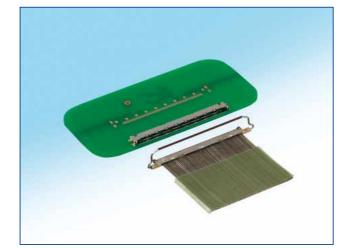
0.4 mm Pitch, Horizontal Mating, Board-to-Micro-Coaxial Cable Connector

DF81 Series



Features

1.Space saving design

Utilizing its 0.4 mm pitch, this horizontal connector offers a space saving design and a low height of 0.9 mm in a single row connector.

2. High speed transmissions

Designed to optimize transmission speeds, the DF81 series provides superior signal characteristics.

•eDP™ [Embedded DisplayPort™] Ver. 1.3 compatible 5.4 Gbps

•MIPI (D-PHY)

3.Enhanced shielding

Shielding capacity has increased by providing multiple grounding points (Fig.1).

4. Positive locking structure

The positive locking structure utilizes a rotary latch that prevents incomplete mating. (Fig.2)

5.Excellent mating operation

Excellent self-alignment allows for easier mating. (Fig.3)

6.Accepts both micro coaxial cable and discrete wire

Its versatility allows micro coaxial cable and discrete wire to be used together on a single connector.

7.Solder wicking prevention

Nickel barriers are strategically placed between the receptacle's contact area and the soldered lead area to prevent solder wicking.

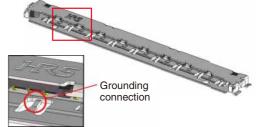
8.RoHS compliant, Halogen-free

Chlorine and bromine are not used in these connectors and do not exceed standard values. * It is defined according to IEC 61249-2-21.

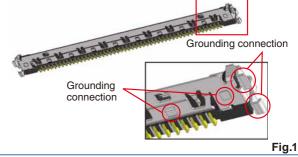
Br: 900 ppm or less, Cl: 900 ppm or less, Br + Cl: 1,500 ppm or less

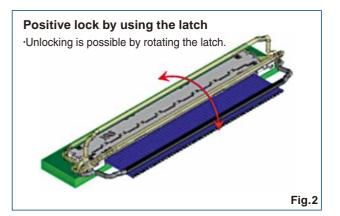
Enhanced shielding capability

-Grounding connection between plug connector and receptacle connector 30 contacts: 5 locations / 40 contacts: 7 locations / 50 contacts: 9 locations



-Grounding connection between receptacle connector and PCB 30 contacts: 10 locations / 40 contacts: 12 locations / 50 contacts: 14 locations







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Product specifications

Ratings	Rated Current	[Discrete wire] AWG #34: 0.3 A(MAX0.8 A) AWG #36: 0.3 A(MAX0.8 A) [Micro coaxial cable] AWG #36: 0.3 A(MAX0.8 A) AWG #40: 0.25 A AWG #42: 0.2 A AWG #44: 0.15 A AWG #44: 0.15 A	(Note 3) (Note 4)	Operating Temperature Range Operating Humidity Range	-35 to 85℃(Note 1) 20 to 80℃
	Rated 100 V AC/DC			Storage Temperature Range	-10 to 60℃ (Note 2)
	Voltage	100 V AC/DC		Storage Humidity Range	40 to 70°C(Note 2)

Items	Specifications	Conditions
1. Insulation Resistance 50 MΩ or greater		Measured at 100 V DC
2. Withstanding Voltage No flashover or breakdown		Conduct 250 V AC for one minute
3. Contact Resistance Signal: 80 m Ω or lower GND: 80 m Ω or lower		Measured at 100 mA (DC or 1,000 Hz)
4. Vibration Resistance	No electric outage of 1μ s or greater	10 cycles in each of three directions at frequency 10- 55 Hz, single amplitude 0.75 mm
5. Moisture Resistance	Contact resistance (amount of change from the initial state): 50 m Ω or lower Insulation resistance: 25 M Ω or greater	Temperature: 40± 2°C, Humidity: 90 to 95%, Leave 96 hours
6. Temperature Cycles	Contact resistance (amount of change from the initial state): 50 m Ω or lower Insulation resistance: 25 M Ω or greater	(-55°C: 30 minutes → 5 to 35°C: 2 to 3 minutes → 85°C: 30 minutes → 5 to 35°C: 2 to 3 minutes) 5 cycles
7. Mating Cycles	Contact resistance (amount of change from the initial state): 50 m Ω or lower	30 cycles
8. Solder Heat Resistance	There should be no dissolution of the resin part which will influence the performance.	Reflow: According to the Recommended Temperature Profile Hand soldering: Soldering iron temperature of 350°C for 3 seconds

(Note 1) Temperature rise at the time of electrification is included.

(Note 2) The term "storage" refers to the long-term storage of unused products in its original packaging before PCB mounting. Operating Temperature/Humidity Ranges are applied to the deenergized state after mounting of PCB and the temporary storage state during transportation.

(Note 3) Current will vary depending on use conditions. "MAX" is rating current as only two of them turn on electricity.

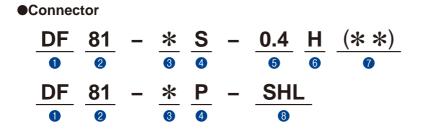
(Note 4) Rated current value is set only using the temperature rise value of the connector.

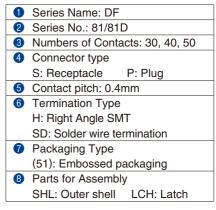
Materials

Product	Parts	Materials	Treatment	UL Recognition
	Insulator	LCP	Black	UL94V-0
Receptacle	Contact	Phosphor bronze	Gold plating	
	Metal fitting	Stainless steel	Partially gold plated	
	Insulator	LCP	Black	UL94V-0
Plug	Contact	Phosphor bronze	Gold plating	
	Outer shell	Stainless steel	Partially gold plated	
Shell	Outer shell	Stainless steel	Partially gold plated	
Latch Locking bar Sta		Stainless steel / polyester		

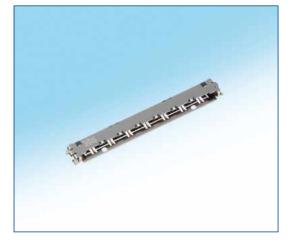
Product Number Structure

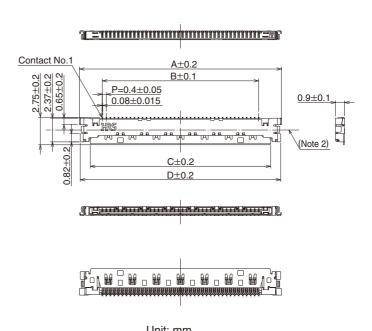
Refer to the chart below when searching for the part number nomenclature. Please make a selection from the connectors listed on pages 3 to 6 of this catalog when placing orders.





Receptacle (SMT)



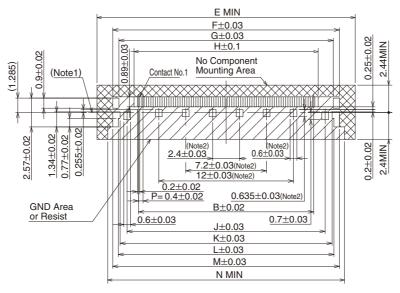


					,		
Product No.	HRS No.	No. of contacts	А	В	С	D	[Specification Number] -**, (**)
DF81-30S-0.4H(**)	662-8104-5 **	30	16.16	11.6	14	16	(51): Embossed packaging
DF81-40S-0.4H(**)	662-8100-4 **	40	20.16	15.6	18	20	
DF81-50S-0.4H(**)	662-8102-0 **	50	24.16	19.6	22	24	

(Note 1) Please place your orders for embossed packaged products in full reel quantities (8,000 connectors/reel).

(Note 2) Indicates the center line of the connector with the size of 2.37±0.2. This matches to the center line of the connector with the size of 2.57±0.02 shown in the recommended pattern schematic.

Recommended PCB mounting pattern

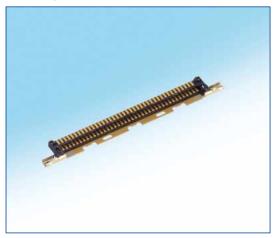


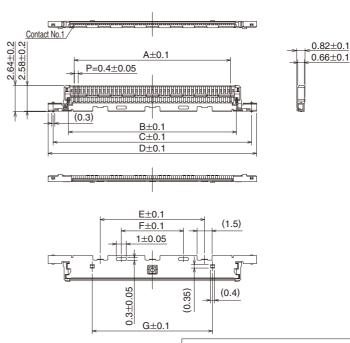
							I.				Ur	nit: mm
Product No.	HRS No.	No. of contacts	В	Е	F	G	Н	J	K	L	М	N
DF81-30S-0.4H(**)	662-8104-5 **	30	11.6	19	16.2	15.1	12.4	13.64	14.88	15.2	16.2	17.1
DF81-40S-0.4H(**)	662-8100-4 **	40	15.6	23	20.2	19.1	16.4	17.64	18.88	19.2	20.2	21.1
DF81-50S-0.4H(**)	662-8102-0 **	50	19.6	27	24.2	23.1	20.4	21.64	22.88	23.2	24.2	25.1

(Note 1) Indicates the center line of the connector with the size of 2.57±0.02. This matches to the center line of the connector with the size of 2.37±0.2 shown in the connector diagram.

(Note 2) The amount of space occupied depends on the pin count. This schematic represents the 40 contact connector.





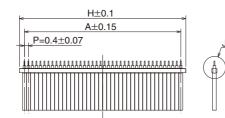


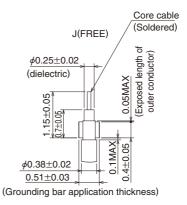
[Specification Number] -**, (**) (51): Embossed packaging

									U	nit: mm
Product No.	HRS No.	No. of contacts	А	В	С	D	Е	F	G	Н
DF81D-30P-0.4SD(51)	662-8119-2 51	30	11.6	12.76	15.8	16.8	4.4	8.4	7.2	12.6
DF81D-40P-0.4SD(51)	662-8120-1 51	40	15.6	16.76	19.8	20.8	10.4	6.2	12.0	16.6
DF81D-50P-0.4SD(51)	662-8122-7 51	50	19.6	20.76	23.8	24.8	14.4	10.2	16.8	20.6

(Note 1) Please place your orders for embossed packaged products in full reel quantities (8,000 connectors/reel). (Note 2) Outer shell (DF81-*P-SHL)/latch (DF81-*P-LCH) is required when connecting wires.

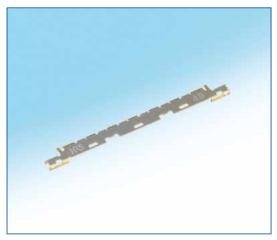
Recommended micro coaxial cable preparation

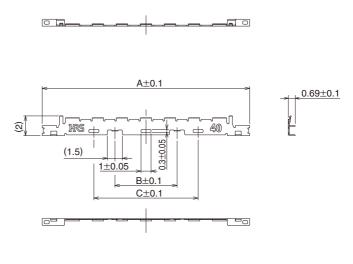


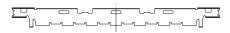


(Note 1) Lead free pre-soldering is required to center conductors before termination.

Outer shell





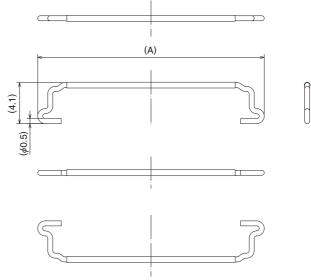


U	nit:	mm

					onia mini
Product No.	HRS No.	No. of contacts	А	В	С
DF81-30P-SHL	662-8106-0	30	16.7		6.4
DF81-40P-SHL	662-8108-6	40	20.7	6.2	10.4
DF81-50P-SHL	662-8112-3	50	24.7	10.2	14.4

(Note 1) Please place your orders in full reel quantities (10,000 shells/reel).

Latch



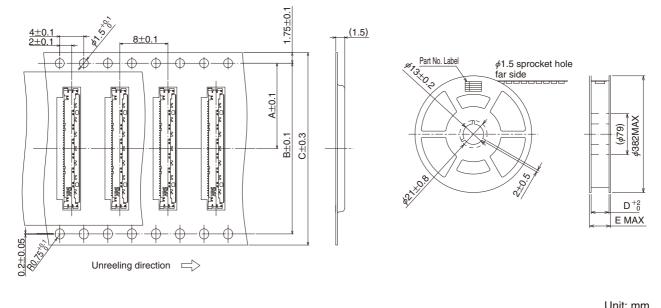
			Unit: mm
Product No.	HRS No.	No. of contacts	А
DF81-30P-LCH	662-8107-3	30	18.6
DF81-40P-LCH	662-8109-9	40	22.6
DF81-50P-LCH	662-8113-6	50	26.6

(Note 1) Please place your orders by full box quantities (10,000 latches/box).

Emboss tape dimensions (conforms to JIS C 0806)

Receptacle

Reel Condition Dimensions

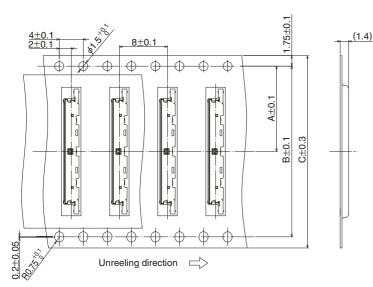


							Unit. mm
Product No.	HRS No.	No. of contacts	А	В	С	D	E
DF81-30S-0.4H(51)	662-8104-5 51	30	11.5		24	24.4	30.4
DF81-40S-0.4H(51)	662-8100-4 51	40	14.2	28.4	32	32.4	38.4
DF81-50S-0.4H(51)	662-8102-0 51	50	20.2	40.4	44	44.4	50.4

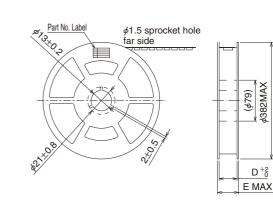
(Note 1)Sprocket hole for 30 contacts is provided only on one side.(Only a \$\phi1.5\$ hole on the top of the diagram)

Emboss Tape Dimensions

●Plug



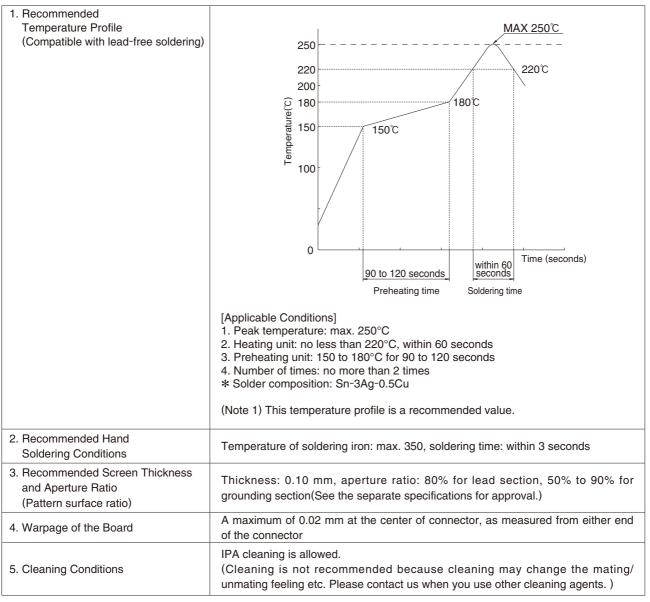
Reel Dimensions



							Unit: mm
Product No.	HRS No.	No. of contacts	А	В	С	D	E
DF81D-30P-0.4SD(51)	662-8119-2 51	30	11.5		24	24.4	30.4
DF81D-40P-0.4SD(51)	662-8120-1 51	40	14.2	28.4	32	32.4	38.4
DF81D-50P-0.4SD(51)	662-8122-7 51	50	20.2	40.4	44	44.4	50.4

(Note 1)Sprocket hole for 30 contacts is provided only on one side. (Only a ϕ 1.5 hole on the top of the diagram)

Precautions



Precautions when mating/ unmating

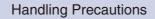
Handling Precautions

Inserting the connector

1.Latch position

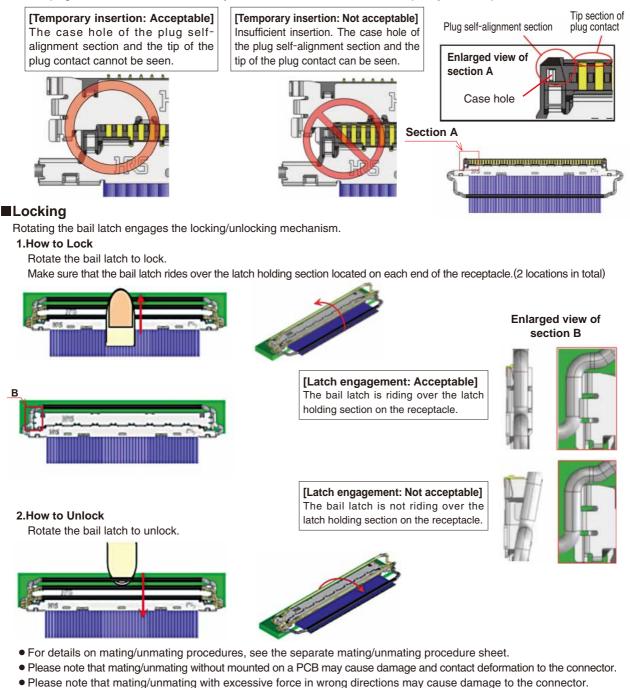
The latch needs to begin on the top side of the connector. If not, you will not be able to engage the locking mechanism and the mating process cannot be completed.





2.Temporary insertion

Position the plug so that it is parallel to the receptacle. Align the plug, and then gently insert the plug into the receptacle. The plug can now be inserted effortlessly until it reaches the bottom of the temporary insertion position.



• During hand soldering, do not apply flux which will cause flux migration on connector.



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

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 DF81-40P-SHL(52)
 DF81-40S-0.4H(52)
 DF81-30P-SHL

 0.4SD(52)
 DF81-40P-LCH(52)
 DF81D-40P-0.4SD(52)
 DF81-30P-SHL(52)
 DF81-50S-0.4H(52)