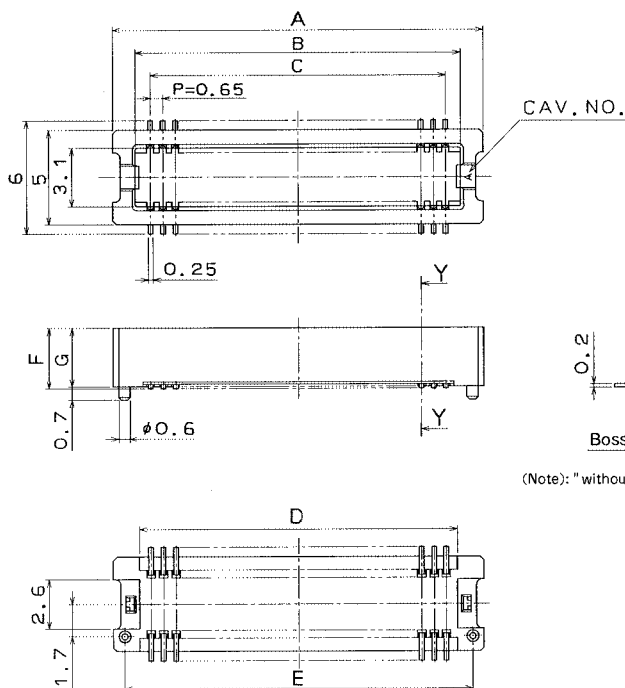
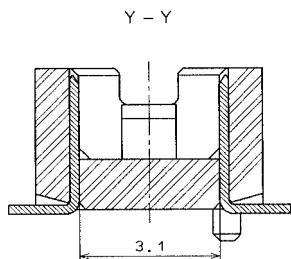
Part Number	CL No.	Number of Contacts	A	B	C	D	E	F	G	H	J	K	Remarks	RoHS
DF15 (0.8)-20DS-0.65V(56)	677-0002-0-56	20	9.85	7.35	5.85	9.65	8.45	7.35	8.65	3	0.8	0.7	With metal fitting With boss	YES
DF15 (0.8)-30DS-0.65V(56)	677-0003-3-56	30	13.10	10.6	9.1	12.9	11.7	10.6	11.9					
DF15 (0.8)-40DS-0.65V(56)	677-0004-6-56	40	16.35	13.85	12.35	16.15	14.95	13.85	15.15					
DF15 (0.8)-50DS-0.65V(56)	677-0005-9-56	50	19.60	17.1	15.6	19.4	18.2	17.1	18.4					
DF15B(0.8)-20DS-0.65V(56)	677-0022-8-56	20	9.85	7.35	5.85	9.65	8.45	7.35	-	3	0.8	0.7	With metal fitting Without boss	YES
DF15B(0.8)-30DS-0.65V(56)	677-0023-0-56	30	13.10	10.6	9.1	12.9	11.7	10.6	-					
DF15B(0.8)-40DS-0.65V(56)	677-0024-3-56	40	16.35	13.85	12.35	16.15	14.95	13.85	-					
DF15B(0.8)-50DS-0.65V(56)	677-0025-6-56	50	19.60	17.1	15.6	19.4	18.2	17.1	-					

●Product Height: 1.8mm Product

Unit: mm

Part Number	CL No.	Number of Contacts	A	B	C	D	E	F	G	H	J	K	Remarks	RoHS
DF15 (1.8)-20DS-0.65V(56)	677-0042-5-56	20	9.85	7.35	5.85	9.65	8.45	7.35	8.65	4	1.8	1.7	With metal fitting With boss	YES
DF15 (1.8)-30DS-0.65V(56)	677-0043-8-56	30	13.1	10.6	9.1	12.9	11.7	10.6	11.9					
DF15 (1.8)-40DS-0.65V(56)	677-0044-0-56	40	16.35	13.85	12.35	16.15	14.95	13.85	15.15					
DF15 (1.8)-50DS-0.65V(56)	677-0045-3-56	50	19.6	17.1	15.6	19.4	18.2	17.1	18.4					
DF15B(1.8)-20DS-0.65V(56)	677-0062-2-56	20	9.85	7.35	5.85	9.65	8.45	7.35	-	4	1.8	1.7	With metal fitting Without boss	YES
DF15B(1.8)-30DS-0.65V(56)	677-0063-5-56	30	13.1	10.6	9.1	12.9	11.7	10.6	-					
DF15B(1.8)-40DS-0.65V(56)	677-0064-8-56	40	16.35	13.85	12.35	16.15	14.95	13.85	-					
DF15B(1.8)-50DS-0.65V(56)	677-0065-0-56	50	19.6	17.1	15.6	19.4	18.2	17.1	-					

Note: Please order the embossed tape packaging product per reel. (1000 pcs./reel)



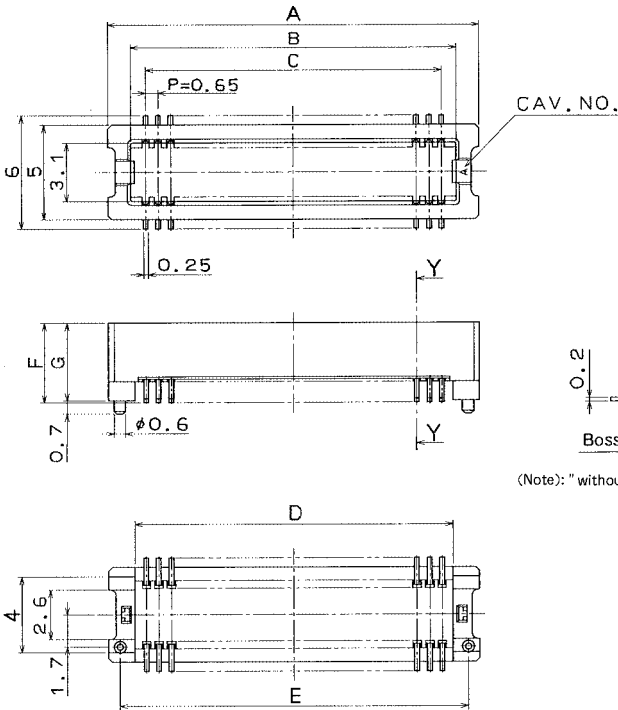
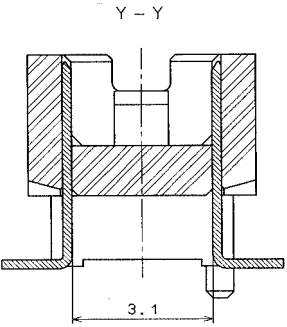
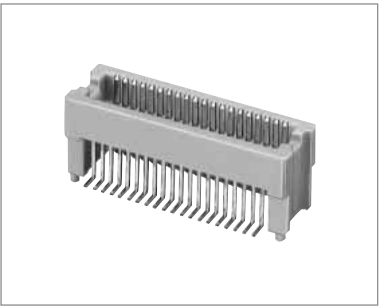
(Note): "without boss" indicates the form with no boss.

●Product Height: 3.2mm Product

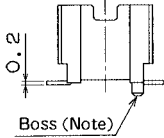
Part Number	CL No.	Number of Contacts	A	B	C	D	E	F	G	Remarks	RoHS
DF15A(3.2)-20DP-0.65V(56)	677-0092-3-56	20	9.85	7.45	5.85	7.05	8.65	3.2	3.1	Without metal fitting With boss	YES
DF15A(3.2)-30DP-0.65V(56)	677-0093-6-56	30	13.1	10.7	9.1	10.3	11.9				
DF15A(3.2)-40DP-0.65V(56)	677-0094-9-56	40	16.35	13.95	12.35	13.55	15.15				
DF15A(3.2)-50DP-0.65V(56)	677-0095-1-56	50	19.6	17.2	15.6	16.8	18.4				
DF15C(3.2)-20DP-0.65V(56)	677-0112-9-56	20	9.85	7.45	5.85	7.05	—	3.2	3.1	Without metal fitting Without boss	YES
DF15C(3.2)-30DP-0.65V(56)	677-0113-1-56	30	13.1	10.7	9.1	10.3	—				
DF15C(3.2)-40DP-0.65V(56)	677-0114-4-56	40	16.35	13.95	12.35	13.55	—				
DF15C(3.2)-50DP-0.65V(56)	677-0115-7-56	50	19.6	17.2	15.6	16.8	—				

Note: Please order the embossed tape packaging product per reel. (1000 pcs./reel)

Header Without metal fitting



CAV. NO.



(Note): "without boss" indicates the form with no boss.

[Specific No.] -* *, (* *)
(56) :Gold plated embossed tape packaging

Product Height: 4.2mm Product

Unit: mm

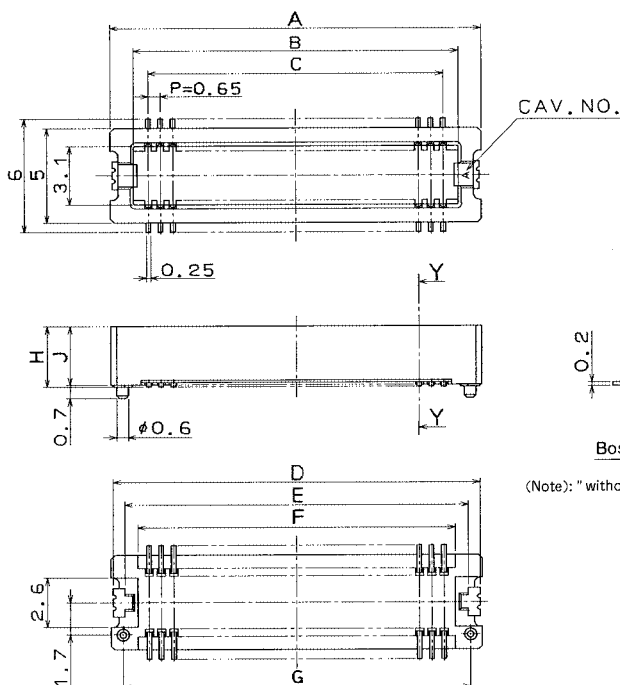
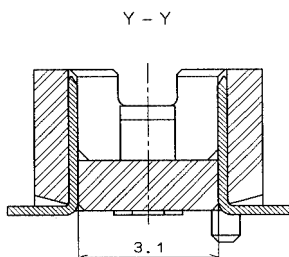
Part Number	CL No.	Number of Contacts	A	B	C	D	E	F	G	Remarks	RoHS
DF15A(4.2)-20DP-0.65V(56)	677-0132-6-56	20	9.85	7.45	5.85	7.05	8.65	4.2	4.1	Without metal fitting With boss	YES
DF15A(4.2)-30DP-0.65V(56)	677-0133-9-56	30	13.1	10.7	9.1	10.3	11.9				
DF15A(4.2)-40DP-0.65V(56)	677-0134-1-56	40	16.35	13.95	12.35	13.55	15.15				
DF15A(4.2)-50DP-0.65V(56)	677-0135-4-56	50	19.6	17.2	15.6	16.8	18.4				
DF15C(4.2)-20DP-0.65V(56)	677-0152-3-56	20	9.85	7.45	5.85	7.05	—	4.2	4.1	Without metal fitting Without boss	YES
DF15C(4.2)-30DP-0.65V(56)	677-0153-6-56	30	13.1	10.7	9.1	10.3	—				
DF15C(4.2)-40DP-0.65V(56)	677-0154-9-56	40	16.35	13.95	12.35	13.55	—				
DF15C(4.2)-50DP-0.65V(56)	677-0155-1-56	50	19.6	17.2	15.6	16.8	—				

Product Height: 6.2mm Product

Unit: mm

Part Number	CL No.	Number of Contacts	A	B	C	D	E	F	G	Remarks	RoHS
DF15A(6.2)-20DP-0.65V(56)	677-0172-0-56	20	9.85	7.45	5.85	7.05	8.65	6.2	6.1	Without metal fitting With boss	YES
DF15A(6.2)-30DP-0.65V(56)	677-0173-3-56	30	13.1	10.7	9.1	10.3	11.9				
DF15A(6.2)-40DP-0.65V(56)	677-0174-6-56	40	16.35	13.95	12.35	13.55	15.15				
DF15A(6.2)-50DP-0.65V(56)	677-0175-9-56	50	19.6	17.2	15.6	16.8	18.4				
DF15C(6.2)-20DP-0.65V(56)	677-0192-8-56	20	9.85	7.45	5.85	7.05	—	6.2	6.1	Without metal fitting Without boss	YES
DF15C(6.2)-30DP-0.65V(56)	677-0193-0-56	30	13.1	10.7	9.1	10.3	—				
DF15C(6.2)-40DP-0.65V(56)	677-0194-3-56	40	16.35	13.95	12.35	13.55	—				
DF15C(6.2)-50DP-0.65V(56)	677-0195-6-56	50	19.6	17.2	15.6	16.8	—				

Note: Please order the embossed tape packaging product per reel. (1000 pcs./reel)



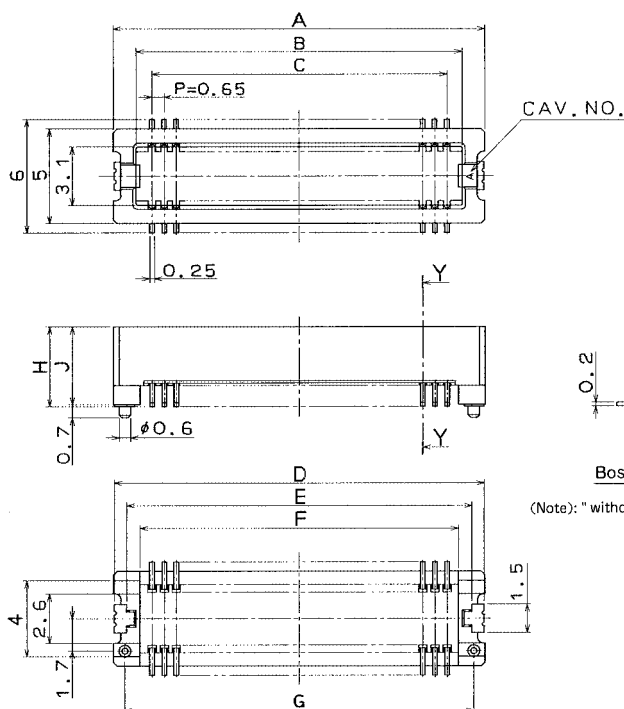
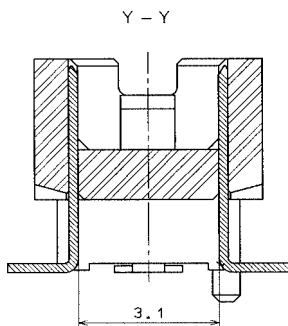
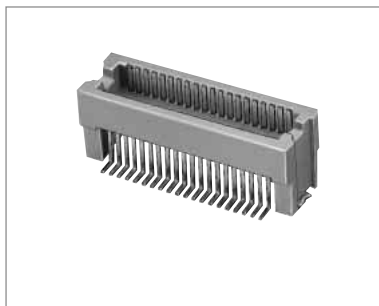
0.2
0.2
0.2
Boss (Note)

(Note): " without boss" indicates the form with no boss.

●Product Height: 3.2mm Product

Part Number	CL No.	Number of Contacts	A	B	C	D	E	F	G	H	J	Remarks	RoHS
DF15 (3.2)-20DP-0.65V(56)	677-0082-0-56	20	9.85	7.45	5.85	9.65	8.45	7.05	8.65	3.2	3.1	With metal fitting With boss	YES
DF15 (3.2)-30DP-0.65V(56)	677-0083-2-56	30	13.1	10.7	9.1	12.9	11.7	10.3	11.9				
DF15 (3.2)-40DP-0.65V(56)	677-0084-5-56	40	16.35	13.95	12.35	16.15	14.95	13.55	15.15				
DF15 (3.2)-50DP-0.65V(56)	677-0085-8-56	50	19.6	17.2	15.6	19.4	18.2	16.8	18.4				
DF15B(3.2)-20DP-0.65V(56)	677-0102-5-56	20	9.85	7.45	5.85	9.65	8.45	7.05	—	3.2	3.1	With metal fitting Without boss	YES
DF15B(3.2)-30DP-0.65V(56)	677-0103-8-56	30	13.1	10.7	9.1	12.9	11.7	10.3	—				
DF15B(3.2)-40DP-0.65V(56)	677-0104-0-56	40	16.35	13.95	12.35	16.15	14.95	13.55	—				
DF15B(3.2)-50DP-0.65V(56)	677-0105-3-56	50	19.6	17.2	15.6	19.4	18.2	16.8	—				

Note: Please order the embossed tape packaging product per reel. (1000 pcs./reel)



[Specific No.] - * *, (* *)
(56) : Gold plated embossed tape packaging

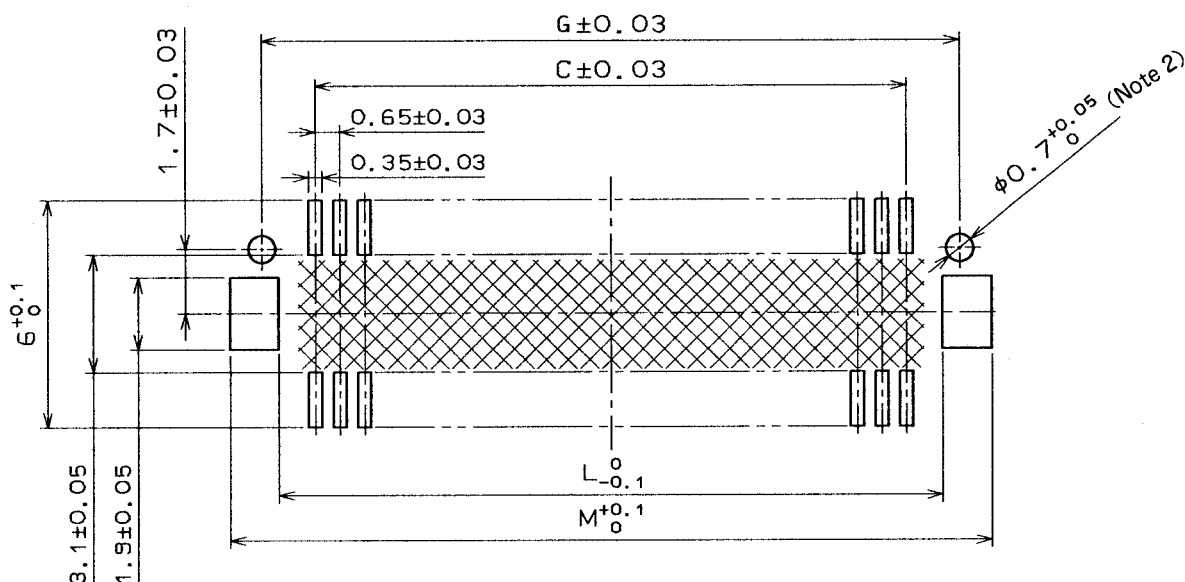
Part Number	CL No.	Number of Contacts	A	B	C	D	E	F	G	H	J	Remarks	RoHS
DF15 (4.2)-20DP-0.65V(56)	677-0122-2-56	20	9.85	7.45	5.85	9.65	8.45	7.05	8.65	4.2	4.1	With metal fitting With boss	YES
DF15 (4.2)-30DP-0.65V(56)	677-0123-5-56	30	13.1	10.7	9.1	12.9	11.7	10.3	11.9				
DF15 (4.2)-40DP-0.65V(56)	677-0124-8-56	40	16.35	13.95	12.35	16.15	14.95	13.55	15.15				
DF15 (4.2)-50DP-0.65V(56)	677-0125-0-56	50	19.6	17.2	15.6	19.4	18.2	16.8	18.4				
DF15B(4.2)-20DP-0.65V(56)	677-0142-0-56	20	9.85	7.45	5.85	9.65	8.45	7.05	—	4.2	4.1	With metal fitting Without boss	YES
DF15B(4.2)-30DP-0.65V(56)	677-0143-2-56	30	13.1	10.7	9.1	12.9	11.7	10.3	—				
DF15B(4.2)-40DP-0.65V(56)	677-0144-5-56	40	16.35	13.95	12.35	16.15	14.95	13.55	—				
DF15B(4.2)-50DP-0.65V(56)	677-0145-8-56	50	19.6	17.2	15.6	19.4	18.2	16.8	—				

Part Number	CL No.	Number of Contacts	A	B	C	D	E	F	G	H	J	Remarks	RoHS
DF15 (6.2)-20DP-0.65V(56)	677-0162-7-56	20	9.85	7.45	5.85	9.65	8.45	7.05	8.65	6.2	6.1	With metal fitting With boss	YES
DF15 (6.2)-30DP-0.65V(56)	677-0163-0-56	30	13.1	10.7	9.1	12.9	11.7	10.3	11.9				
DF15 (6.2)-40DP-0.65V(56)	677-0164-2-56	40	16.35	13.95	12.35	16.15	14.95	13.55	15.15				
DF15 (6.2)-50DP-0.65V(56)	677-0165-5-56	50	19.6	17.2	15.6	19.4	18.2	16.8	18.4				
DF15B(6.2)-20DP-0.65V(56)	677-0182-4-56	20	9.85	7.45	5.85	9.65	8.45	7.05	—	6.2	6.1	With metal fitting Without boss	YES
DF15B(6.2)-30DP-0.65V(56)	677-0183-7-56	30	13.1	10.7	9.1	12.9	11.7	10.3	—				
DF15B(6.2)-40DP-0.65V(56)	677-0184-0-56	40	16.35	13.95	12.35	16.15	14.95	13.55	—				
DF15B(6.2)-50DP-0.65V(56)	677-0185-2-56	50	19.6	17.2	15.6	19.4	18.2	16.8	—				

◆ Recommended PCB mounting pattern

(Unit: mm)

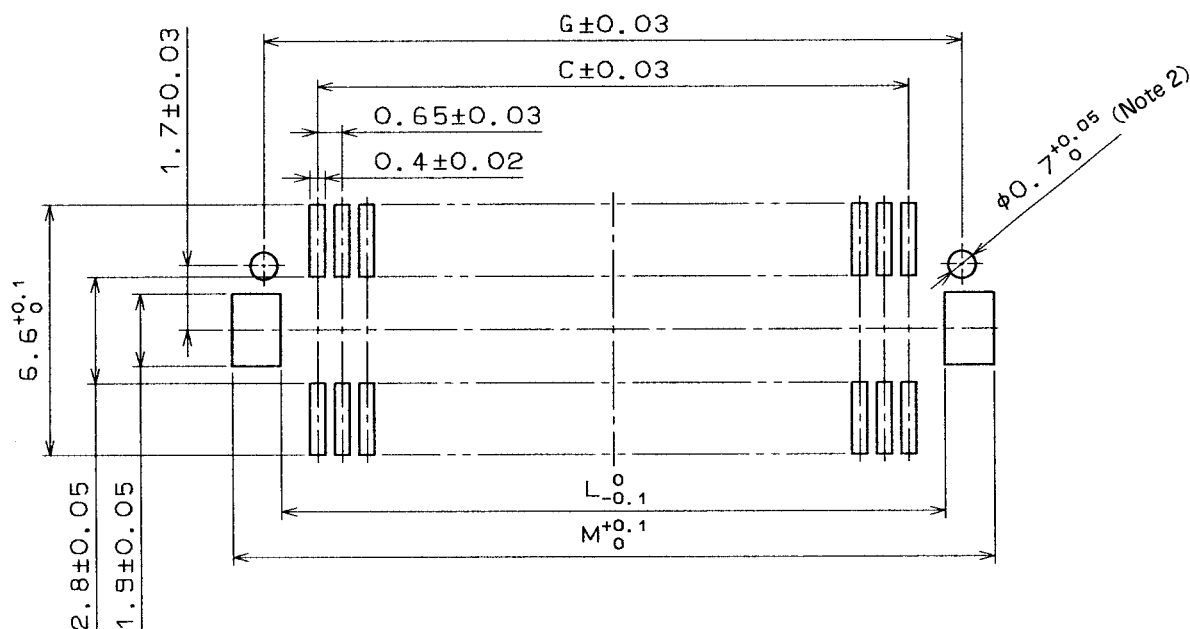
● Receptacle



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

● Header

(Unit: mm)

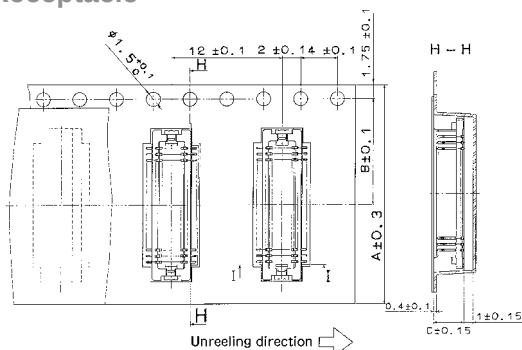


Unit: mm

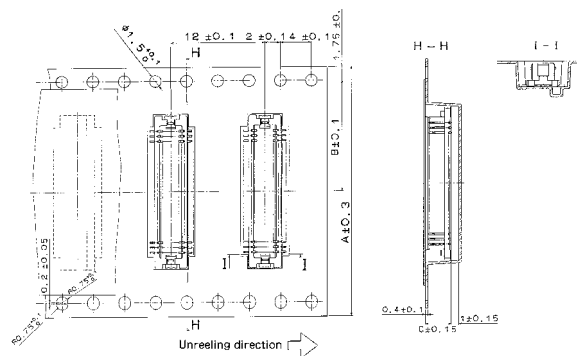
Number of Contacts	C	G	L	M
20	5.85	8.65	7.85	10.25
30	9.1	11.9	11.1	13.5
40	12.35	15.15	14.35	16.75
50	15.6	18.4	17.6	20

◆ Embossed Carrier Tape Dimensions

● Receptacle

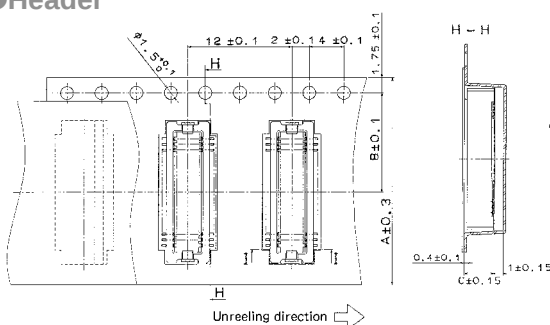


(20, 30, 40 contacts)

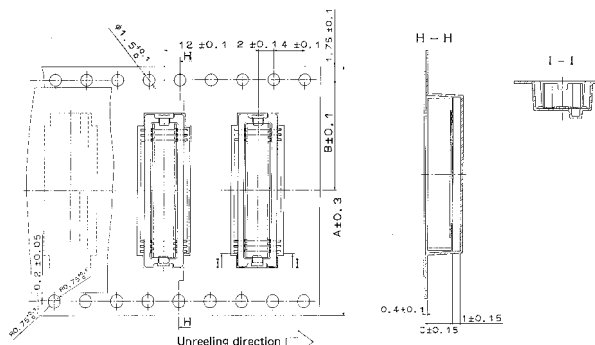


(50 contacts)

● Header

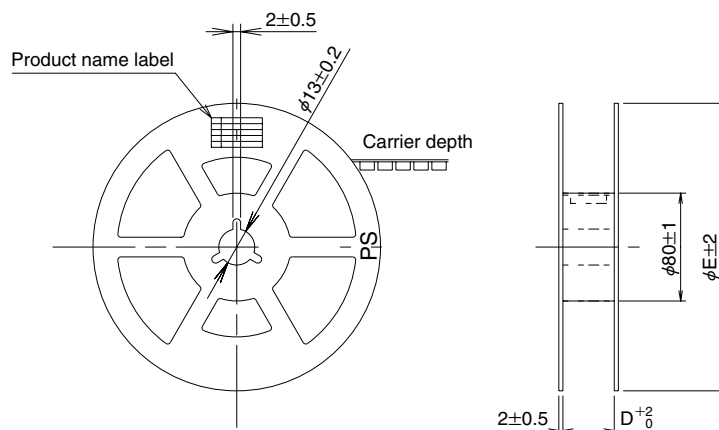


(20, 30, 40 contacts)



(50 contacts)

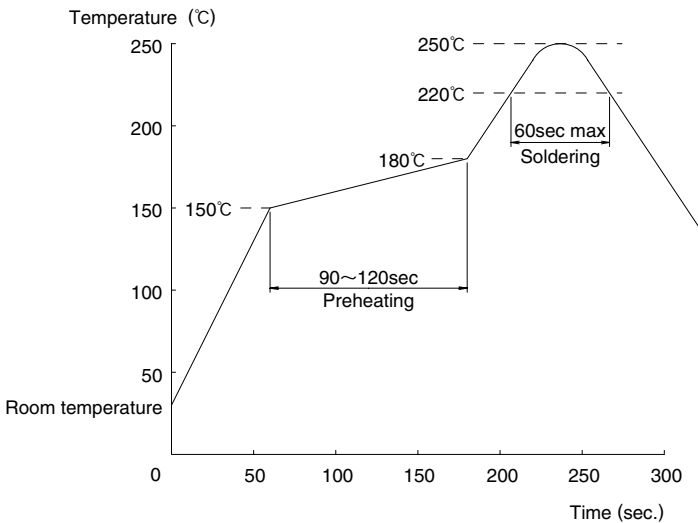
● Reel Dimensions



Unit:mm

Connector	A	B	C	D	E	Connector	A	B	C	D	E
DF15#(0.8)-20DS-0.65V	16	7.5	3.3	17.5	330	DF15#(3.2)-20DP-0.65V	16	7.5	3.5	17.5	330
DF15#(0.8)-30DS-0.65V	24	11.5	3.3	25.5		DF15#(3.2)-30DP-0.65V	24	11.5	3.5	25.5	
DF15#(0.8)-40DS-0.65V	24	11.5	3.3	25.5		DF15#(3.2)-40DP-0.65V	24	11.5	3.5	25.5	
DF15#(0.8)-50DS-0.65V	32	14.2	3.3	33.5		DF15#(3.2)-50DP-0.65V	32	14.5	3.5	33.5	
DF15#(1.8)-20DS-0.65V	16	7.5	4.3	17.5		DF15#(4.2)-20DP-0.65V	16	7.5	4.5	17.5	
DF15#(1.8)-30DS-0.65V	24	11.5	4.3	25.5		DF15#(4.2)-30DP-0.65V	24	11.5	4.5	25.5	
DF15#(1.8)-40DS-0.65V	24	11.5	4.3	25.5		DF15#(4.2)-40DP-0.65V	24	11.5	4.5	25.5	
DF15#(1.8)-50DS-0.65V	32	14.2	4.3	33.5		DF15#(4.2)-50DP-0.65V	32	14.5	4.5	33.5	
						DF15#(6.2)-20DP-0.65V	16	7.5	6.5	17.5	
						DF15#(6.2)-30DP-0.65V	24	11.5	6.5	25.5	
						DF15#(6.2)-40DP-0.65V	24	11.5	6.5	25.5	
						DF15#(6.2)-50DP-0.65V	32	14.5	6.5	33.5	

◆Precautions

1. Recommended Temperature Profile (SMT)	 Note1: 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. Note2: The temperature profile indicates the board surface temperature at the point of contacts with the connector terminals.
2. Recommended Manual Soldering Condition (SMT)	Soldering iron temperature: $350\pm 10^{\circ}\text{C}$, Soldering time: Within 3 seconds
3. Recommended Screen Thickness (SMT)	0.15mm
4. Board Warp (SMT)	Max 0.02mm in the connector center area, based on the both connector edges
5. Cleaning Condition	Refer to the "Nylon Connector Use Hand book".
6. Cautions	■The receptacle 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 deformation in the contacts. ■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 the 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.