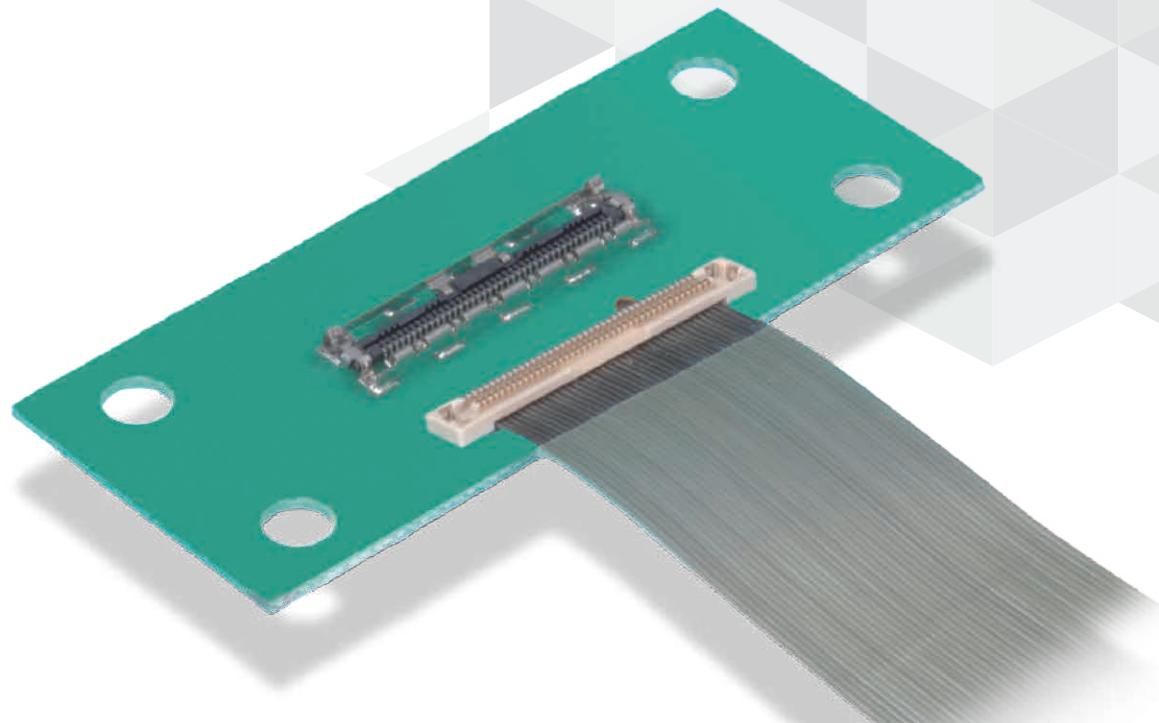


DF36 Series

0.4mm Pitch, Vertical Mating, Micro-Coaxial Cable Connector



Thin coaxial



P=0.5/1.0 mm



Vertical/ Side Cable

Алматы (7273)495-231
Ангарск (3955)60-70-56
Архангельск (8182)63-90-72
Астрахань (8512)99-46-04
Барнаул (3852)73-04-60
Белгород (4722)40-23-64
Благовещенск (4162)22-76-07
Брянск (4832)59-03-52
Владивосток (423)249-28-31
Владикавказ (8672)28-90-48
Владимир (4922)49-43-18
Волгоград (844)278-03-48
Вологда (8172)26-41-59
Воронеж (473)204-51-73
Екатеринбург (343)384-55-89

Иваново (4932)77-34-06
Ижевск (3412)26-03-58
Иркутск (395)279-98-46
Казань (843)206-01-48
Калининград (4012)72-03-81
Калуга (4842)92-23-67
Кемерово (3842)65-04-62
Киров (8332)68-02-04
Коломна (4966)23-41-49
Кострома (4942)77-07-48
Краснодар (861)203-40-90
Красноярск (391)204-63-61
Курск (4712)77-13-04
Курган (3522)50-90-47
Липецк (4742)52-20-81

Магнитогорск (3519)55-03-13
Москва (495)268-04-70
Мурманск (8152)59-64-93
Набережные Челны (8552)20-53-41
Нижний Новгород (831)429-08-12
Новокузнецк (3843)20-46-81
Ноябрьск (3496)41-32-12
Новосибирск (383)227-86-73
Омск (3812)21-46-40
Орел (4862)44-53-42
Оренбург (3532)37-68-04
Пенза (8412)22-31-16
Петрозаводск (8142)55-98-37
Псков (8112)59-10-37
Пермь (342)205-81-47

Ростов-на-Дону (863)308-18-15
Рязань (4912)46-61-64
Самара (846)206-03-16
Санкт-Петербург (812)309-46-40
Саратов (845)249-38-78
Севастополь (8692)22-31-93
Саранск (8342)22-96-24
Симферополь (3652)67-13-56
Смоленск (4812)29-41-54
Сочи (862)225-72-31
Ставрополь (8652)20-65-13
Сургут (3462)77-98-35
Сыктывкар (8212)25-95-17
Тамбов (4752)50-40-97
Тверь (4822)63-31-35

Тольятти (8482)63-91-07
Томск (3822)98-41-53
Тула (4872)33-79-87
Тюмень (3452)66-21-18
Ульяновск (8422)24-23-59
Улан-Удэ (3012)59-97-51
Уфа (347)229-48-12
Хабаровск (4212)92-98-04
Чебоксары (8352)28-53-07
Челябинск (351)202-03-61
Череповец (8202)49-02-64
Чита (3022)38-34-83
Якутск (4112)23-90-97
Ярославль (4852)69-52-93

Features

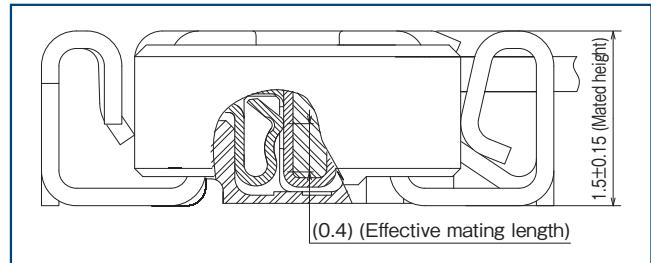
1. Support High Density Mounting and Small-Diameter Hinge

With a narrow pitch of 0.4 mm and a vertical mating, it is possible to make it space-saving and pass it easily through a small-diameter hinge.

Standard Type :
1.5mm Mated Height, Depth 4.4mm

Space-Saving Type :
1.5mm Mated Height, Depth 2.8mm

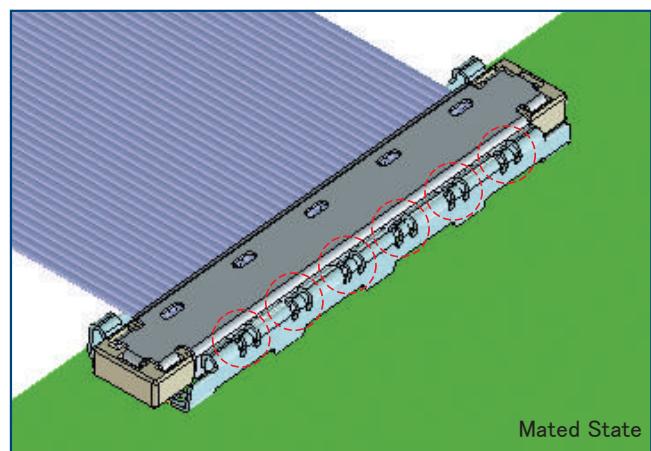
Plug :
1.33mm Height, Depth 2.8mm



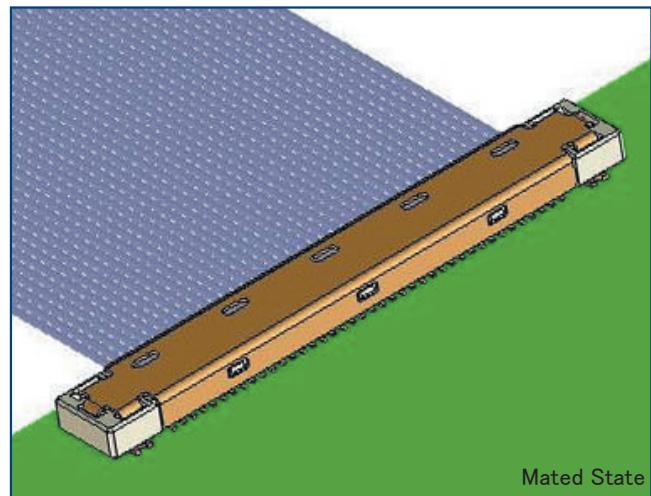
Highly Reliable Contact Design
(Effective Mating Length 0.4mm)

2. Enhanced Shield Performance

Enclose the connector with a metal exterior shell and connect the plug shell to the receptacle shell. Multi-point contact grounding spring is used for stable contact reliability.
(Ground springs are used only in the standard type.)



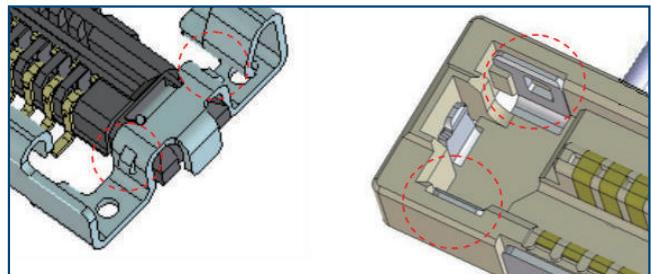
Standard Type



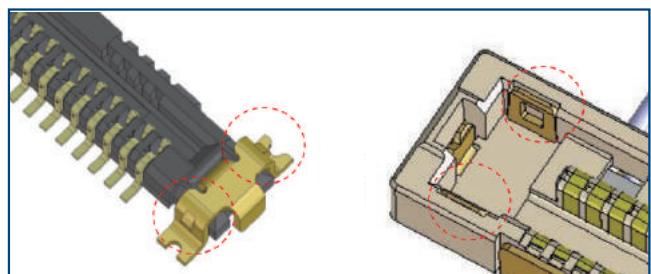
Space-Saving Type

3. Clickable and Secure Locking Design

The four-point locking design provides a clear click and excellent drop resistance.



4-Point Lock: 2 points at each end (standard type)



4-Point Lock: 2 points at each end (space-saving type)

4. Reliable Contact Design

Low profile with mated height of 1.5mm and effective mating length of 0.4mm.

The pinching contact design provides high contact reliability.

5. Solder Wicking Prevention

Mounting lead is 0.4 mm pitch for easy mounting, and despite its low profile, the nickel barrier prevents solder wicking.

6. Robust Plug Design

The plug is consisted to fold the metal shell and cover it from two directions, the top and front. While small size, it has a robust design.

7. RoHS2, Halogen-free Compliant

No chlorine or bromine exceeding the standard values are used in this connector.

*As defined by IEC61249-2-21

Br-900 ppm maximum, Cl-900 ppm maximum,
Cl+Br combined-1,500 ppm maximum

Product Specifications

Rated Current (Note 1)	42 AWG : 0.25A 44 AWG : 0.25A 46 AWG : 0.1A	Operating Temperature (Note 2)	-35 to +85°C
		Storage Temperature (Note 3)	-10 to +60°C
		Operating Humidity Range	20 to 80%
Rated Voltage	30V AC	Storage Humidity Range (Note 3)	40 to 70%

Item	Standards	Condition
Insulation Resistance	50M Ω Min.	Measured at 100V DC
Withstanding Voltage	No insulation breakdown	100V AC applied for 1 min.
Contact Resistance	Signal: 80m Ω Max. GND: 80m Ω Max.	100mA (0 or 1000 Hz) measurement
Vibration Resistance	No electrical discontinuity of 1 μ s or more	Frequency 10 to 55 Hz, half amplitude 0.75 mm, 10 cycles each in 3 directions
Humidity Resistance	Contact Resistance (amount of change from initial stage) 50m Ω Max., Insulation Resistance 25M Ω Min.	Temperature 40 ± 2°C, Humidity 90 to 95%, Left for 96 hours
Temperature Cycle	Contact Resistance (amount of change from initial stage) 50m Ω Max., Insulation Resistance 25M Ω Min.	(-55°C : 30 min. -- > 5 to 35°C : 2 to 3 min. -- > 85°C : 30 min. -- > 5 to 35°C : 2 to 3 min.) 5 cycles
Mating Durability	Contact Resistance (change from initial stage) 50m Ω Max.	30 times
Solder Heat Resistance	No dissolution or resin melting that will affect performance.	Reflow : Recommended in Temperature Profile Hand solder: Soldering Iron Temperature 350°C, 3 seconds

Note 1 : Only the temperature rise at the connector is included, not the cable temperature rise.

Note 2 : Includes temperature rise caused by current flow.

Note 3 : Storage refers to the long-term storage condition for unused products before the board mounting.

Operating temperature and humidity range apply when the product is not powered after PCB mounting and when temporarily stored during transportation.

Materials / Finish

Item	Component	Material	Color/Finish	Remarks
Receptacle (Standard Type)	Insulator	LCP	Black	UL94V-0
	Contact	Phosphorous Bronze	Gold Plating	-
	Retention Tab	Phosphorous Bronze	Tin Plating	-
Plug (Standard Type)	Insulator	LCP	Beige (Natural), Black	UL94V-0
	Contact	Phosphorous Bronze	Gold Plating	-
	Exterior Shell	Phosphorous Bronze	Tin Plating	-
Receptacle (Space-Saving Type)	Insulator	LCP	Black	UL94V-0
	Contact	Phosphorous Bronze	Gold Plating	-
	Retention Tab	Phosphorous Bronze	Gold Plating	-
Plug (Space-Saving Type)	Insulator	LCP	Beige (Natural), Black	UL94V-0
	Contact	Phosphorous Bronze	Gold Plating	-
	Exterior Shell	Phosphorous Bronze	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.

■ Connector

DF36 A - # S - 0.4 V (##)

① ② ③ ④ ⑤ ⑥ ⑦

DF36 A - # P - SHL

① ② ③ ④ ⑧

① Series Name	DF36	④ Connector Type	S: Receptacle P: Plug
② Shape Symbol	Receptacle/Shell A: Standard Type None: Space-Saving Type Plug None: Standard Type, Space-Saving Type	⑤ Contact Pitch	0.4mm
③ No. of Pos.	Standard Type: 15, 25, 30, 40, 45, 50 Space-Saving Type: 15, 20, 25	⑥ Termination Type	V : Straight SMT SD: Micro-Coaxial Plug
		⑦ Packing Type	(51): Embossed Packing (55): Embossed Packing
		⑧ Mounting Parts	SHL: Exterior Shell

Combinations

● Standard Use

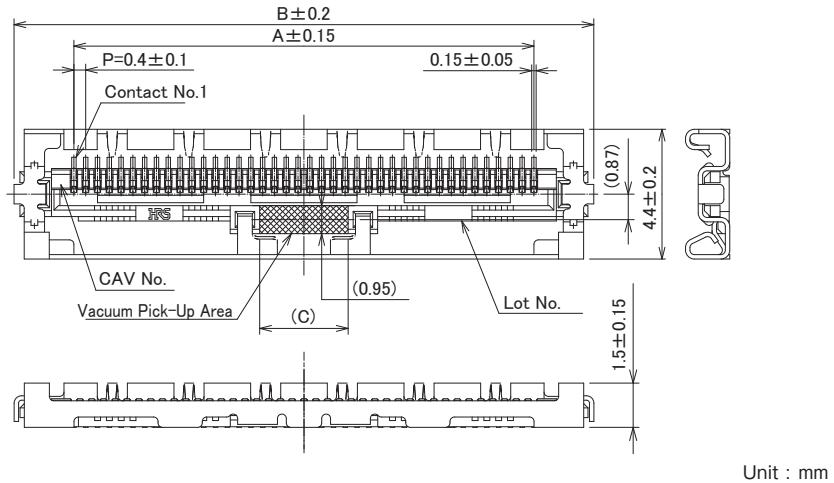
DF36(A)-#S-0.4V(##) + DF36(A)-#P-ASSY [DF36-#P-0.4SD(##) + DF36(A)-#P-SHL]

Note 1 : The product specification of the above combination is shown on Product Specifications.

Note 2 : ASSY shows harness items.

Receptacle (SMT)

● Standard Type

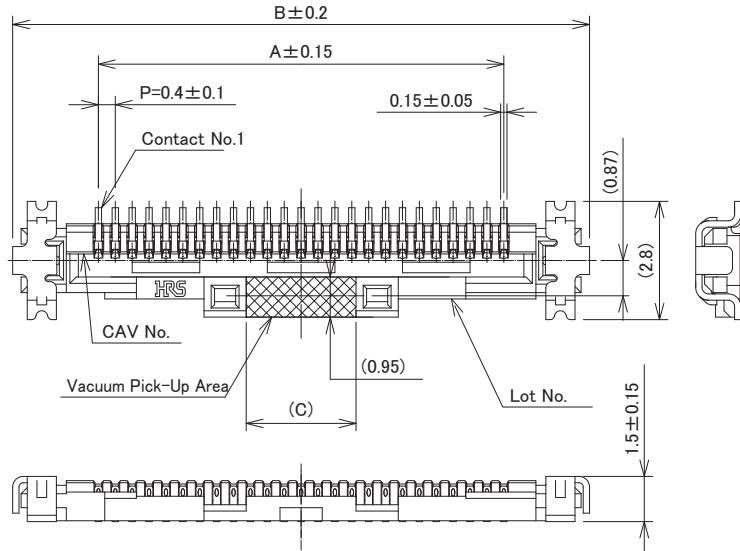


Part No.	HRS No.	No. of Pos.	A	B	C	Purchase Unit (#):(51)	Purchase Unit (#):(55)
DF36A-15S-0.4V(#)	CL0662-4509-5-##	15	5.6	9.66	2.6	4,000pcs per reel	500pcs per reel
DF36A-25S-0.4V(#)	CL0662-4011-4-##	25	9.6	13.66	2.6		
DF36A-30S-0.4V(#)	CL0662-4017-0-##	30	11.6	15.66	3		
DF36A-40S-0.4V(#)	CL0662-4003-6-##	40	15.6	19.66	3		
DF36A-45S-0.4V(#)	CL0662-4008-0-##	45	17.6	21.66	3		
DF36A-50S-0.4V(#)	CL0662-4043-0-##	50	19.6	23.66	3		

Note 1 : Please order embossed tape packaged items by the reel.

Note 2 : The 15 pos. does not have a lot stamp.

● Space-Saving Type

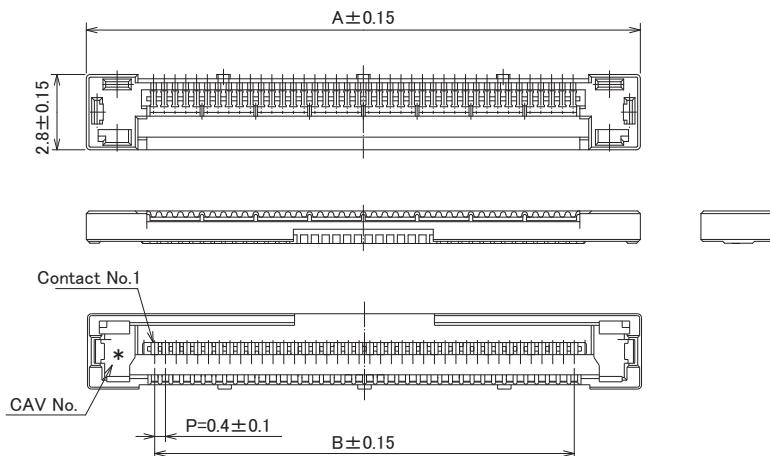


Part No.	HRS No.	No. of Pos.	A	B	C	Purchase Unit (#):(51)	Purchase Unit (#):(55)
DF36-15S-0.4V(#)	CL0662-4031-1-##	15	5.6	9.66	2.6	5,000pcs per reel	500pcs per reel
DF36-20S-0.4V(#)	CL0662-4039-3-##	20	7.6	11.66	2.6		
DF36-25S-0.4V(#)	CL0662-4005-1-##	25	9.6	13.66	2.6		

Note 1 : Please order embossed tape packaged items by the reel.

Note 2 : The 15 pos. does not have a lot stamp.

Plug



Unit : mm

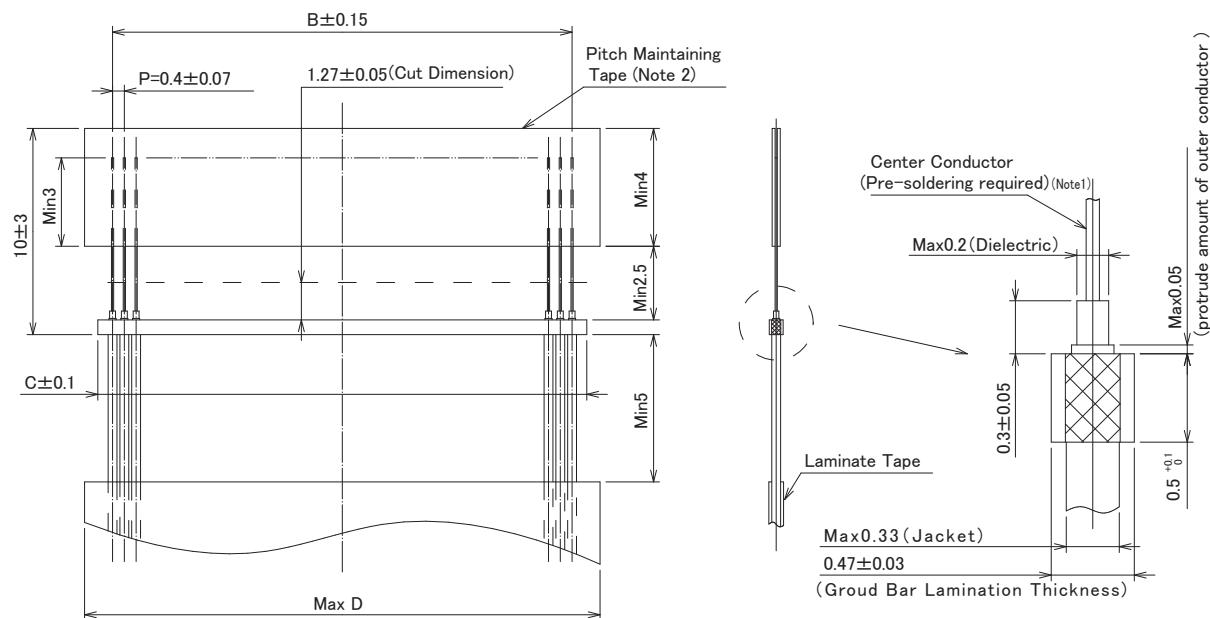
Part No.	HRS No.	No. of Pos.	A	B	C	D	Purchase Unit (##):(51)	Purchase Unit (##):(55)
DF36C-15P-0.4SD(##)	CL0662-4035-2##	15	11.4	5.6	6.6	7.5	5,000pcs per reel	500pcs per reel
DF36-20P-0.4SD(##)	CL0662-4040-2##	20	12.6	7.6	8.6	9.5		
DF36-25P-0.4SD(##)	CL0662-4006-4##	25	14.6	9.6	10.6	11.5		
DF36-30P-0.4SD(##)	CL0662-4018-3##	30	16.6	11.6	12.6	13.5		
DF36-40P-0.4SD(##)	CL0662-4002-3##	40	20.6	15.6	16.6	17.5		
DF36-45P-0.4SD(##)	CL0662-4009-2##	45	22.6	17.6	18.6	19.5	4,000pcs per reel	-
DF36-50P-0.4SD(##)	CL0662-4044-3##	50	24.6	19.6	20.6	21.5	5,000pcs per reel	500pcs per reel

Note 1 : Please order embossed tape packaged items by the reel.

Note 2 : An exterior Shell (DF36(A)-#P-SHL) is required for wire connection.

Compatible exterior shell is Tin plating for standard type and Gold plating for space-saving type.

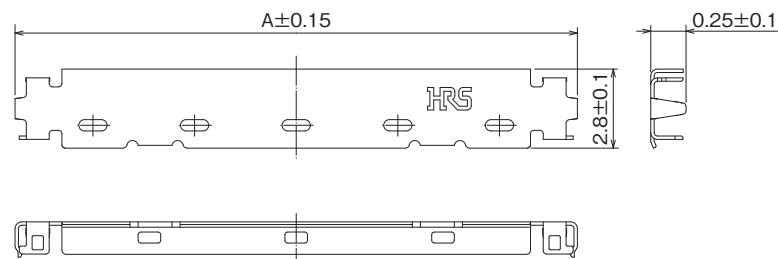
■ Recommended Fine Coaxial Cable Preparation



Note 1 : Center conductor requires pre-soldering (lead-free).

Note 2 : The taping of the tip is an example.

Exterior Shell



Standard Type

Part No.	HRS No.	Plating	No. of Pos.	A	Purchase Unit	Unit : mm
DF36A-15P-SHL	CL0662-4511-7-00	Tin	15	9.92	10,000pcs per reel	
DF36A-25P-SHL	CL0662-4007-7-00		25	13.92		
DF36A-30P-SHL	CL0662-4019-6-00		30	15.92		
DF36A-40P-SHL	CL0662-4013-0-00		40	19.92		
DF36A-45P-SHL	CL0662-4010-1-00		45	21.92		
DF36A-50P-SHL	CL0662-4045-6-00		50	23.92		

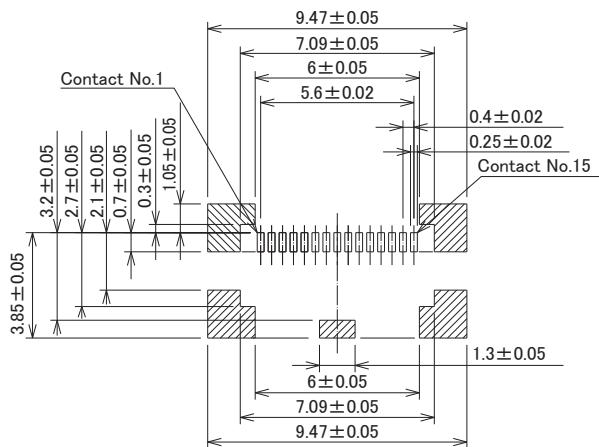
Space-Saving Type

Part No.	HRS No.	Plating	No. of Pos.	A	Purchase Unit	Unit : mm
DF36-15P-SHL	CL0662-4026-1-00	Gold	15	9.92	10,000pcs per reel	
DF36-20P-SHL	CL0662-4041-5-00		20	11.92		
DF36-25P-SHL	CL0662-4012-7-00		25	13.92		

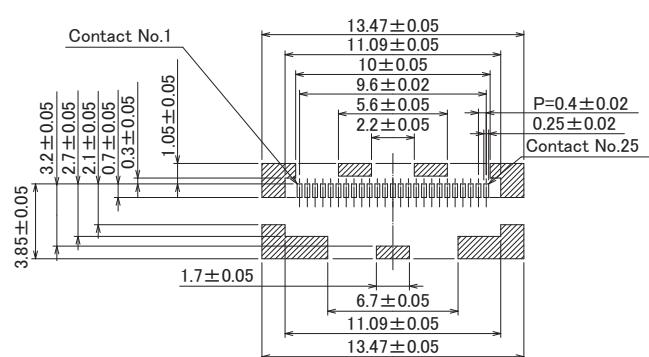
Recommended PCB Pattern

Standard Type

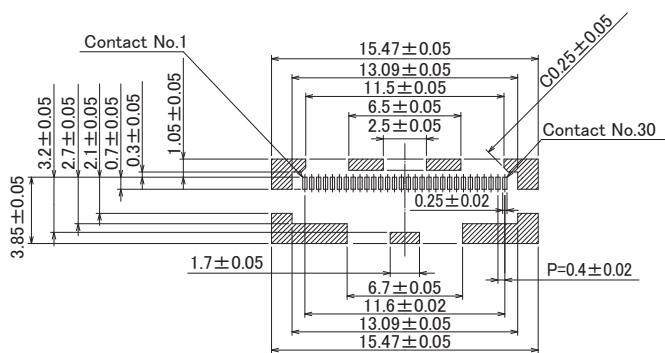
● 15pos.



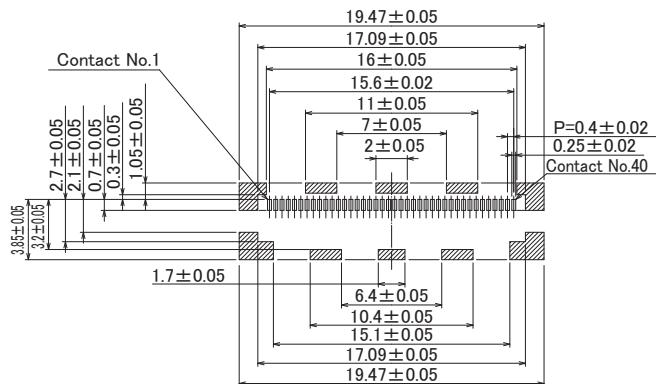
● 25pos.



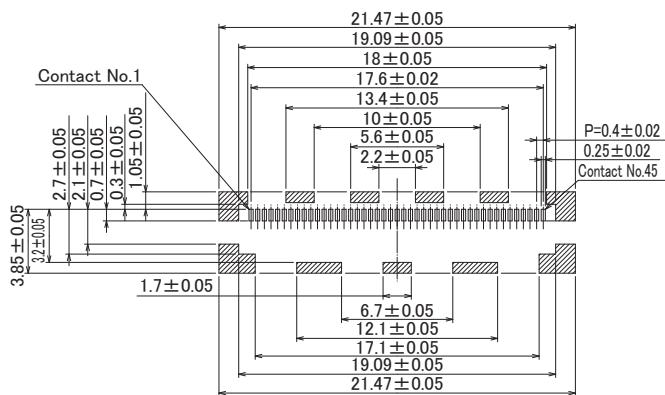
● 30pos.



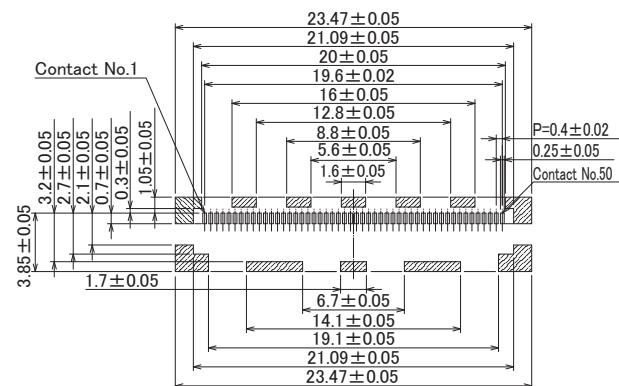
● 40pos.



● 45pos.

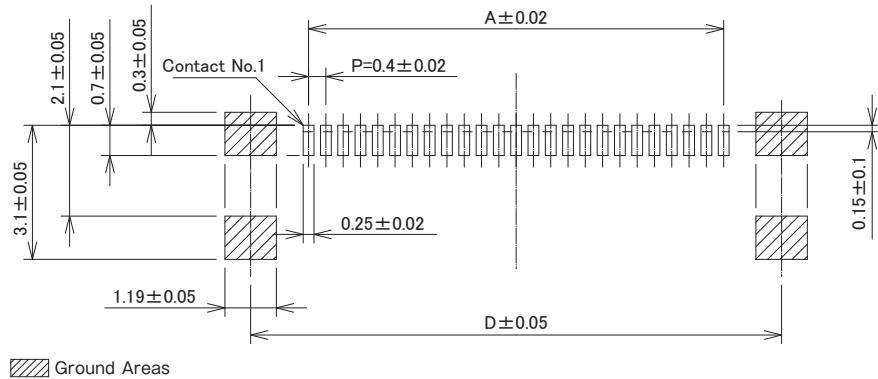


● 50pos.



Ground Areas

Space-Saving Type



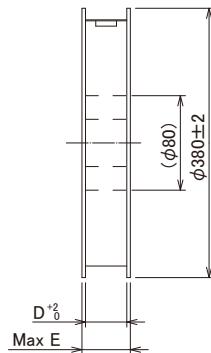
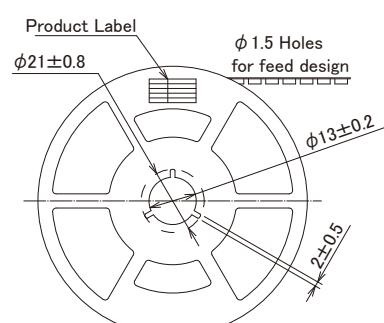
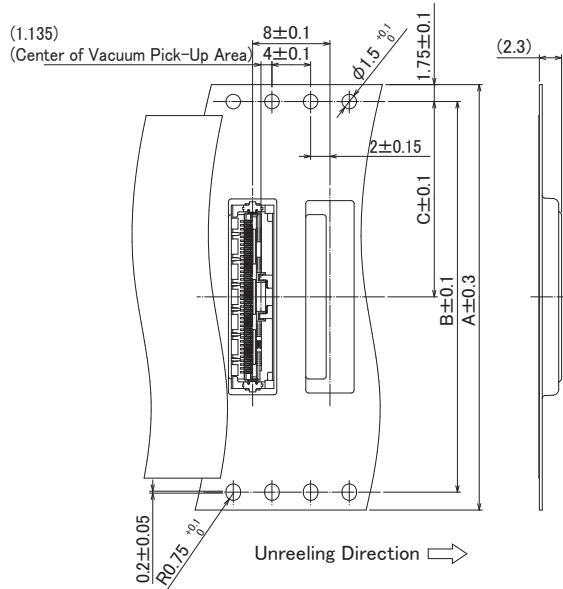
Unit : mm						
Part No.	HRS No.	No. of Pos.	A	D	Purchase Unit (#):(51)	Purchase Unit (#):(55)
DF36-15S-0.4V(##)	CL0662-4031-1-##	15	5.6	8.28	5,000pcs per bag	500pcs per bag
DF36-20S-0.4V(##)	CL0662-4039-3-##	20	7.6	10.28		
DF36-25S-0.4V(##)	CL0662-4005-1-##	25	9.6	12.28		

Packaging Specifications Diagram (IEC 60286 Compliant)

Receptacle (Standard Type)

- Embossed Carrier Tape Dimensions

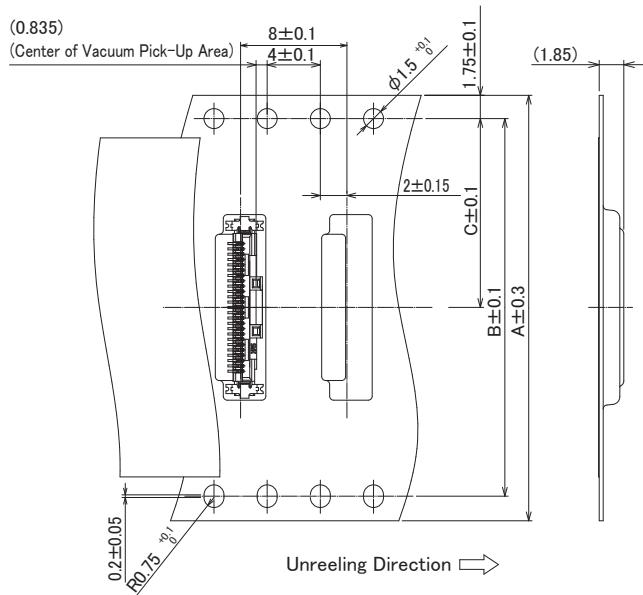
● Reel Dimensions



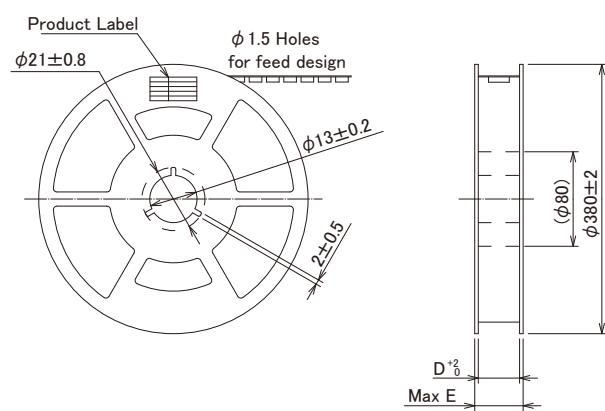
Part No.	HRS No.	No. of Pos.	A	B	C	D	E	Purchase Unit (#):(51)	Purchase Unit (#):(55)
DF36A-15S-0.4V(##)	CL0662-4509-5-##	15	32	28.4	14.2	32.4	38.4	4,000pcs per bag	500pcs per bag
DF36A-25S-0.4V(##)	CL0662-4011-4-##	25	32	28.4	14.2	32.4	38.4		
DF36A-30S-0.4V(##)	CL0662-4017-0-##	30	32	28.4	14.2	32.4	38.4		
DF36A-40S-0.4V(##)	CL0662-4003-6-##	40	44	40.4	20.2	44.4	50.4		
DF36A-45S-0.4V(##)	CL0662-4008-0-##	45	44	40.4	20.2	44.4	50.4		
DF36A-50S-0.4V(##)	CL0662-4043-0-##	50	44	40.4	20.2	44.4	50.4		

Receptacle (Space-Saving Type)

● Embossed Carrier Tape Dimensions



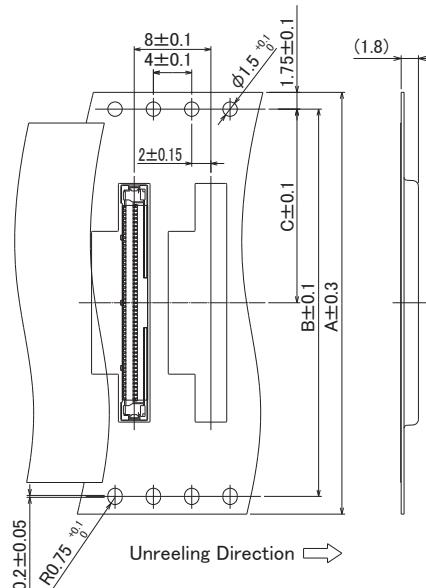
● Reel Dimensions



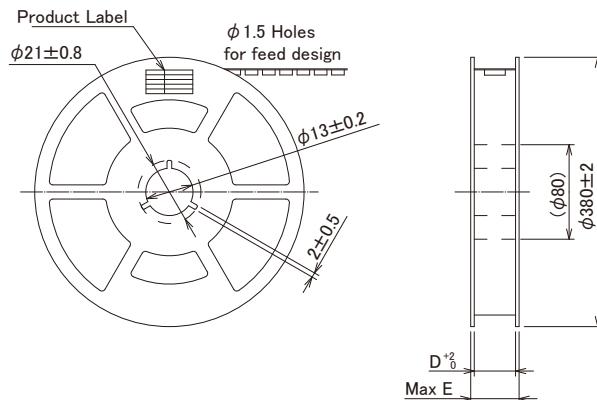
Part No.	HRS No.	No. of Pos.	A	B	C	D	E	Purchase Unit (##):(51)	Purchase Unit (##):(55)
DF36-15S-0.4V(##)	CL0662-4031-1-##	15	32	28.4	14.2	32.4	38.4	5,000pcs per bag	500pcs per bag
DF36-20S-0.4V(##)	CL0662-4039-3-##	20	32	28.4	14.2	32.4	38.4		
DF36-25S-0.4V(##)	CL0662-4005-1-##	25	32	28.4	14.2	32.4	38.4		

Plug

● Embossed Carrier Tape Dimensions



● Reel Dimensions



Part No.	HRS No.	No. of Pos.	A	B	C	D	E	Purchase Unit (#):(51)	Purchase Unit (#):(55)
DF36C-15P-0.4SD(#)	CL0662-4035-2-##	15	32	28.4	14.2	14.2	32.4		
DF36-20P-0.4SD(#)	CL0662-4040-2-##	20	32	28.4	14.2	14.2	32.4		
DF36-25P-0.4SD(#)	CL0662-4006-4-##	25	32	28.4	14.2	14.2	32.4	5,000pcs per reel	500pcs per reel
DF36-30P-0.4SD(#)	CL0662-4018-3-##	30	32	28.4	14.2	14.2	32.4		
DF36-40P-0.4SD(#)	CL0662-4002-3-##	40	44	40.4	20.2	20.2	44.4		
DF36-45P-0.4SD(#)	CL0662-4009-2-##	45	44	40.4	20.2	20.2	44.4	4,000pcs per reel	-
DF36-50P-0.4SD(#)	CL0662-4044-3-##	50	44	40.4	20.2	20.2	44.4	5,000pcs per reel	500pcs per reel

Extraction Tool

For details about the extraction tool, please contact your Hirose sales representative.

Temperature Profile

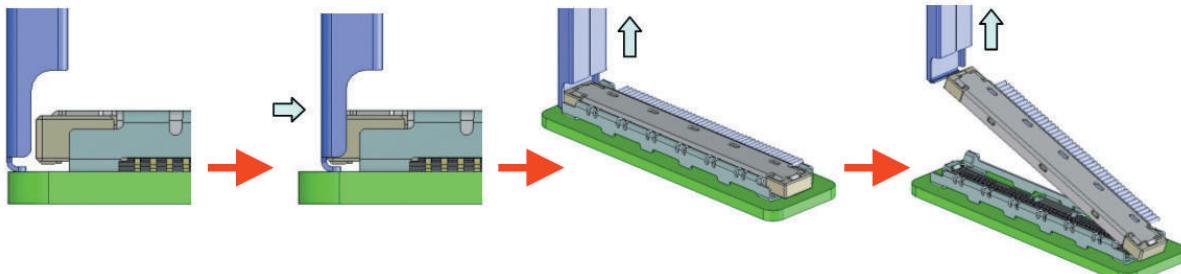
Recommended Temperature Profile (Lead-Free Mounting)	
	<p>【Conditions】</p> <ol style="list-style-type: none"> 1. Peak Temperature : 250°C Max. 2. Heating : 220°C Min., within 60sec. 3. Preheating : 150 to 180°C , 90 to 120sec. 4. Number of Reflow Cycles : 2 cycles Max. <p>*Solder Composition : Sn-3Ag-0.5Cu</p>
	<p>Note : Temperature refers to the surface temperature of the board near the connector lead.</p>
Recommended Manual Soldering Conditions	Soldering iron temperature : 350°C Max., Soldering Time : Within 3 sec.
Recommended Metal Mask Thickness and Open Area to PCB Pattern (Area Ratio)	<p>Standard Type Thickness : 0.1mm / Aperture Ratio : Lead Part 90%, Ground Part 100%</p> <p>Space-Saving Type Thickness : 0.1mm / Aperture Ratio : Lead Part 90%, Ground Part 90%</p>
Board Warpage	Max. of 0.02mm at the center in reference to both ends of the connector.
Cleaning	<p>Cleaning is not recommended.</p> <p>If you clean this product, please evaluate its performance before using it.</p> <p>(Cleaning may impair the mating/unmating properties and lower resistance to environmental factors.)</p>

Connector Operation and Precautions

Connector Mating / Unmating

[Standard Type]

- When inserting a plug, push the entire plug surface straight and insert.
Please note that holding the wire when inserting may cause diagonal insertion and may cause broken etc.
- To remove the plug, use a special pulling jig and pull it straight upward as shown below.
Do not remove the cable by holding wire, as it may cause cable disconnection, connector broken, etc.



DF56 Series

0.3mm Pitch, Vertical Mating, Micro-Coaxial Connectors



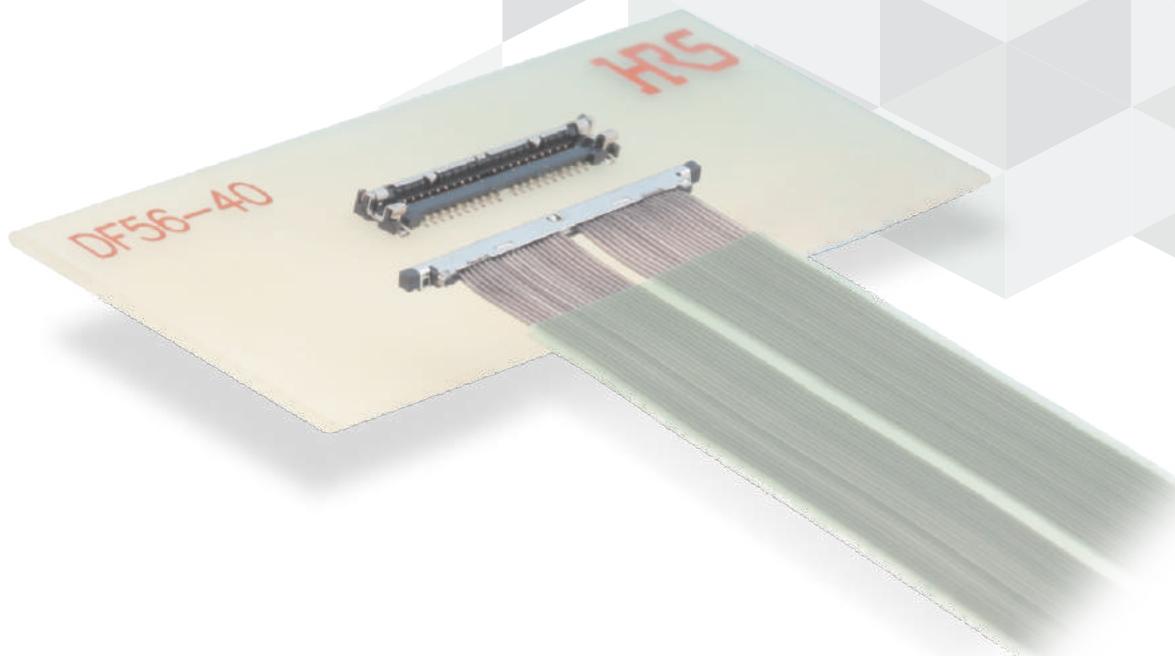
Thin coaxial



$P =$
0.3
mm



P = 0.3mm
Vertical



Features

1. Space-Saving

Small pitch (0.3mm) and vertical mated allow to use in space-restricted areas.

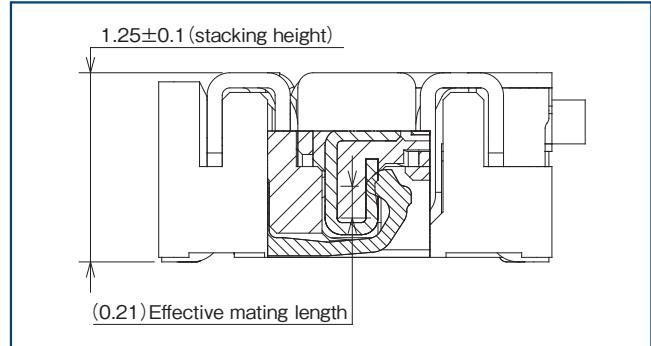
It's a small connector with mated height of 1.25mm (1.35mm Max.) and depth of 2.6mm.

2. Compatibility with Small Diameter Hinges

44 AWGx40 are compatible with hinge diameters of $\phi 2.8\text{mm}$, which allows wiring in small hinge inside devices.

3. Reliable Contact Design

Despite its small mated height, unique contact configuration assures highly reliable connection, with effective mating length of 0.21mm.

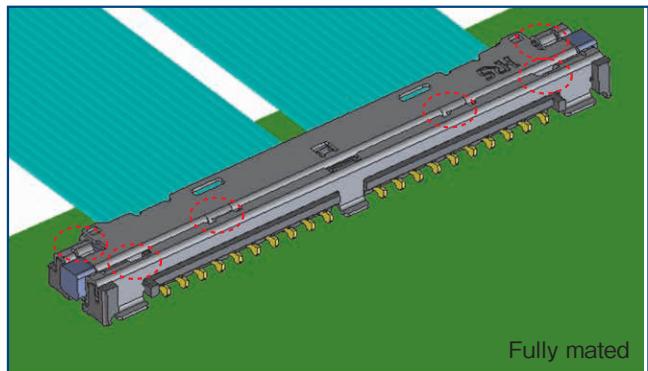


4. Robust Plug Design

Formed metal shells on the top and side surfaces form a strong and rigid assembly.

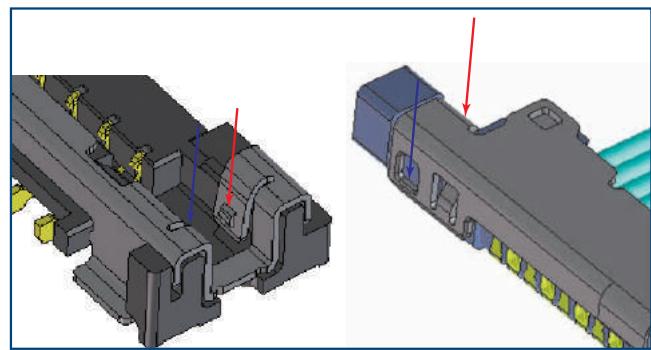
5. Enhanced shielding and ground connections

Metal shells on the plug and receptacle connect to each other with a reliable multi-point ground contacts, assuring reliable ground connection and EMC protection.



6. Reliable Lock

Fully mated condition is assured with reliable locks at 4 locations, confirming it with a distinct tactile click.



4-point lock : 2 points at each end

7. Solder Wicking Prevention

Nickel barriers prevent solder wicking in the critical contact areas. (receptacle side)

8. RoHS, Halogen-free

No chlorine or bromine exceeding the standard values are used in this connector.

*As defined by IEC61249-2-21

Br : 900 ppm maximum, Cl : 900 ppm maximum,
Cl + Br combined : 1,500 ppm maximum.

Specifications

Rated Current (Note 1)	42 AWG : 0.2A 44 AWG : 0.15A 46 AWG : 0.1A	Operating Temperature Range (Note 2)	-35 to +85°C
		Storage Temperature Range (Note 3)	-10 to +60°C
		Operating Humidity Range	20% to 80%
Rated Voltage	30V AC	Storage Humidity Range (Note 3)	40% to 70%

Item	Specification	Conditions
Insulation Resistance	50M Ω Min.	Measured at 100V DC
Withstanding Voltage	No flashover or insulation breakdown	100V AC / 1 min.
Contact Resistance	Signal : 80m Ω Max. Ground : 80m Ω Max.	Measured at 100mA (0 or 1,000Hz)
Vibration	No electrical discontinuity of 1 μ s or more	Frequency : 10 to 55Hz, single amplitude of 0.75mm, 10 cycles in each of the 3 axis
Humidity	Contact Resistance (change from initial value) 50m Ω Max. Insulation Resistance : 25M Ω Min.	96 hours at of +40 ± 2°C , and humidity of 90 to 95%
Temperature Cycle	Contact Resistance (change from initial value) 50m Ω Max. Insulation Resistance : 25M Ω Min.	-55°C → +5 to +35°C → +85°C → +5 to +35°C Time : 30 min. → 2 to 3 min. → 30 min. → 2 to 3 min. 5 cycles
Durability	Contact Resistance (change from initial value) 50m Ω Max.	20 times
Resistance to Soldering Heat	No deformation of affecting performance	Reflow : At the recommended temperature profile Manual soldering : +350°C for 3 seconds

Note 1 : Temperature rise of connector body only, and that of cable is not included.

Note 2 : Includes temperature rise caused by current flow.

Note 3 : The term "storage" refers to products stored for a long period prior to mounting and use. The operating temperature and humidity range covers the non-conducting condition of installed connectors in storage, shipment or during transportation after board mounting.

Materials / Finish

Item	Component	Material	Color / Finish	Remarks
Receptacle	Insulator	LCP	Black	UL94V-0
	Contact	Phosphor bronze	Gold Pating	-
	Retention Tab	Phosphor bronze	Tin Plating	-
Plug	Insulator	LCP	Black	UL94V-0
	Contact	Phosphor bronze	Gold Pating	-
	Exterior Shell	Stainless	Tin Plating	-
Shell	Exterior Shell	Stainless	Tin 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.

■ Connector

DF56 C - # S - 0.3 V (##)

① ② ③ ④ ⑤ ⑥ ⑦

DF56 - # P - SHL

① ③ ④ ⑧

① Series Name	DF56	⑤ Contact Pitch	0.3mm
② Shape Symbol	Receptacle C : Stand-off Type (No pattern prohibited area under connector) Blank : Standard (With pattern prohibited area under connector)	⑥ Termination Type	V : Straight SMT SD : Micro-Coaxial Cable Plug
③ No. of Pos.	C : Stand-off Type 26, 30, 40 Standard : 40, 50	⑦ Packing Type	(51) : Embossed Tape Packaging
④ Connector Type	S : Receptacle P : Plug	⑧ Mounting Parts	SHL : Exterior Shell

Combinations

[Standard Use]

DF56-#S-0.3V(##) + DF56-#P-ASSY [DF56-#P-0.3SD(##) + DF56-#P-SHL]

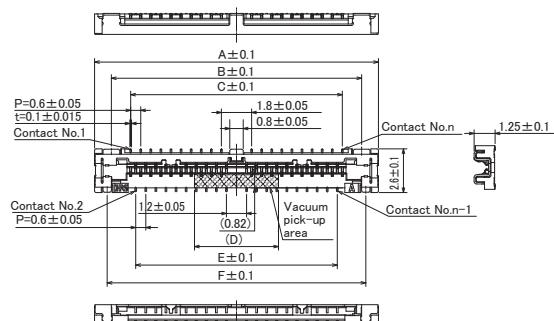
Note 1 : The product specification of the above combination is shown on "Product Specifications".

Note 2 : ASSY means a harness item.

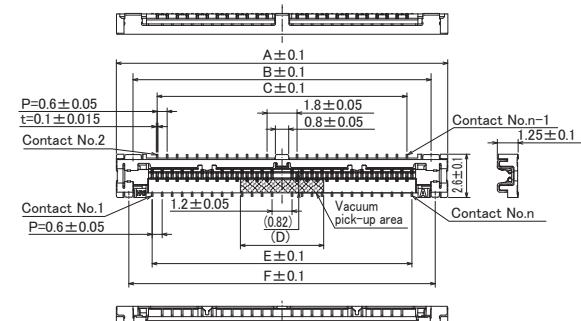
Receptacle (SMT)



● 40pos.



● 50pos.



Note : The position of contact No.1 is different depending on No. of positions.

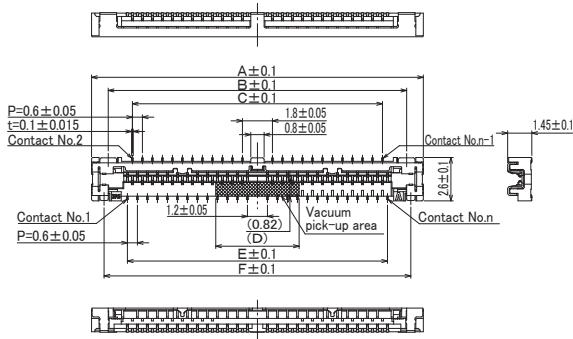
Unit : mm

Part No.	HRS No.	No. of Pos.	A	B	C	D	E	F	Purchase Unit (##) : (51)
DF56-40S-0.3V(##)	CL0662-5600-0-##	40	16.90	14.90	12.60	(5.00)	12.00	15.40	5,000pcs per reel
DF56-50S-0.3V(##)	CL0662-5606-7-##	50	19.90	17.90	15.00	(5.00)	15.60	18.40	

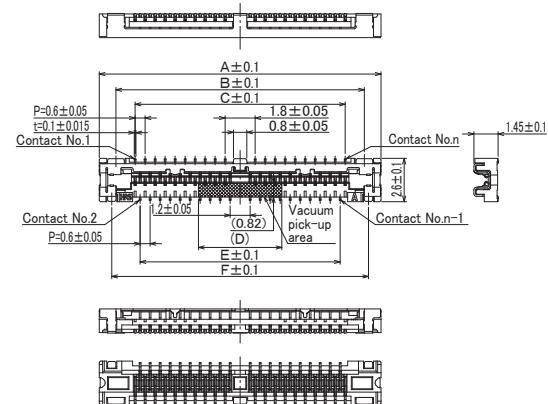
Receptacle (SMT).....Stand-off Type



● 26pos. / 30pos. / 50pos.



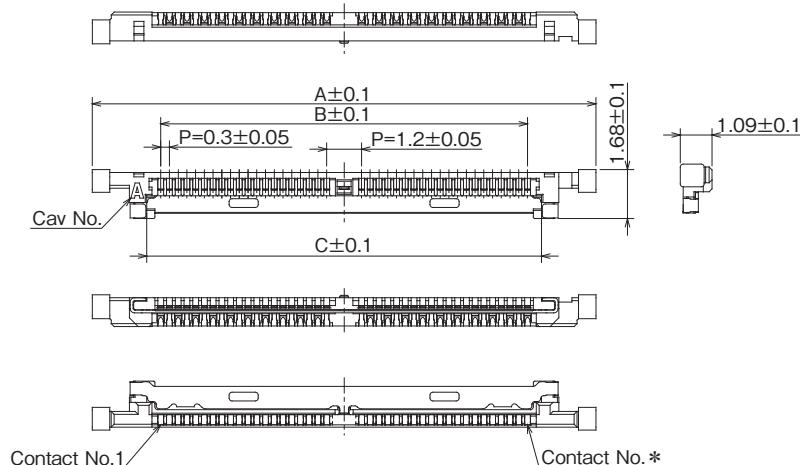
● 40pos.



Note : The position of contact No.1 is different depending on No. of positions.

Part No.	HRS No.	No. of Pos.	A	B	C	D	E	F	Unit : mm Purchase Unit (##) : (51)
DF56C-26S-0.3V(##)	CL0662-5603-9-##	26	12.7	10.7	7.8	(5.00)	8.4	11.2	5,000pcs per reel
DF56C-30S-0.3V(##)	CL0662-5616-0-##	30	13.9	11.9	9.0	(5.00)	9.6	12.4	
DF56C-40S-0.3V(##)	CL0662-5619-9-##	40	16.9	14.9	12.6	(5.00)	12.0	15.4	
DF56C-50S-0.3V(##)	CL0662-5624-9-##	50	19.9	17.9	15.0	(5.00)	15.6	18.4	

Plug



● Standard Type

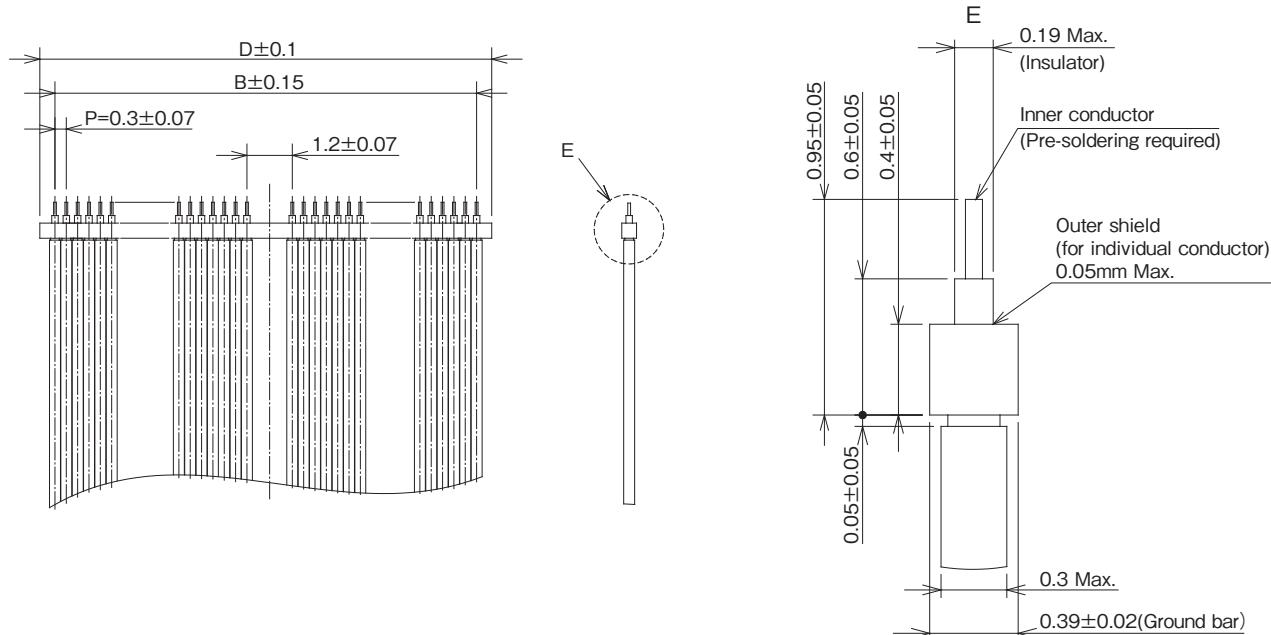
Part No.	HRS No.	No. of Pos.	A	B	C	D	Purchase Unit (##) : (51)	Unit : mm
DF56-30P-0.3SD(##)	CL0662-5617-3-##	30	14.30	9.60	10.56	10.40	10,000pcs per reel	
DF56-40P-0.3SD(##)	CL0662-5601-3-##	40	17.30	12.60	13.56	13.40		
DF56-50P-0.3SD(##)	CL0662-5607-0-##	50	20.30	15.60	16.56	16.40		

Note : The exterior shell (DF56-#P-SHL) is required for micro coaxial cable termination

● The Type of Emphasis for Operation (A part in a different)

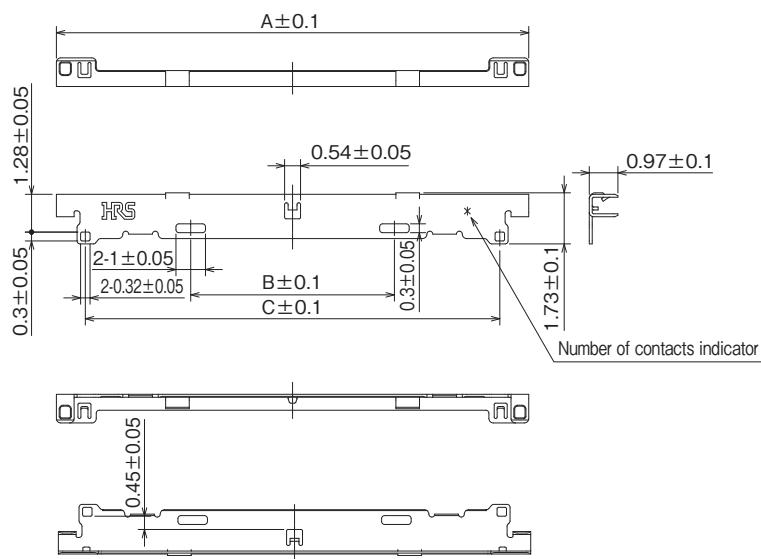
Part No.	HRS No.	No. of Pos.	A	B	C	D	Purchase Unit (##) : (51)	Unit : mm
DF56L-26P-0.3SD(##)	CL0662-5623-6-##	26	13.50	8.40	9.36	9.20	10,000pcs per reel	
DF56L-30P-0.3SD(##)	CL0662-5625-1-##	30	14.70	9.60	10.56	10.40		
DF56L-50P-0.3SD(##)	CL0662-5626-4-##	50	20.70	15.60	16.56	16.40		

■ Recommended Micro Coaxial Cable Preparation



Note : Pre-soldering (lead-free) is required for center conductor.

Exterior Shell

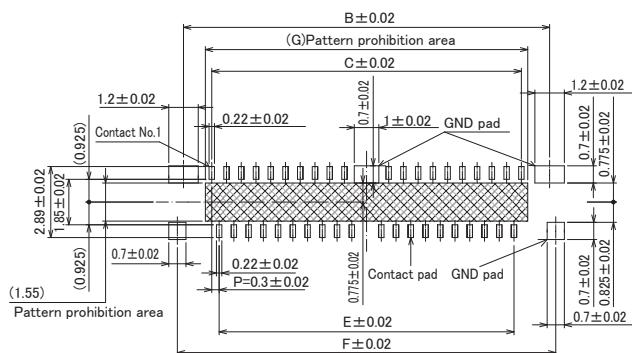


Part No.	HRS No.	No. of Pos.	A	B	C	Unit : mm	Purchase Unit
DF56-26P-SHL	CL0662-5605-4-00	26	11.80	3.90	9.84		10,000pcs per reel
DF56-30P-SHL	CL0662-5618-6-00	30	13.00	3.90	11.04		
DF56-40P-SHL	CL0662-5602-6-00	40	16.00	6.90	14.04		
DF56-50P-SHL	CL0662-5608-2-00	50	19.00	7.50	17.04		

Recommended PCB Mounting Pattern

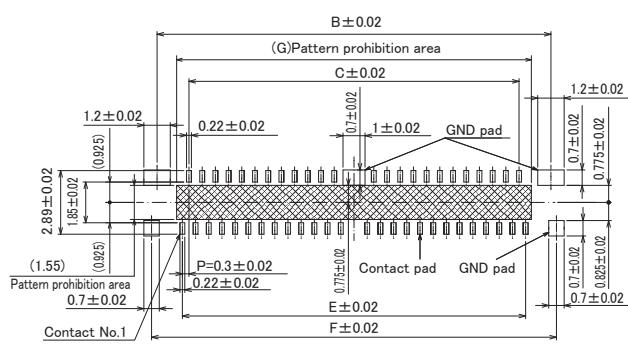
[Standard Type]

● 40pos.



Note : The position of contact No.1 is different depending on No. of positions.

● 50pos.



Unit : mm

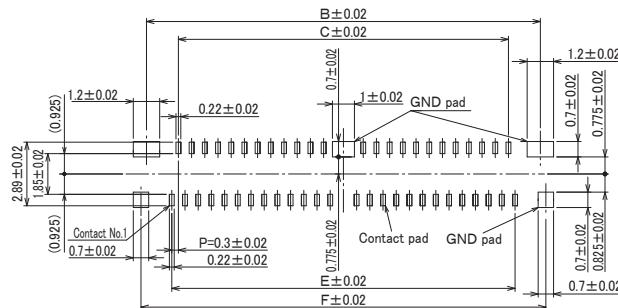
Part No.	HRS No.	No. of Pos.	B	C	E	F	G
DF56-40S-0.3V(##)	CL0662-5600-0-##	40	14.90	12.60	12.00	15.40	13.12
DF56-50S-0.3V(##)	CL0662-5606-7-##	50	17.90	15.00	15.60	18.40	16.12

【Specification Number】

(51) : Embossed Package (5,000pcs per reel)

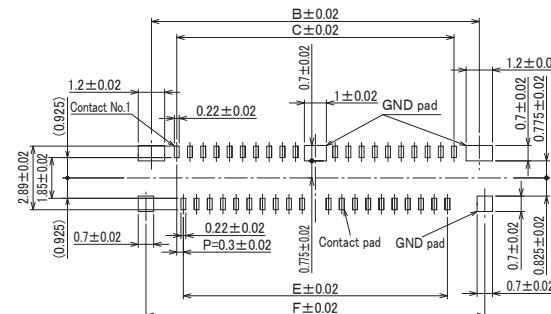
[Stand-off Type]

● 26pos. / 30pos. / 50pos.



Note : The position of contact No.1 is different depending on No. of positions.

● 40pos.



Unit : mm

Part No.	HRS No.	No. of Pos.	B	C	E	F
DF56C-26S-0.3V(##)	CL0662-5603-9-##	26	10.7	7.8	8.4	11.2
DF56C-30S-0.3V(##)	CL0662-5616-0-##	30	11.9	9.0	9.6	12.4
DF56C-40S-0.3V(##)	CL0662-5619-9-##	40	14.9	12.6	12.0	15.4
DF56C-50S-0.3V(##)	CL0662-5624-9-##	50	17.9	15.0	15.6	18.4

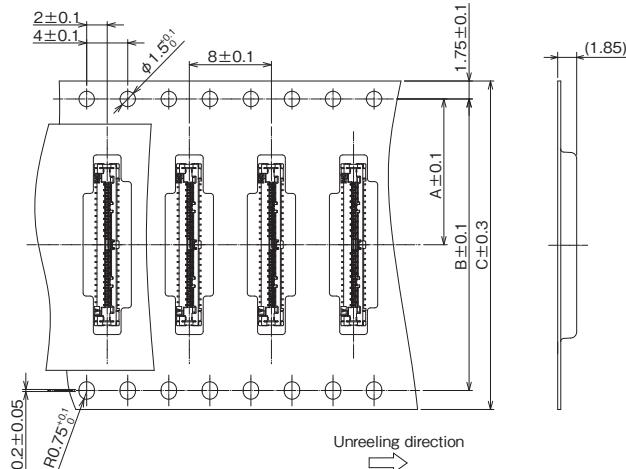
【Specification Number】

(51) : Embossed Package (5,000pcs per reel)

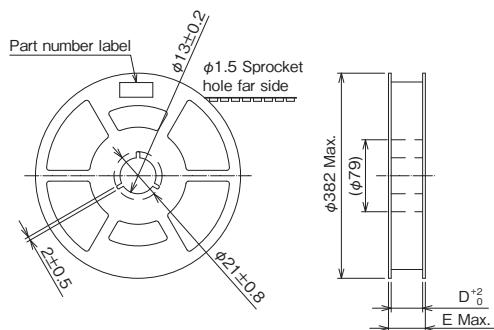
Packaging Specifications (JIS C 0806 Compliant)

Receptacle (Standard Type)

● Embossed Carrier Tape Dimensions



● Reel Dimensions

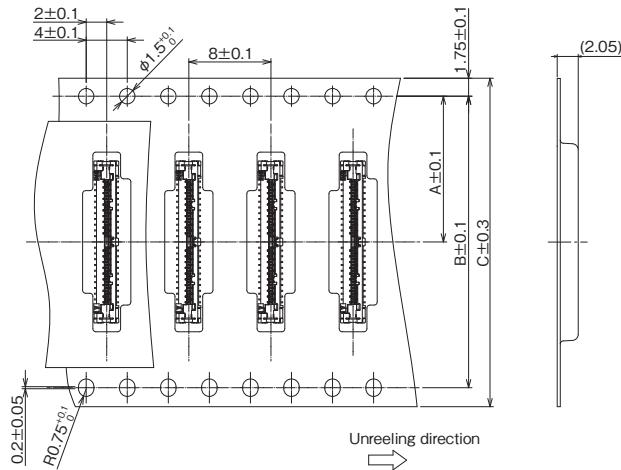


Part No.	HRS No.	No. of Pos.	A	B	C	D	E	Unit : mm
DF56-40S-0.3V(##)	CL0662-5600-0-##	40	14.2	28.4	32.0	32.4	38.4	
DF56-50S-0.3V(##)	CL0662-5606-7-##	50	14.2	28.4	32.0	32.4	38.4	

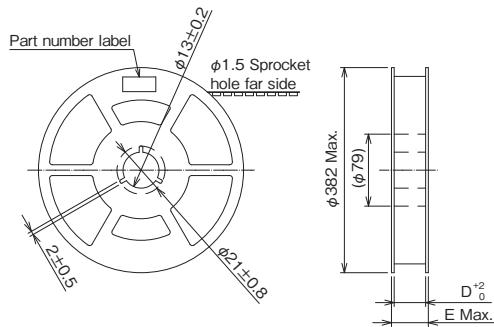
Note : When the number of contacts is 30 or less, the feed holes are only on one side of the tape. (Top of figure φ 1.5 hole only)

Receptacle (Stand-off Type)

● Embossed Carrier Tape Dimensions



● Reel Dimensions



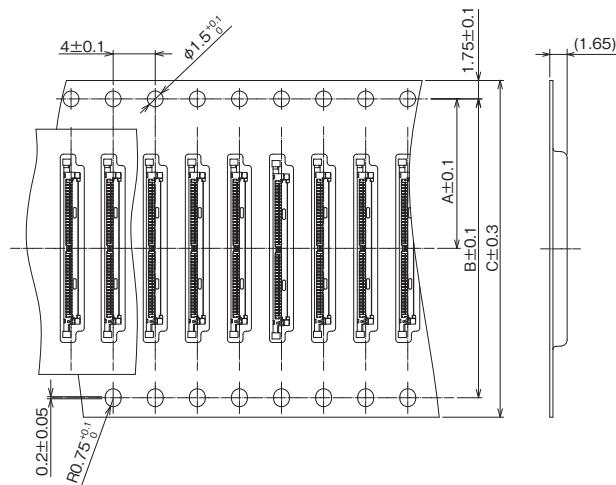
Unit : mm

Part No.	HRS No.	No. of Pos.	A	B	C	D	E
DF56C-26S-0.3V(##)	CL0662-5603-9-##	26	11.5	—	24.0	24.4	30.4
DF56C-30S-0.3V(##)	CL0662-5616-0-##	30	11.5	—	24.0	24.4	30.4
DF56C-40S-0.3V(##)	CL0662-5619-9-##	40	14.2	28.4	32.0	32.4	38.4
DF56C-50S-0.3V(##)	CL0662-5624-9-##	50	14.2	28.4	32.0	32.4	38.4

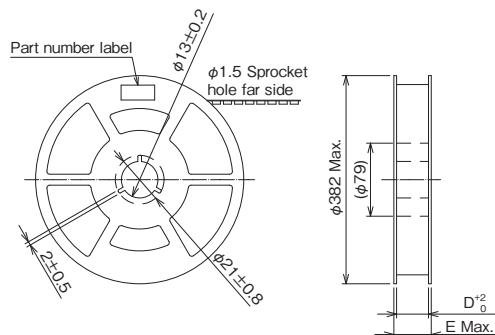
Note : When the number of contacts is 30 or less, the feed holes are only on one side of the tape. (Top of figure φ 1.5 hole only)

Plug

● Embossed Carrier Tape Dimensions



● Reel Dimensions



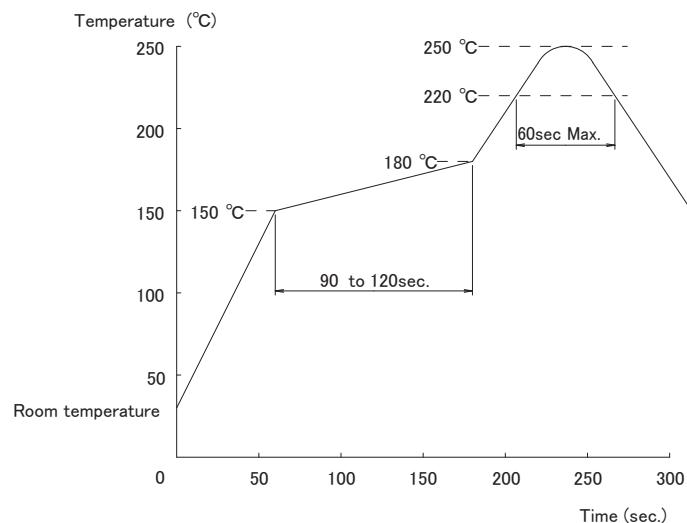
Part No.	HRS No.	No. of Pos.	A	B	C	D	E	Unit : mm
DF56-30P-0.3SD(##)	CL0662-5617-3-##	30	14.2	28.4	32.0	32.4	38.4	
DF56-40P-0.3SD(##)	CL0662-5601-3-##	40	14.2	28.4	32.0	32.4	38.4	
DF56-50P-0.3SD(##)	CL0662-5607-0-##	50	14.2	28.4	32.0	32.4	38.4	

Extraction Tool

For details about the extraction tool, please contact your Hirose sales representative.

Temperature Profile

1. Recommended temperature profile
(Lead-free for mounting)



Applicable Conditions

1. Peak Temperature : 250°C Max.
2. Heating : 220°C Min. for 60 seconds Max.
3. Pre-heating : 150 to 180°C for 90 to 120 seconds.
4. Number of cycles : Up to 2 cycles

*Solder composition : Sn-3Ag-0.5Cu

Note : Values in this temperature profile are one of the recommendations.

2. Recommended manual soldering

Temperature of the soldering iron : 350°C Max. Soldering time : 3 seconds Max.

3. Recommended screen thickness and open area ratio
(Pattern area ratio)

Standard thickness 0.1mm

C : Stand-off Type
Opening ratio : Lead 100%, ground 100%
None : Standard Type
Opening ratio : Lead 60%, ground 100%

4. Board warpage

Maximum of 0.02mm at the connector center, with both ends of the connector as reference points.

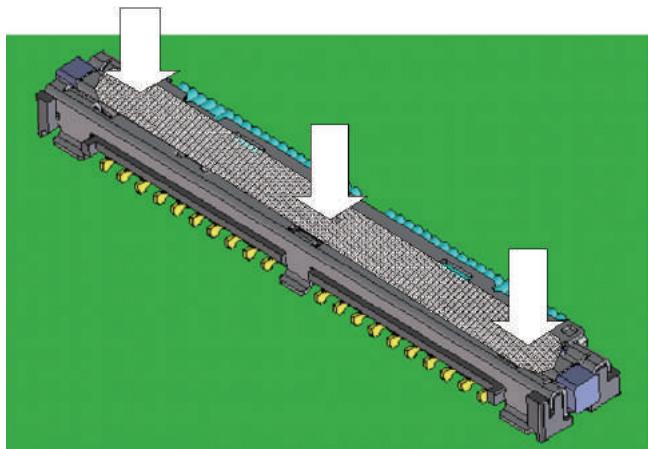
5. Cleaning conditions

IPA (Isopropyl Alcohol) Cleaning is not recommended.
If you clean this product, please evaluate its performance before using it.
(Cleaning may impair the mating/unmating properties and lower resistance to environmental factors.)

Connector Operation and Precautions

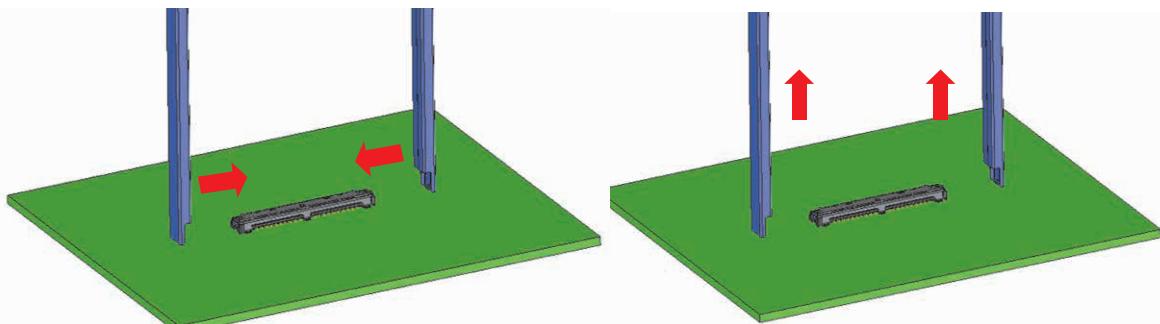
Mating

Mate the plug with receptacle by pressing straight against the entire plug surface.
Do NOT mate the plug while holding by the terminated cable.



Un-Mating

Use a dedicated extraction tool, pull directly upward as shown in the diagram below.
Extraction from only one side will result in damage to the connector so it is recommended to extract from both sides.
Please refrain from holding the cable while extracting as it may result in cable disconnection or connector damage.



Note 1 : Do not mate / un-mate the connectors when receptacle is not mounted on the board.

Note 2 : Excessive scoop insertion or extraction may result in damage.

Note 3 : In the manual soldering process, don't carry out the flux coating which will cause a flux blister on the connector.

While Taking into Consideration

Specifications mentioned in this catalog are reference values.

When considering to order or use this product, please review the Drawing and Product Specifications sheets.

Use an appropriate cable when using the connector in combination with cables.

If considering usage of a non-specified cable, please contact your sales representative.

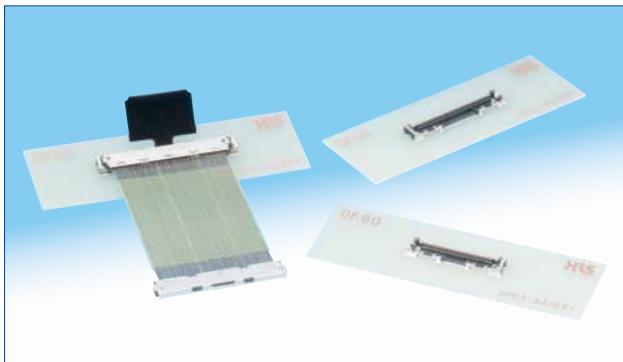
If assembly process is done by jigs & tools which are not identified by Hirose, the warranty of the product may be affected.

If considering usage for below mentioned applications, please contact your sales representative.

In cases where the application will demand a high level of reliability, such as automotive, medical instruments, public infrastructure, aerospace/defense etc. Hirose must review before assurance of reliability can be given.

0.5mm Pitch Vertical Mating Connectors for Thin Wire Coaxial Cable

DF80 Series



■Features

1. Supports high speed connections

The single row alignment utilizes a 0.5mm pitch to support 2.7Gbps & 5.4Gbps speeds and produces excellent signal characteristics. Supports eDP™ [Embedded DisplayPort™] version 1.3

2. Maximizes space

Designed to be a space saving connector, this series features a 0.5mm pitch, a low-mated height, and a single row layout in a vertical mating style.

3. Excellent mating operation

It features long mating guides and a generous lead in opening that makes it easy to visually check the connection. (Lead-in amount : $\pm 1\text{mm}$) (Fig. 1)

4. Reliable contact structure

The DF80 series utilizes its effective contact length (0.5mm) and a 2 point type contact structure to ensure high contact reliability. (Fig. 2)

5. Shield performance enhancement

By utilizing multiple contacts between the plug and receptacle shells, the shielding performance is enhanced and creates a more reliable contact. (Fig. 3)

6. Durable plug structure

The plug has two metal covers around it to form a rigid structure.

7. Secure locking system with a clear tactile click

A tactile click ensures that the lock function has been completed and is properly secured. This system also produces excellent lock retention.

8. Structure supports a pull tab

The structure was designed to allow a pull tab to be utilized to aid in un-mating the connector.

9. Halogen-free and RoHS compliant

All materials and substances used to produce these parts comply with the Halogen-free and RoHS free standards.

* Defined according to IEC 61249-2-21.

Br: 900 ppm or below, Cl : 900 ppm or below,

Br+Cl: 1,500 ppm or below

Superb mating operability

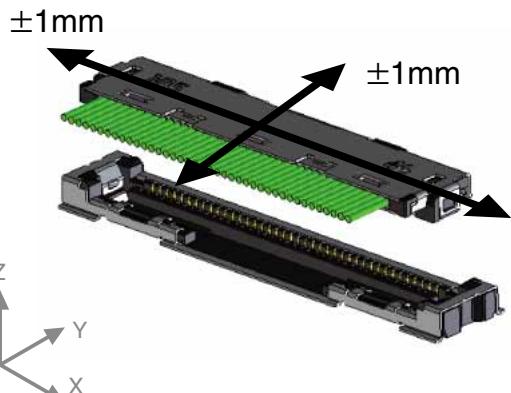


Fig. 1

High contact reliability

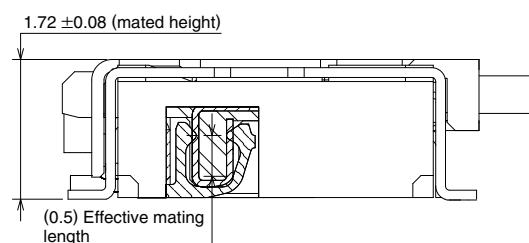
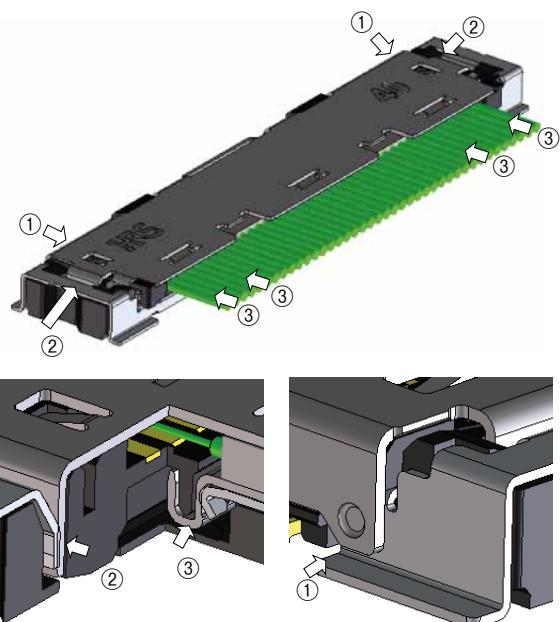


Fig. 2

Shield performance enhancement



Multiple ground springs/points (8 places) Fig. 3

■Product Specifications

Ratings	Rated Current	[Discreet Cable] 32 AWG : 0.5A 36 AWG : 0.35A [Thin wire coaxial cable] 40 AWG : 0.2A 42 AWG : 0.2A 44 AWG : 0.15A 46 AWG : 0.1A	(Note 3)	Operating Temperature Range	-35~+85°C (Note 1) 20 to 80%
	Rated Voltage	AC/DC 50V		Storage Temperature Range Storage Humidity Range	-10~+60°C (Note 2) 40~70% (Note 2)

Items	Specifications	Conditions
1. Insulation Resistance	Minimum of 50MΩ	Measured with DC 100V
2. Withstanding Voltage	No flashover or breakdown	Apply AC 150V for 1 minute
3. Contact Resistance	Signal : Maximum of 80mΩ GND : Maximum of 80mΩ	100mA (DC or 1,000Hz) measurement
4. Vibration Resistance	No electrical discontinuity of 1μs or greater	10 cycles in each of three directions at frequency 10~55Hz, half amplitude 0.75mm
5. Humidity Resistance	Contact resistance (difference from initial state) Maximum of 50mΩ Insulation resistance Minimum of 25mΩ	Left at temperature 40±2°C, humidity 90 to 95%, 96 hours
6. Temperature Cycles	Contact resistance (difference from initial state) 50mΩ or below, Insulation resistance 25mΩ or above	(-55°C : 30 minutes → 5~35°C : 2~3 minutes → 85°C : 30 minutes → 5~35°C : 2~3 minutes) 5 cycles
7. Durability	Contact Resistance : Maximum of 50mΩ	30 mating cycles
8. Soldering Heat Resistance	Should be no melting of resin parts that affects its performance	Reflow : according to the Recommended Temperature Profile Hand solder : Soldering iron temperature 350°C, 3 seconds

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

Note 2 : The term "storage" refers to products stored for a long period prior to mounting and use. The operating temperature and humidity range covers the non-energized condition of installed connectors in storage, shipment or during transportation after board mounting.

Note 3 : With only the connector portion at an elevated temperature level, the rated current value is set.

■Materials / Finish

Product	Component	Materials	Finish	Specifications
Receptacle	Insulator	LCP	Black	UL94V-0
	Contact	Phosphorous bronze	Gold plating	—
	Metal fitting	Phosphorous bronze	Tin plating	—
Plug	Insulator	LCP	Black	UL94V-0
	Contact	Phosphorous bronze	Gold plating	—
	Outer Shell	Stainless steel	Tin plating	—
Shell	Outer Shell	Stainless steel	Tin plating	—

■Product Number Structure

Refer to the chart below when determining the product specifications from the product number.

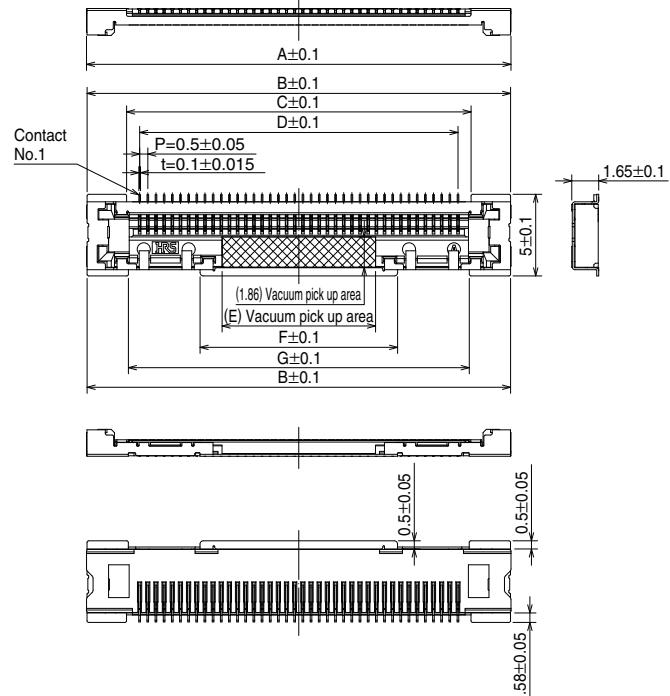
Please select from the product numbers listed in this catalog when placing orders.

●Connector

DF 80 - * S - 0.5 V (* *)
 ① ② ③ ④ ⑤ ⑥ ⑦
DF 80 - * P - SHL
 ① ② ③ ④ ⑤

① Series Name : DF	⑥ Termination method V : Vertical SMT SD : Thin wire coaxial plug
② Series No. : 80/80 D	
③ No. of Contacts : 30, 40, 50	
④ Connector Type S : Receptacle P : Plug	⑦ Packaging Type (51) Embossed packaging
⑤ Contact pitch : 0.5mm	⑧ Separately installed parts SHL : Outer shell

■ Receptacle (SMT)



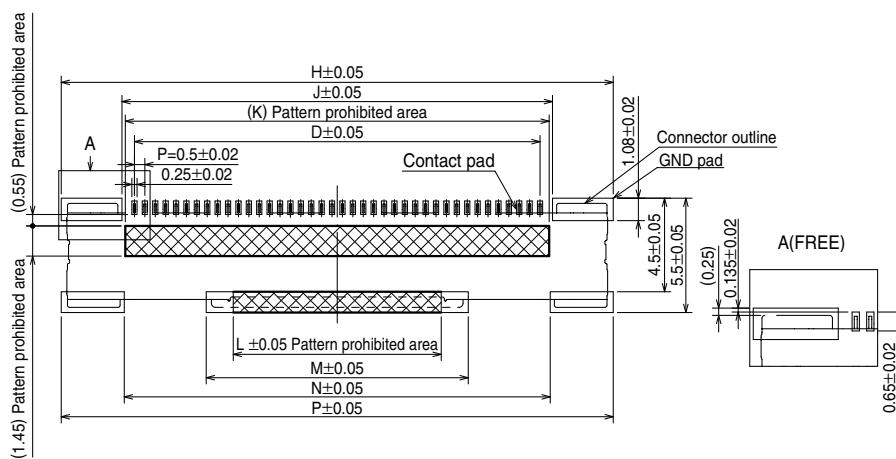
【Specification No.】 - **, (**)
(51) : Embossed packaging

Unit : mm

Part No.	HRS No.	No. of Contacts	A	B	C	D	E	F	G
DF80-30S-0.5V(**)	662-8004-0 **	30	21.00	20.94	16.10	14.50	4.40	7.10	15.88
DF80-40S-0.5V(**)	662-8001-2 **	40	26.00	25.94	21.10	19.50	9.40	12.10	20.88
DF80-50S-0.5V(**)	662-8007-9 **	50	31.00	30.94	26.10	24.50	14.40	17.10	25.88

Note 1 : This product is sold in full reel quantities of 5,000 pcs/reel. Please place orders by full reel quantities.

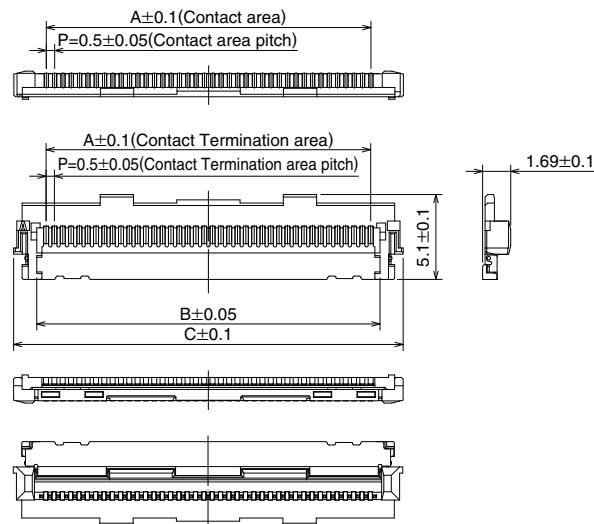
◆ Recommended PCB layout



Unit : mm

Part No.	HRS No.	No. of Contacts	H	J	K	D	L	M	N	P
DF80-30S-0.5V(**)	662-8004-0 **	30	21.54	15.70	15.38	14.50	5.00	7.60	15.48	21.54
DF80-40S-0.5V(**)	662-8001-2 **	40	26.54	20.70	20.38	19.50	10.00	12.60	20.48	26.54
DF80-50S-0.5V(**)	662-8007-9 **	50	31.54	25.70	25.38	24.50	15.00	17.60	25.48	31.54

■Plug



【Specification No.】 - **, (**)
(51) : Embossed packaging

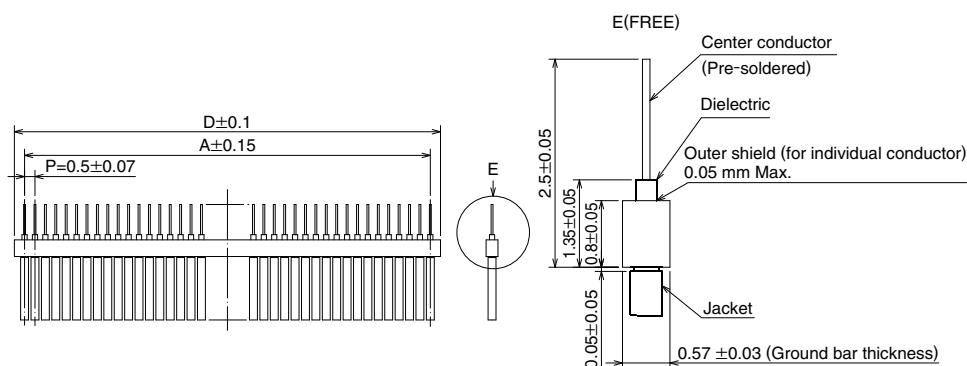
Unit : mm

Part No.	HRS No.	No. of Contacts	A	B	C	D
DF80D-30P-0.5SD(**)	662-8018-5 **	30	14.50	15.62	18.40	15.48
DF80D-40P-0.5SD(**)	662-8118-0 **	40	19.50	20.62	23.40	20.48
DF80D-50P-0.5SD(**)	662-8020-7 **	50	24.50	25.62	28.40	25.48

Note 1 : This product is sold in full reel quantities of 5,000 pcs/reel. Please place orders by full reel quantities.

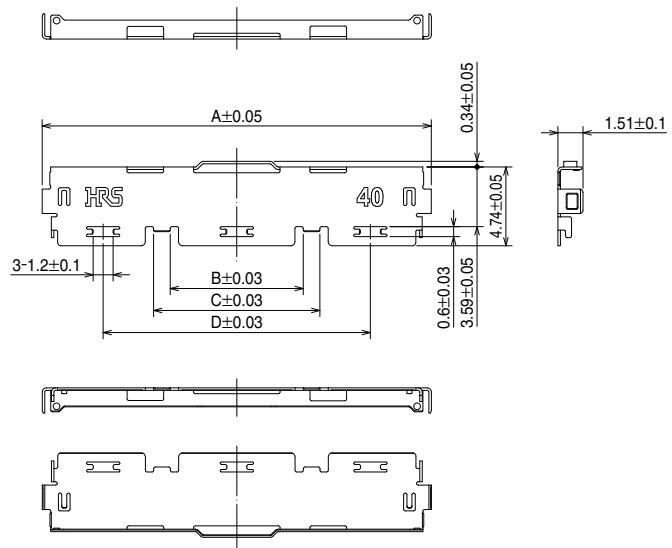
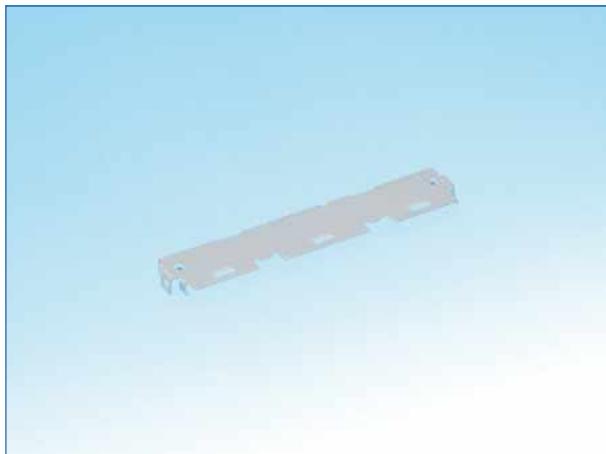
Note 2 : When terminating electric wire, the outer shell (DF80-*P-SHL) is required.

◆Recommended wire preparation diagram



Note 1 : Pre-soldering with lead free solder is required for the center conductor.

■Outer shell

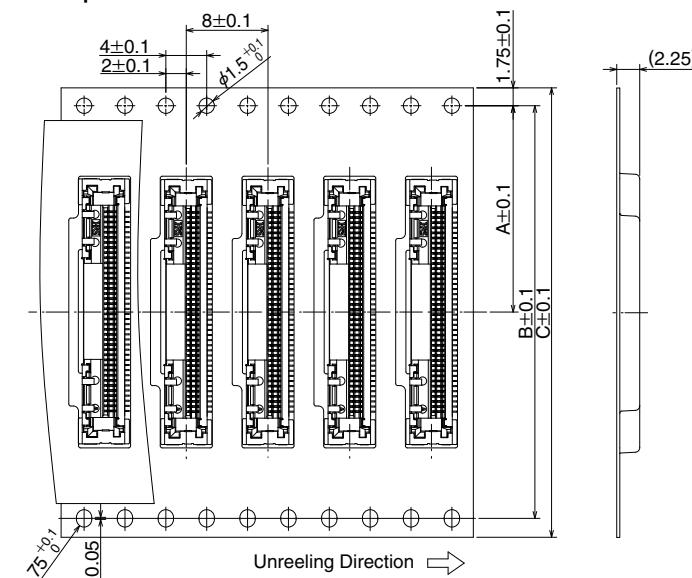


Unit : mm						
Part No.	HRS No.	No. of Contacts	A	B	C	D
DF80-30P-SHL	662-8006-6	30	18.40	4.50	6.50	11.07
DF80-40P-SHL	662-8003-8	40	23.40	8.00	10.00	16.07
DF80-50P-SHL	662-8009-4	50	28.40	10.00	12.00	21.07

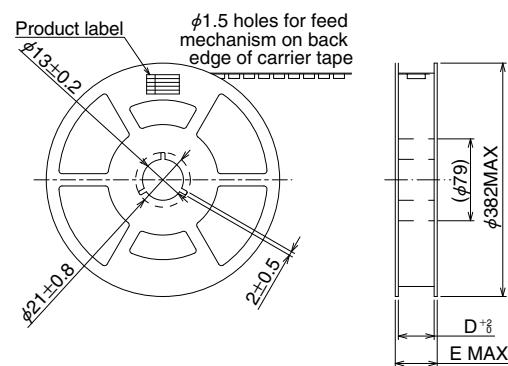
Note 1 : This product is sold in full reel quantities of 10,000 pcs/reel. Please place orders by full reel quantities.

◆Embossed tape and reel dimensions (JIS C 0806/IEC60286 compliant)

●Receptacle



●Reel Dimensions

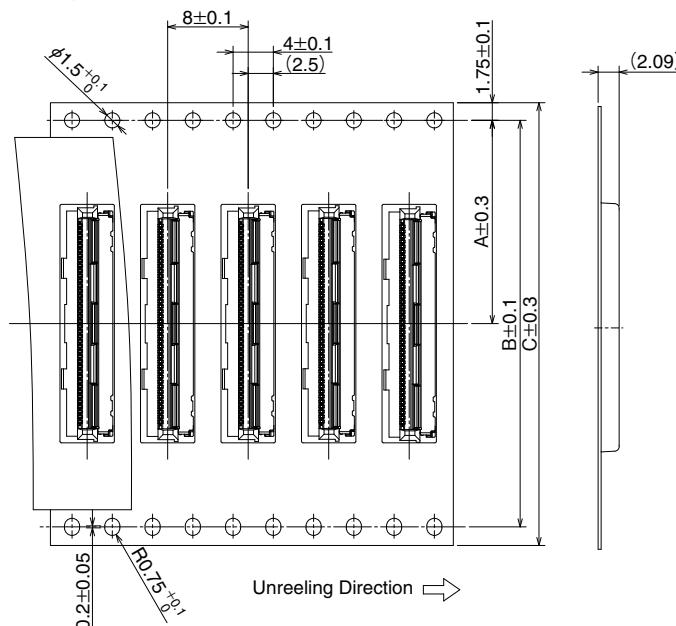


Unit : mm

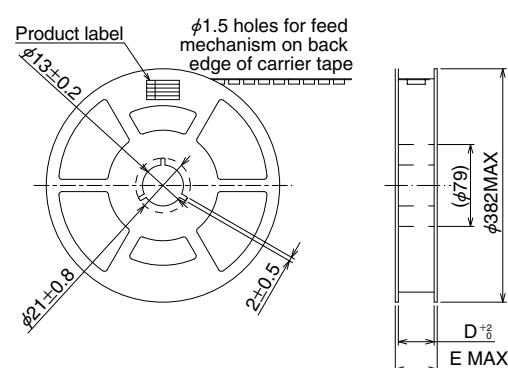
Part No.	HRS No.	No. of Contacts	A	B	C	D	E
DF80-30S-0.5V(51)	662-8004-0 51	30	20.2	40.4	44.0	44.4	50.4
DF80-40S-0.5V(51)	662-8001-2 51	40	20.2	40.4	44.0	44.4	50.4
DF80-50S-0.5V(51)	662-8007-9 51	50	20.2	40.4	44.0	44.4	50.4

◆Embossed tape and reel dimensions (JIS C 0806/IEC60286 compliant)

●Plug



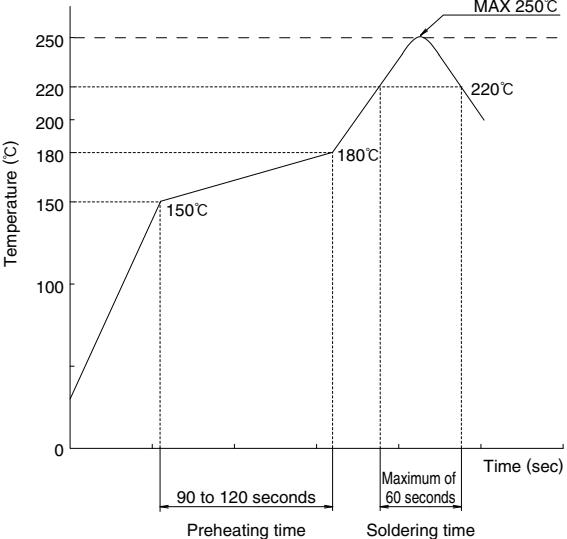
●Reel Dimensions



Unit : mm

Part No.	HRS No.	No. of Contacts	A	B	C	D	E
DF80D-30P-0.5SD(51)	662-8018-5 51	30	20.2	40.4	44.0	44.4	50.4
DF80D-40P-0.5SD(51)	662-8118-0 51	40	20.2	40.4	44.0	44.4	50.4
DF80D-50P-0.5SD(51)	662-8020-7 51	50	20.2	40.4	44.0	44.4	50.4

◆Operating Precautions

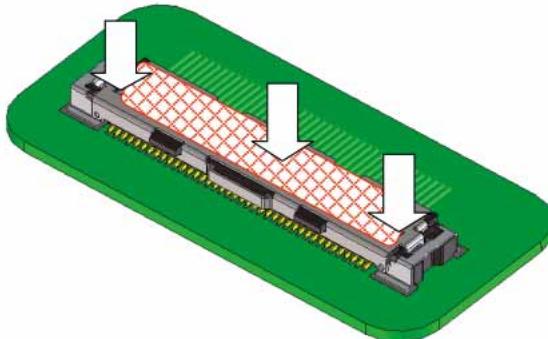
<p>1. Recommended Soldering Profile (Supports lead-free mounting)</p>	 <p>[Applicable Conditions]</p> <ol style="list-style-type: none"> 1. Peak temperature : 250°C MAX 2. Heating parts : 220°C or above, within 60 seconds 3. Preheating parts : 150 to 180°C, 90 to 120 seconds 4. Number of times : No more than 2 times <p>*Solder composition : Sn- 3 Ag- 0.5 Cu</p> <p>Note 1 : This temperature profile is recommended values.</p>
<p>2. Recommended hand solder conditions</p>	<p>The maximum temperature of the soldering iron should be 350°C with a maximum contact time of three seconds.</p>
<p>3. Recommended screen thickness : Opening ratio (pattern area ratio)</p>	<p>Thickness : 0.1mm, opening ratio : lead 100%, ground 100%</p>
<p>4. Leaning of PCB</p>	<p>Maximum of 0.02mm at the center of connector (using both edges of connector as criteria)</p>
<p>5. Washing conditions</p>	<p>IPA washing OK. (Washing is not recommended as it may alter the tactile click feel upon mating. Please contact your local rep if you plan on using another cleaning agent.)</p>

◆Operating Precautions

Operating Precautions

■Connector mating procedure

- When inserting the plug, press straight down on the entire surface of the plug until it is completely inserted.
- Do not press down on the wires when mating. Inserting the plug while pressing down on the wires may cause an angled insertion to occur and may result in damage to the connector.

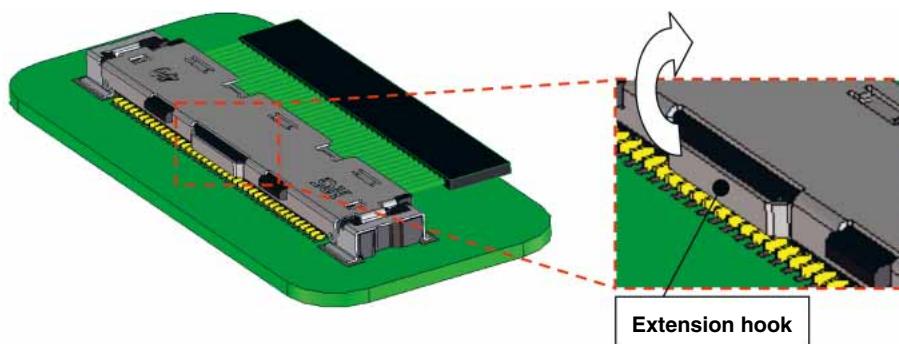


■Connector unmating procedure

- Un-mating the connector can be done in two different methods : unmating with fingers or with the pull tab.
- Do not pull/hold on the terminal wires during extraction. Doing so can lead to damaged or disconnected wires.

[Unmating with fingers]

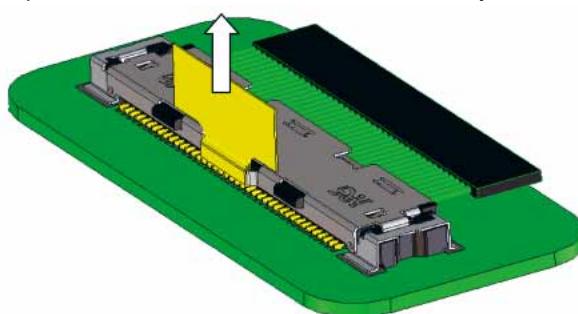
Pull up on the extension hook that is part of the connectors plug.



- The extension hook is made of metal, so please use caution when manipulating it as it may cause damage to your nail or finger.

[Unmating with pull tab]

Pull up on the tab in the arrowed direction (vertically) to extract the plug.



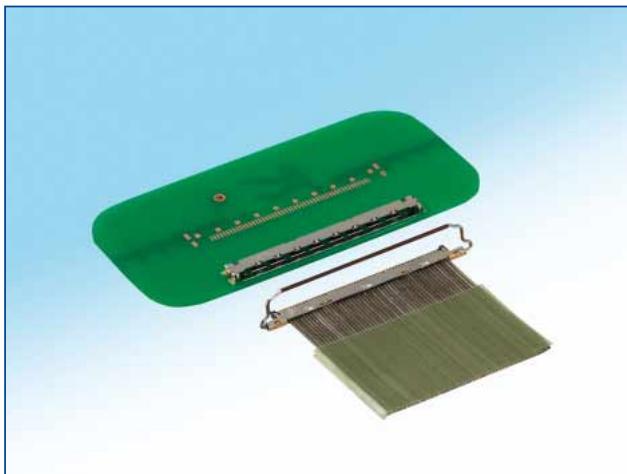
■Do not mate and unmate this connector if it has not been mounted on a PCB, doing this can damage and deform the contacts.

■Using excessive force while mating or unmating will damage the contacts or connector.

■When hand soldering, do not apply excessive amounts of flux. Doing so may promote solder wicking.

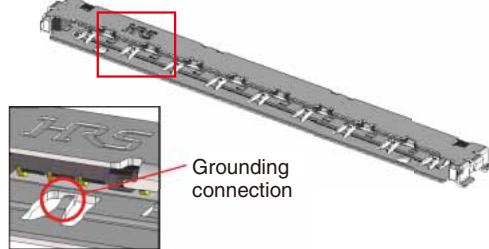
0.4 mm Pitch, Horizontal Mating, Board-to-Micro-Coaxial Cable Connector

DF81 Series



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

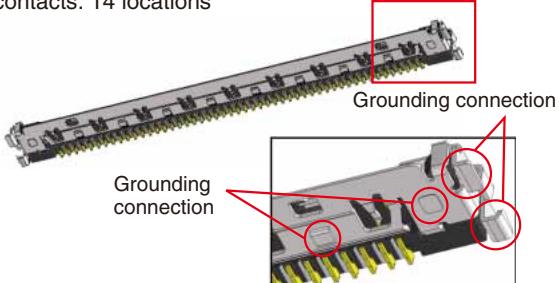


Fig.1

■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

Positive lock by using the latch

•Unlocking is possible by rotating the latch.

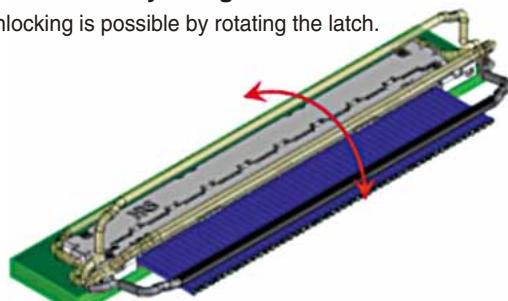


Fig.2

Excellent mating operability

•Wide self-alignment (X direction: ± 0.45 , Z direction: ± 0.15)

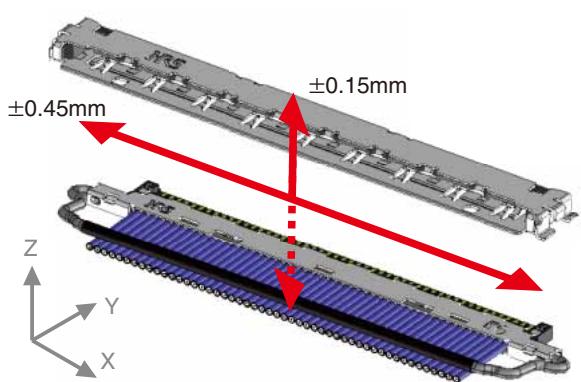


Fig.3

■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 #46: 0.1 A	(Note 3) (Note 4)	Operating Temperature Range Operating Humidity Range	-35 to 85°C (Note 1) 20 to 80°C
	Rated Voltage	100 V AC/DC		Storage Temperature Range Storage Humidity Range	-10 to 60°C (Note 2) 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 mΩ or lower GND: 80 mΩ or lower	Measured at 100 mA (DC or 1,000 Hz)
4. Vibration Resistance	No electric outage of 1μs 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 mΩ or lower Insulation resistance: 25 MΩ 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 mΩ or lower Insulation resistance: 25 MΩ 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 mΩ 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
Receptacle	Insulator	LCP	Black	UL94V-0
	Contact	Phosphor bronze	Gold plating	_____
	Metal fitting	Stainless steel	Partially gold plated	_____
Plug	Insulator	LCP	Black	UL94V-0
	Contact	Phosphor bronze	Gold plating	_____
	Outer shell	Stainless steel	Partially gold plated	_____
Shell	Outer shell	Stainless steel	Partially gold plated	_____
Latch	Locking bar	Stainless steel / polyester	_____	_____

■Product Number Structure

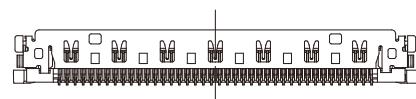
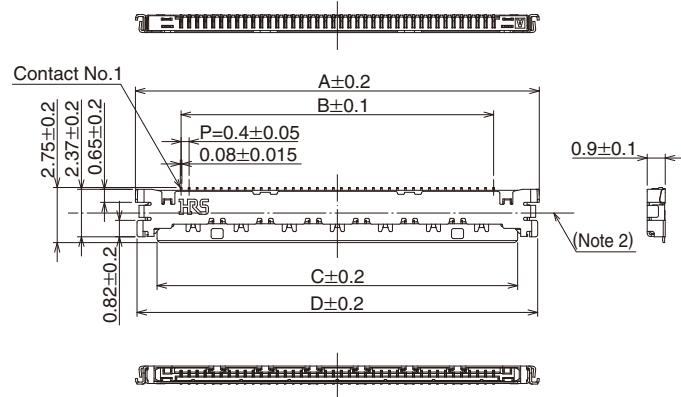
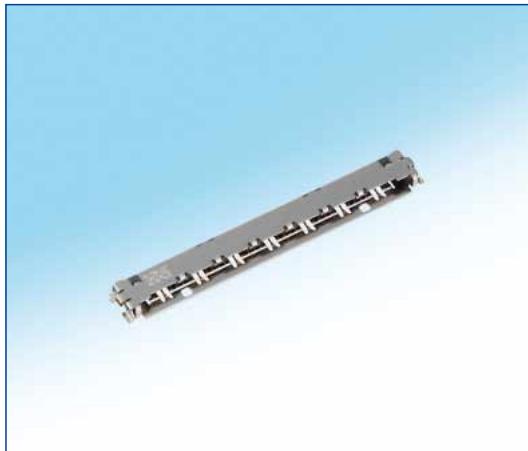
Refer to the chart below when searching for the part number nomenclature.
Please make a selection from the connectors listed on pages 3 to 6 of this catalog when placing orders.

●Connector

DF 81 - * S - 0.4 H (* *)
 ① ② ③ ④ ⑤ ⑥ ⑦
DF 81 - * P - SHL
 ① ② ③ ④ ⑧

①	Series Name: DF
②	Series No.: 81/81D
③	Numbers of Contacts: 30, 40, 50
④	Connector type S: Receptacle P: Plug
⑤	Contact pitch: 0.4mm
⑥	Termination Type H: Right Angle SMT SD: Solder wire termination
⑦	Packaging Type (51): Embossed packaging
⑧	Parts for Assembly SHL: Outer shell LCH: Latch

■Receptacle (SMT)



Unit: mm

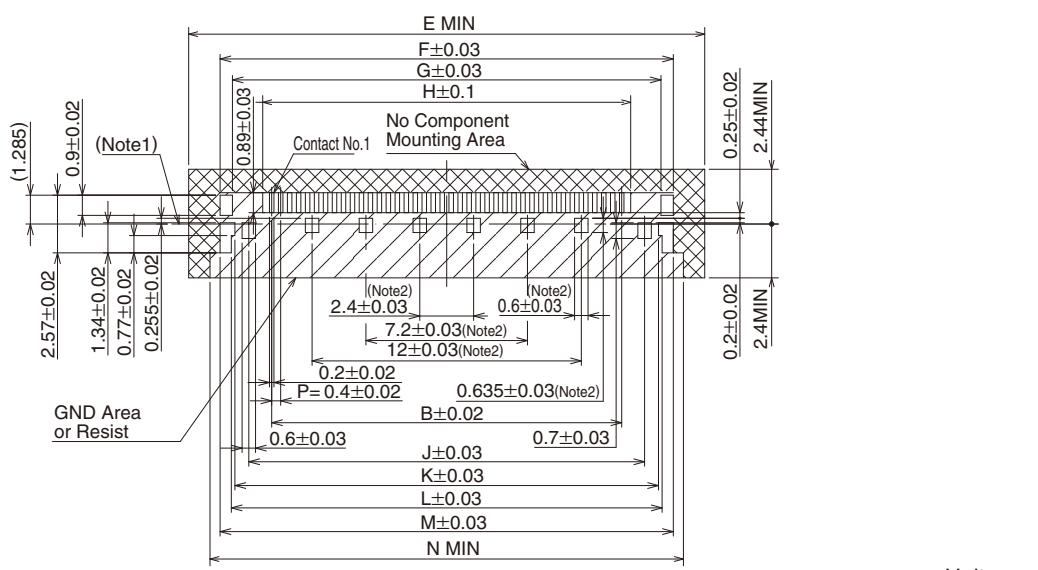
Product No.	HRS No.	No. of contacts	A	B	C	D
DF81-30S-0.4H(**)	662-8104-5 **	30	16.16	11.6	14	16
DF81-40S-0.4H(**)	662-8100-4 **	40	20.16	15.6	18	20
DF81-50S-0.4H(**)	662-8102-0 **	50	24.16	19.6	22	24

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

(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



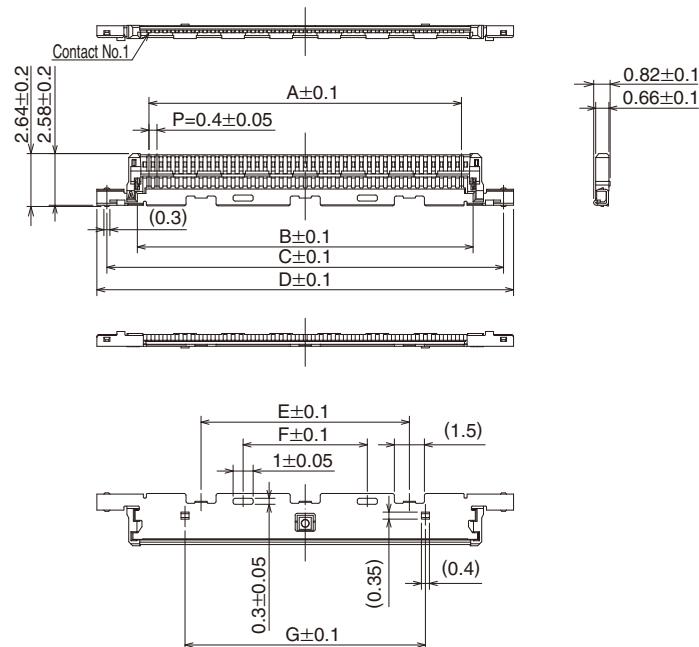
Unit: mm

Product No.	HRS No.	No. of contacts	B	E	F	G	H	J	K	L	M	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.

■Plug



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

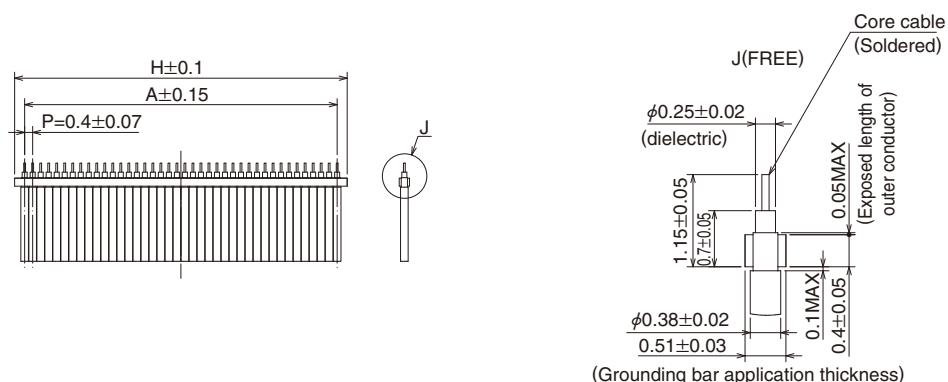
Unit: mm

Product No.	HRS No.	No. of contacts	A	B	C	D	E	F	G	H
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).

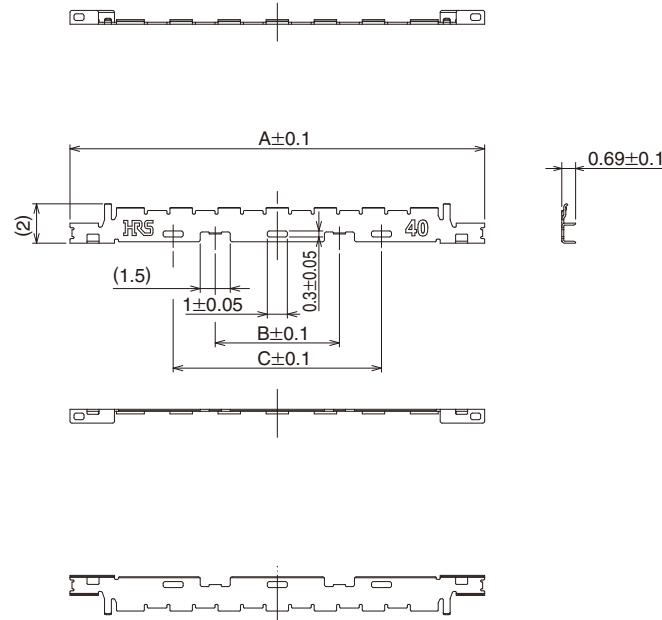
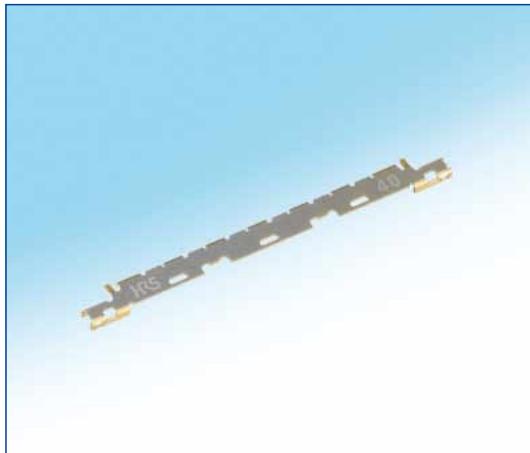
(Note 2) Outer shell (DF81-*P-SHL)/latch (DF81-*P-LCH) is required when connecting wires.

◆Recommended micro coaxial cable preparation



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

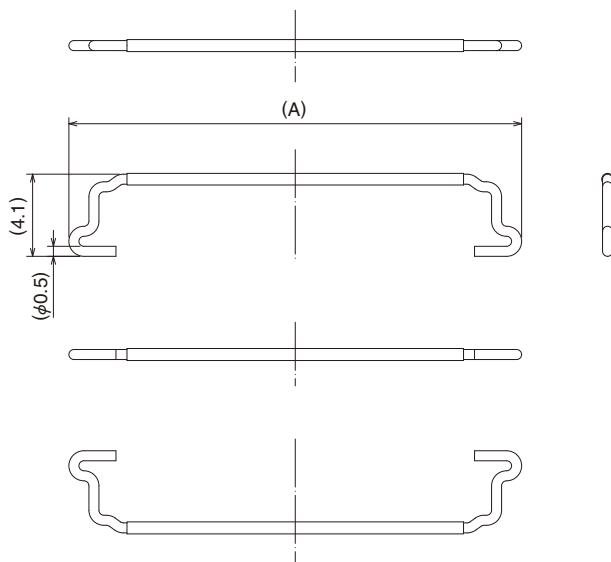
■Outer shell



Product No.	HRS No.	No. of contacts	A	B	C
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

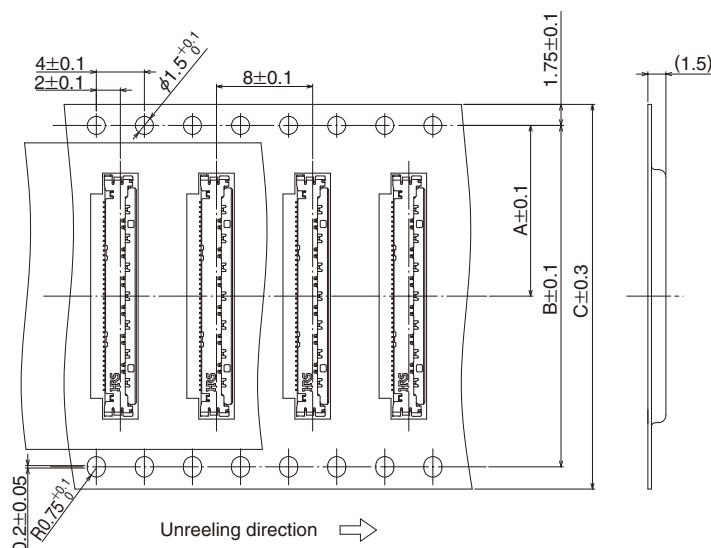


Product No.	HRS No.	No. of contacts	A
DF81-30P-LCH	662-8107-3	30	18.6
DF81-40P-LCH	662-8109-9	40	22.6
DF81-50P-LCH	662-8113-6	50	26.6

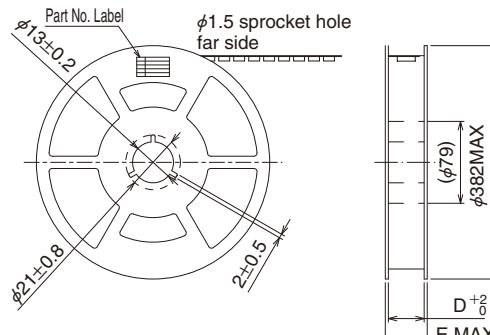
(Note 1) Please place your orders by full box quantities (10,000 latches/box).

◆Emboss tape dimensions (conforms to JIS C 0806)

●Receptacle



● Reel Condition Dimensions



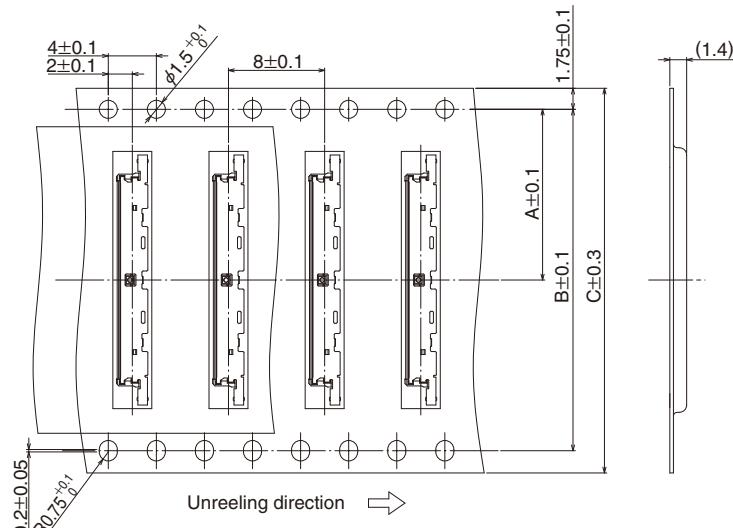
Unit: mm

Product No.	HRS No.	No. of contacts	A	B	C	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

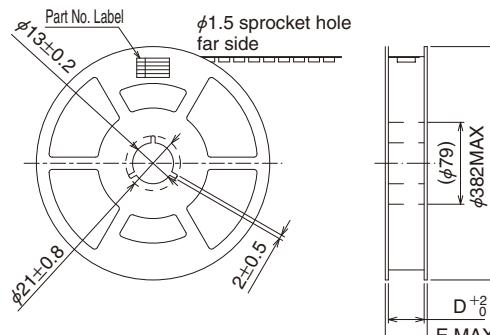
(Note 1)Sprocket hole for 30 contacts is provided only on one side.(Only a $\phi 1.5$ hole on the top of the diagram)

◆Emboss Tape Dimensions

●Plug



●Reel Dimensions

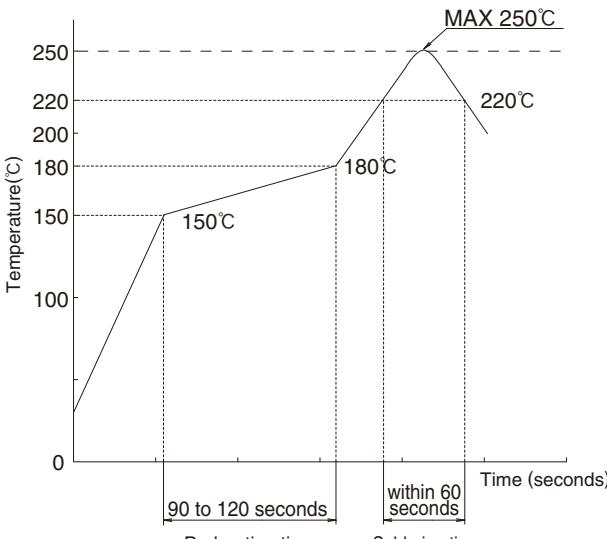


Unit: mm

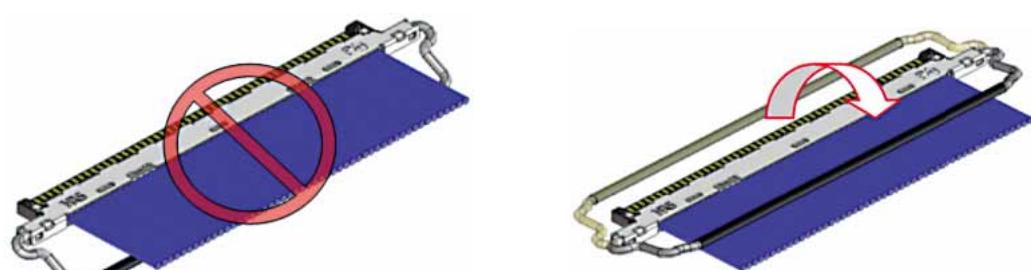
Product No.	HRS No.	No. of contacts	A	B	C	D	E
DF81D-30P-0.4SD(51)	662-8119-2 51	30	11.5	—	24	24.4	30.4
DF81D-40P-0.4SD(51)	662-8120-1 51	40	14.2	28.4	32	32.4	38.4
DF81D-50P-0.4SD(51)	662-8122-7 51	50	20.2	40.4	44	44.4	50.4

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

◆Precautions

1. Recommended Temperature Profile (Compatible with lead-free soldering)	 <p>[Applicable Conditions]</p> <ol style="list-style-type: none"> 1. Peak temperature: max. 250°C 2. Heating unit: no less than 220°C, within 60 seconds 3. Preheating unit: 150 to 180°C for 90 to 120 seconds 4. Number of times: no more than 2 times <p>* Solder composition: Sn-3Ag-0.5Cu</p> <p>(Note 1) This temperature profile is a recommended value.</p>
2. Recommended Hand Soldering Conditions	Temperature of soldering iron: max. 350, soldering time: within 3 seconds
3. Recommended Screen Thickness and Aperture Ratio (Pattern surface ratio)	Thickness: 0.10 mm, aperture ratio: 80% for lead section, 50% to 90% for grounding section(See the separate specifications for approval.)
4. Warpage of the Board	A maximum of 0.02 mm at the center of connector, as measured from either end of the connector
5. Cleaning Conditions	IPA cleaning is allowed. (Cleaning is not recommended because cleaning may change the mating/unmating feeling etc. Please contact us when you use other cleaning agents.)

●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.
	

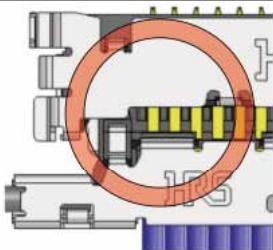
Handling Precautions

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.

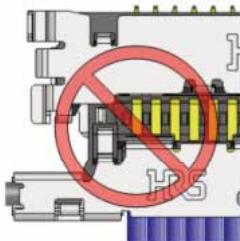
[Temporary insertion: Acceptable]

The case hole of the plug self-alignment section and the tip of the plug contact cannot be seen.



[Temporary insertion: Not acceptable]

Insufficient insertion. The case hole of the plug self-alignment section and the tip of the plug contact can be seen.



Plug self-alignment section
Tip section of plug contact



Section A



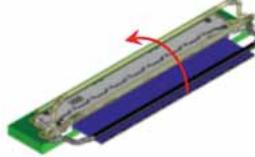
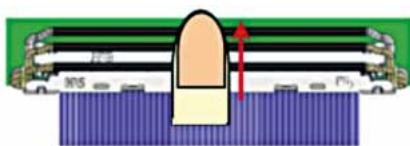
■ Locking

Rotating the bail latch engages the locking/unlocking mechanism.

1.How to Lock

Rotate the bail latch to lock.

Make sure that the bail latch rides over the latch holding section located on each end of the receptacle.(2 locations in total)



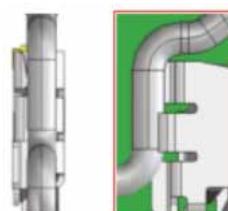
Enlarged view of section B

B



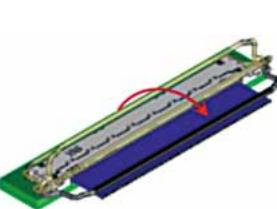
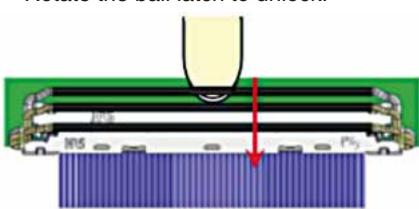
[Latch engagement: Acceptable]

The bail latch is riding over the latch holding section on the receptacle.



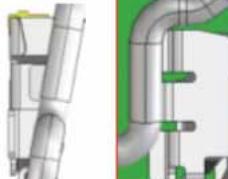
2.How to Unlock

Rotate the bail latch to unlock.



[Latch engagement: Not acceptable]

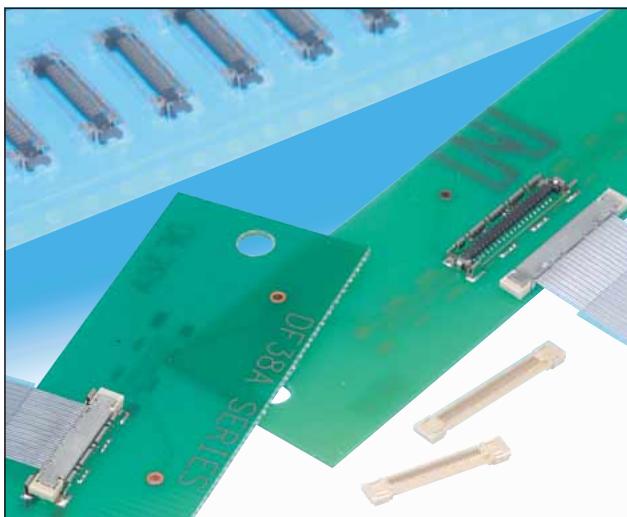
The bail latch is not riding over the latch holding section on the receptacle.



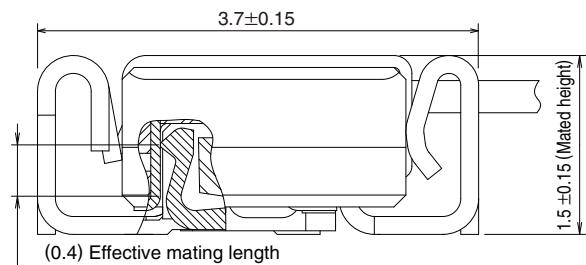
- For details on mating/unmating procedures, see the separate mating/unmating procedure sheet.
- Please note that mating/unmating without mounted on a PCB may cause damage and contact deformation to the connector.
- Please note that mating/unmating with excessive force in wrong directions may cause damage to the connector.
- During hand soldering, do not apply flux which will cause flux migration on connector.

0.3 mm Pitch, 1.5 mm Mated Height, Board- to-Fine Coaxial Cable Connectors

DF38 Series



High contact reliability – Effective mating length of 0.4 mm



■ Features

1. Small mated height and board occupied space

Small pitch (0.3mm) and mated height (1.5mm) allows use in space-restricted areas.

Plug's height of 1.3mm and width of 2.38mm allow its passage through narrow openings in small-diameter hinge applications.

2. Enhanced shielding and ground connections

Metal shells on the plug and receptacle connect to each other with a reliable multi-point ground contacts, assuring reliable ground connection and EMC protection.

3. Reliable lock

Fully mated condition is assured with reliable locks at 4 locations, confirming it with a distinct tactile click.

4. Reliable electrical and mechanical connection

Despite its small mated height, unique contact configuration assures highly reliable connection, with effective mating length of 0.4mm.

5. Solder wicking prevention

Nickel barriers prevent solder wicking in the critical contact areas.

6. Durable plug construction

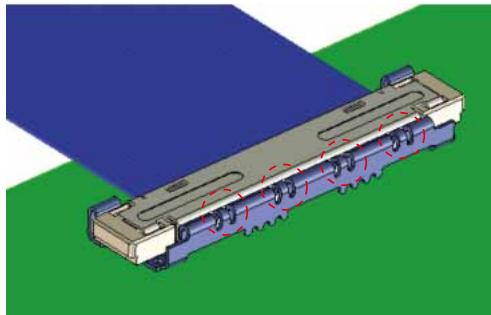
Formed metal shells on the top and side surfaces form a strong and rigid assembly.

7. RoHS, Halogen-free*

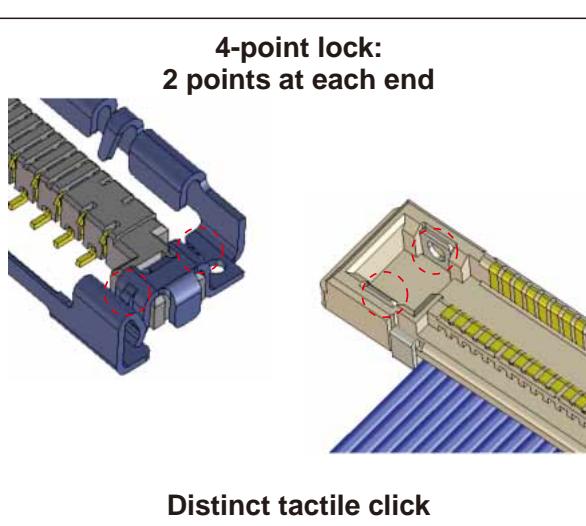
*As defined by IEC61249-2-21

Br-900 ppm maximum, Cl-900 ppm maximum, Cl+Br combined-1,500 ppm maximum

Enhanced shielding



Multi-point ground contacts



Distinct tactile click

■ Connector for conductivity tests

We have a line-up of connectors for inspection, usable for electrical testing of both plug and receptacle connectors.

■Specifications

Ratings	Current rating	AWG #42: 0.15 A Wire size AWG #44: 0.1 A (Note.3) AWG #46: 0.1 A	Operating temperature range Operating humidity range	-35 to +85°C (Note 1) RH 20% to 80%
	Voltage rating	30 V AC	Storage temperature range Storage humidity range	-10 to +60°C (Note 2) RH 40% to 70% (Note 2)

Item	Specification	Conditions
1.Insulation resistance	50MΩ min	100V DC
2.Withstanding voltage	No flashover or insulation breakdown	100 V AC / 1 minute
3.Contact resistance	Signal: 80mΩ max., Ground: 80mΩ max.	100mA (DC or 1,000Hz)
4.Vibration	No electrical discontinuity of 1 μs or longer	Frequency: 10 to 55 Hz, single amplitude of 0.75 mm, 3 directions, 2 hours
5.Humidity	Contact resistance (change from initial value) 50 mΩ max. Insulation resistance: 25 MΩ min.	96 hours at of 40 ±2°C, and humidity of 90 to 95%
6.Temperature cycle	Contact resistance (change from initial value) 50 mΩ max. Insulation resistance: 50 MΩ min.	-55°C → 5 to 35°C → 85°C → 5 to 35°C Time: 30 min. → 2 to 3 min. → 30 min. → 2 to 3 min. 5 cycles
7.Durability	Contact resistance (change from initial value) 50 mΩ max.	30 cycles
8.Resistance to soldering heat	No deformation of affecting performance	Reflow: At the recommended temperature profile Manual soldering: 350°C for 3 seconds

Note 1: Includes temperature rise caused by current flow.

Note 2: The term "storage" refers to products stored for a long period prior to mounting and use.

The operating temperature and humidity range covers the non-conducting condition of connectors after board mounting and the temporary storage conditions of transportation, etc.

Note 3: With only the connector portion at an elevated temperature level, the rated current value is set.

■Material

Product	Part	Material	Finish	Remarks
Receptacle	Insulator	LCP	Color: Black	UL94-V0
	Contacts	Phosphor bronze	Gold plating	_____
	Metal cover		Tin plating	_____
	Vacuum cap	Polyamide	Color: Black	UL94-HB
Plug	Insulator	LCP	Color: Natural, Black	UL94-V0
	Contacts	Phosphor bronze	Gold plating	_____
	Metal cover		Tin plating	_____

■ Ordering information

● Connector

DF 38 A J – * **S** – 0.3 **V** (**)

DF 38 J – * **P** – SHL

① Series name : DF	⑥ Connector type
② Series No. : 38	S : Receptacle
③ Insulator type/style Receptacle A : Standard Plug Blank : Standard	P : Plug
④ Connector style Receptacle/Shell J : Receptacle for conductivity tests Blank : Standard	⑦ Contact pitch : 0.3mm
⑤ Number of positions : 30, 32, 40	⑧ Termination type V : Straight SMT SD : Fine coaxial cable plug
	⑨ Packaging (51) : Embossed tape packaging
	⑩ Installation item (separate) SHL : Metal cover

■ Combinations

● Standard use

DF38A-*S-0.3V(**)

+ DF38-*P-ASSY

(DF38-*P-0.3SD(**)
DF38-*P-SHL)

Note: The product specification of the above combination is shown on page 2.

● Receptacle conductivity test

DF38A-*S-0.3V(**)

+ DF38J-*P-ASSY ... (Note)

(DF38-*P-0.3SD(**)
DF38J-*P-SHL)

Note: This harness item is only usable for the receptacle test.

For the product specification of the above combination, please contact our sales department.

● Plug conductivity test

DF38AJ-*S-0.3V(**) ... (Note)

+ DF38-*P-ASSY

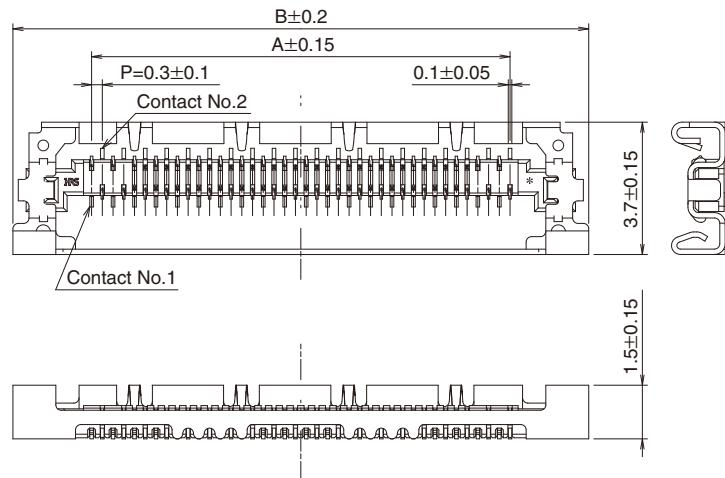
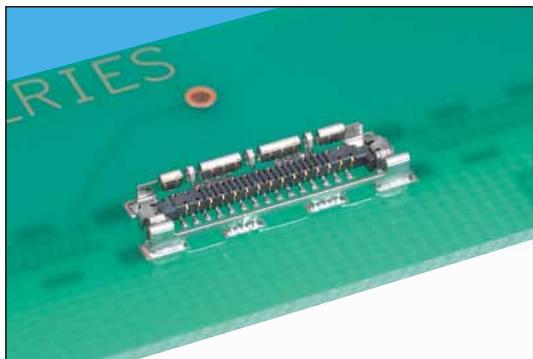
(DF38-*P-0.3SD(**)
DF38-*P-SHL)

Note: This harness item is only usable for the plug test.

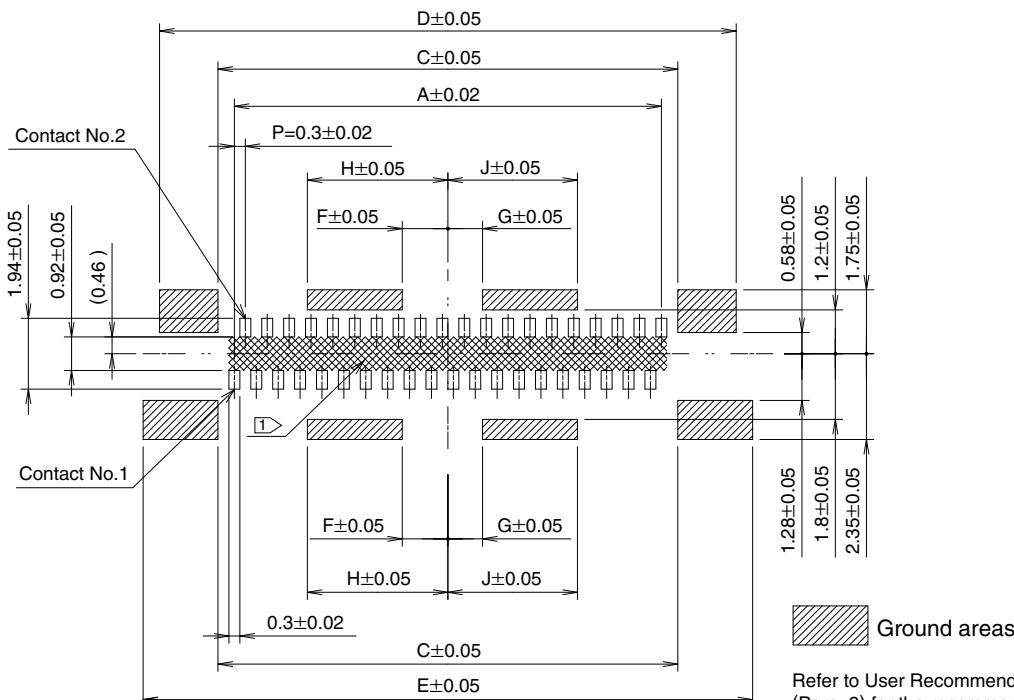
For the product specification of the above combination, please contact our sales department.

* : ASSY means a harness item.

■Receptacles



■Recommended PCB mounting pattern



Refer to User Recommendation page (Para. 3) for the recommended metal mask dimensions and open area ratios.

Note 1: Area indicated must be free of conductive traces or the conductive traces must be covered by resist film.

[Specifications number] - * * , (* *)
(51) : Embossed tape packaging
(5,000 pieces per reel)

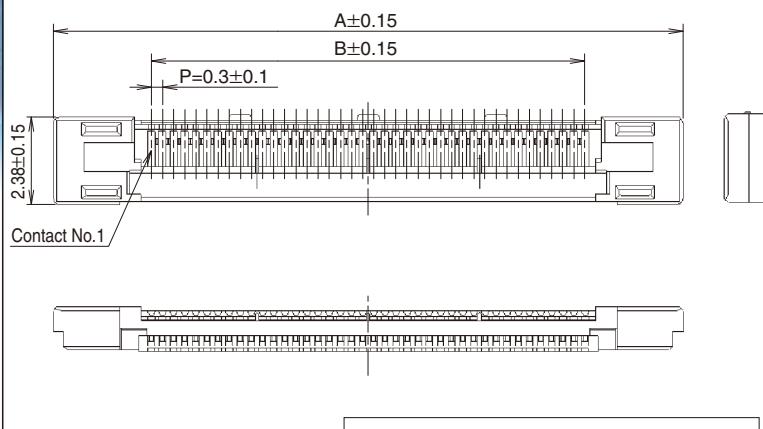
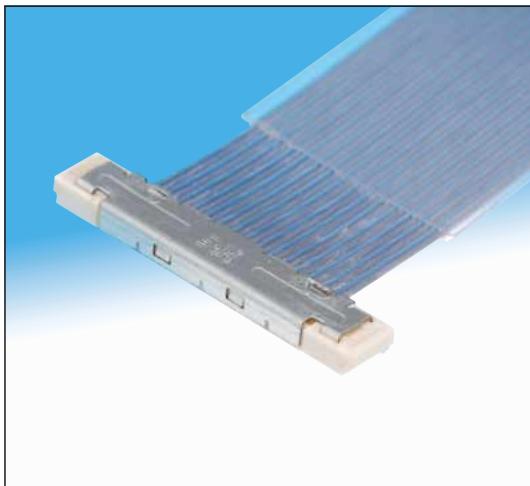
All dimensions: mm

Part Number	CL No.	Number of Contacts	A	B	C	D	E	F	G	H	J
DF38A-30S-0.3V(**)	662-4505-4-**	30	8.7	13.1	9.6	12.8	13.7	0.95	1.25	2.95	3.25
DF38A-32S-0.3V(**)	662-4028-7-**	32	9.3	13.7	10.2	13.4	14.3	1.25	0.95	3.25	2.95
DF38A-40S-0.3V(**)	662-4501-3-**	40	11.7	16.1	12.6	15.8	16.7	1.25	0.95	3.85	3.55

Note 1: Tape and reel packaging (5,000 pieces/reel).

Order by number of reels.

■Plug - separate metal cover required



[Specifications number] - * * , (* *)
 (51) : Embossed tape packaging
 (5,000 pieces per reel)

All dimensions: mm

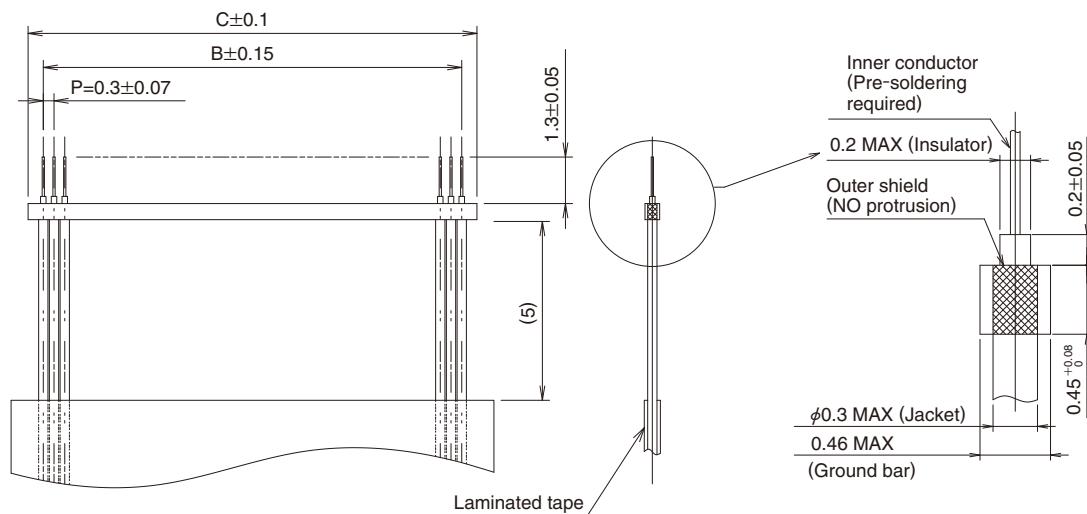
Part Number	CL No.	Number of Contacts	A	B	C
DF38B-30P-0.3SD(**)	662-4515-8-**	30	14.0	8.7	9.55
DF38-32P-0.3SD(**)	662-4027-4-**	32	14.6	9.3	10.15
DF38-40P-0.3SD(**)	662-4502-6-**	40	17.0	11.7	12.55

Note 1: Tape and reel packaging (5,000 pieces/reel).

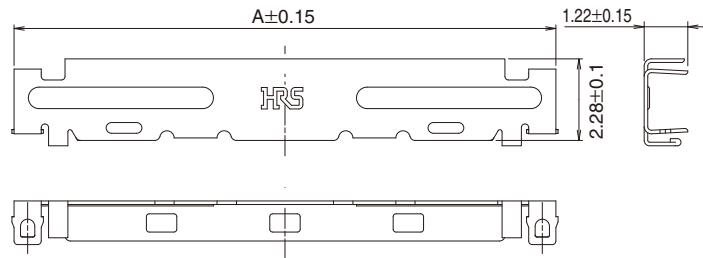
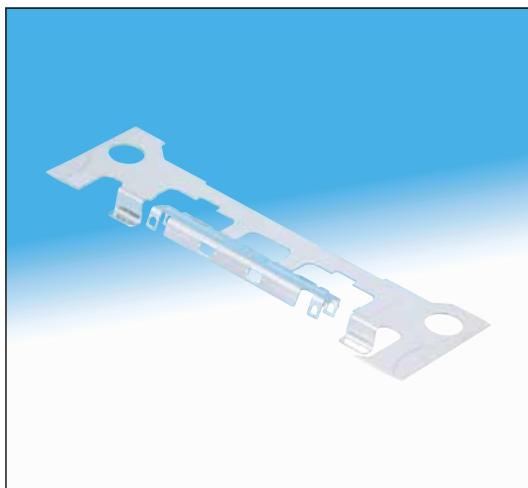
Order by number of reels.

Note 2: The metal cover is required for fine coaxial cable termination.

■Recommended Fine Coaxial Cable Preparation



Note 1: Contact Hirose for Termination Procedures.

■Metal cover - Required for assembly of the Plug

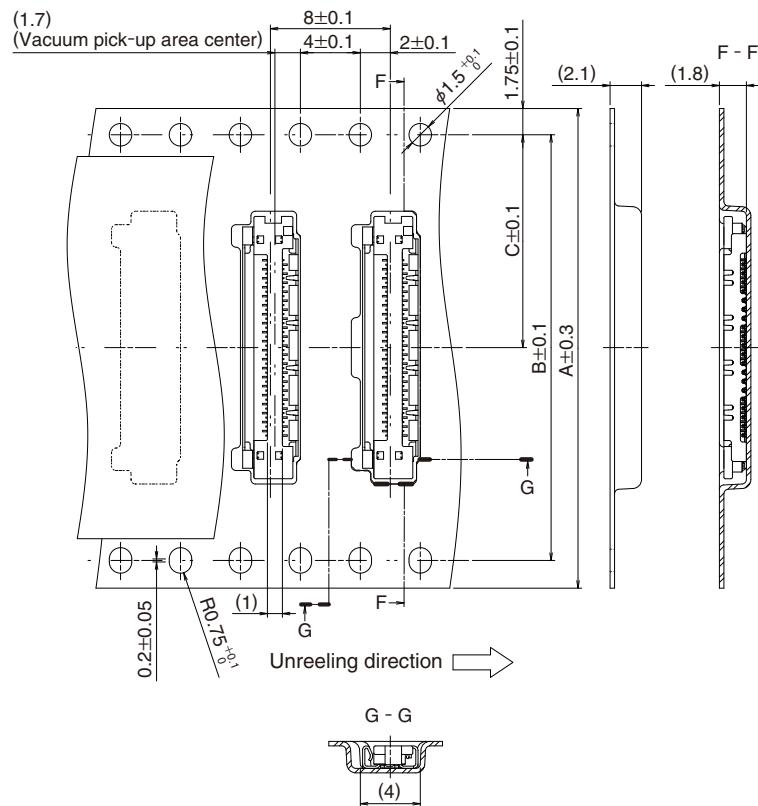
All dimensions: mm

Part Number	CL No.	Number of Contacts	A
DF38-30P-SHL	662-4507-0	30	12.15
DF38-32P-SHL	662-4029-0	32	12.75
DF38-40P-SHL	662-4503-9	40	15.15

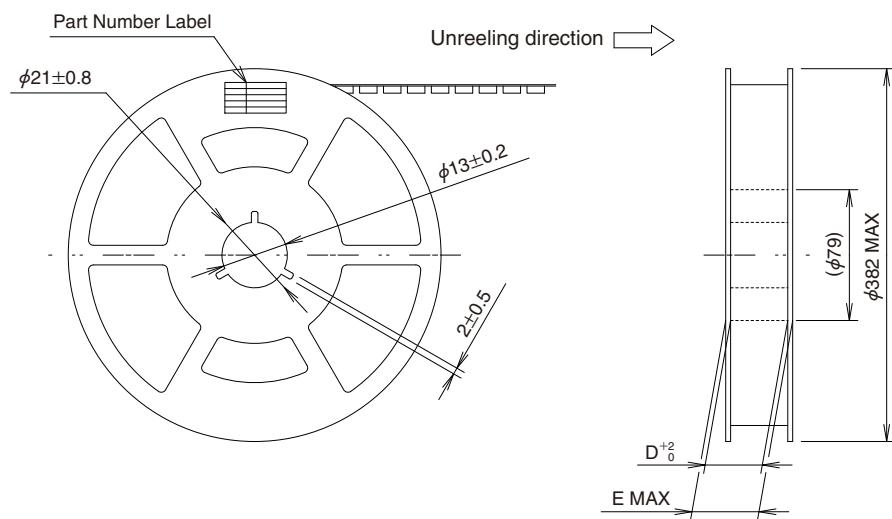
Note 1: Reel packaging (10,000 pieces/reel).
Order by number of reels.

■Embossed Carrier Tape Dimensions (JIS C 0806)

●Receptacle



●Reel Dimensions

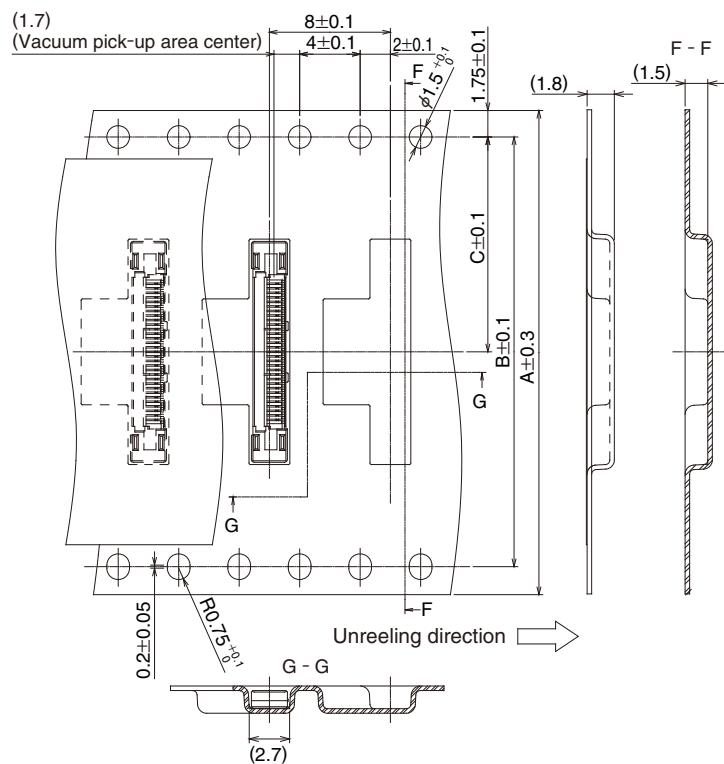


All dimensions: mm

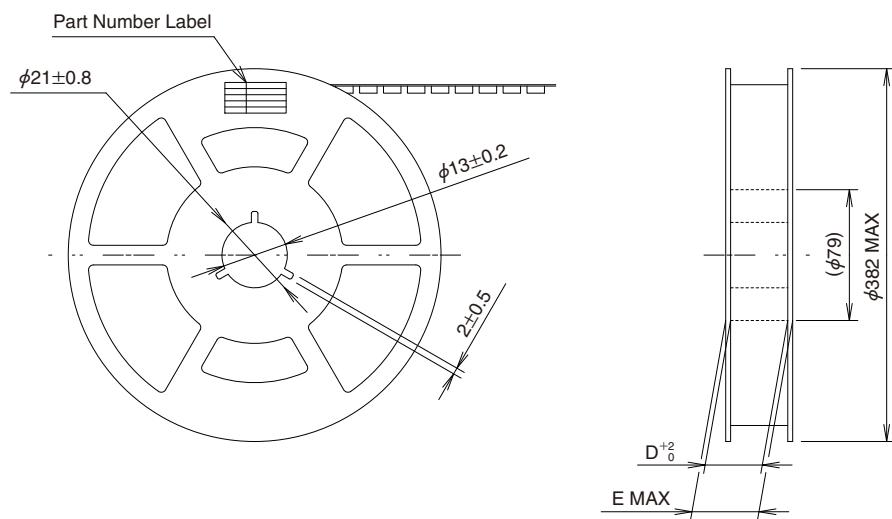
Part Number	CL No.	Number of Contacts	A	B	C	D	E
DF38A-30S-0.3V(51)	662-4505-4-51	30	32	28.4	14.2	32.4	38.4
DF38A-32S-0.3V(51)	662-4028-7-51	32	32	28.4	14.2	32.4	38.4
DF38A-40S-0.3V(51)	662-4501-3-51	40	32	28.4	14.2	32.4	38.4

■Embossed Carrier Tape Dimensions (JIS C 0806)

●Plug



●Reel Dimensions



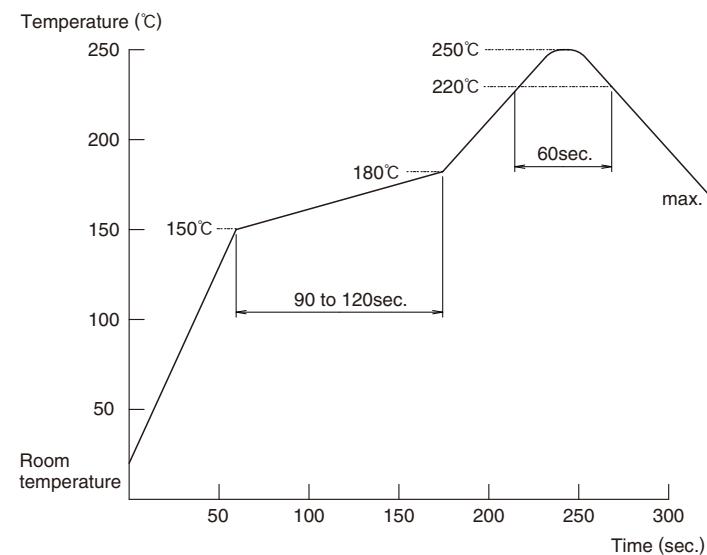
All dimensions: mm

Part Number	CL No.	Number of Contacts	A	B	C	D	E
DF38-30P-0.3SD(51)	662-4506-7-51	30	32	28.4	14.2	32.4	38.4
DF38-32P-0.3SD(51)	662-4027-4-51	32	32	28.4	14.2	32.4	38.4
DF38-40P-0.3SD(51)	662-4502-6-51	40	32	28.4	14.2	32.4	38.4

■ Extraction tool

For details about the extraction tool, please contact your Hirose sales representative.

■ Usage Recommendations

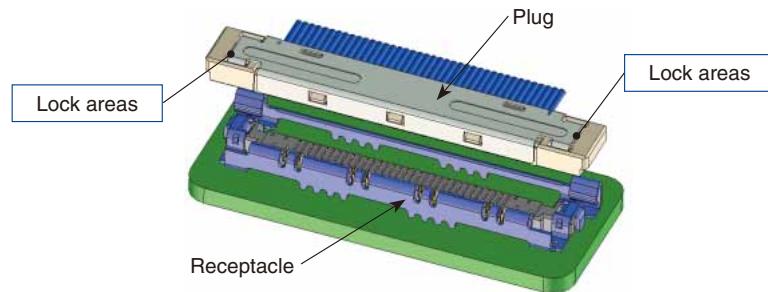
1. Recommended temperature profile	 <p>Solder composition: Paste, 96.5%Sn/3.0%Ag/0.5%Cu</p> <p>Note 1: Up to 2 cycles of Reflow soldering are possible under the same conditions, provided that there is a return to normal temperature between the first and second cycle.</p> <p>Note 2: The temperature profile indicates the board surface temperature at the point of contacts with the connector terminals.</p>
2. Recommended manual soldering	Manual soldering: 350°C for 3 seconds Do NOT use flux compound when manual soldering.
3. Recommended screen thickness and open area ratio (Pattern area ratio)	Thickness: 0.1 mm Open area ratio: Lead terminal: 80% Ground terminal: 100%
4. Board warpage	Maximum of 0.02mm at the connector center, with both ends of the connector as reference points.
5. Cleaning conditions	Refer to "Nylon Connector Use Handbook".
6. Precautions	<ul style="list-style-type: none"> * Mating and un-mating of the connectors when not soldered on the boards is not recommended as this may cause deformation of the terminals, damage to the contacts or insulators. * When mating/un-mating do not twist or lift by the corners. Apply the forces evenly across the entire length and width of the connectors taking care NOT to damage or deform soldered terminations. * Slight discoloration on the insulating materials will not affect form, fit or function of the connectors.

■Precautions

Precautions

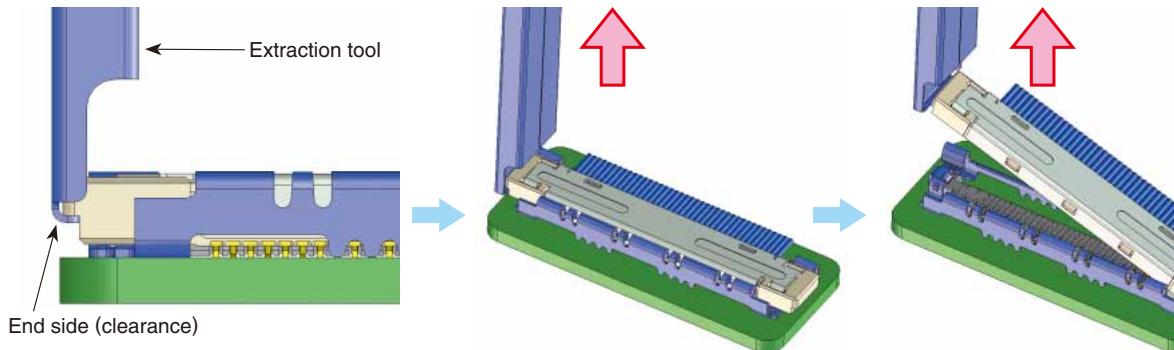
■Mating

Mate the plug with the receptacle by pressing straight against the entire plug surface.
Do NOT un-mate the plug while holding by the terminated cable.



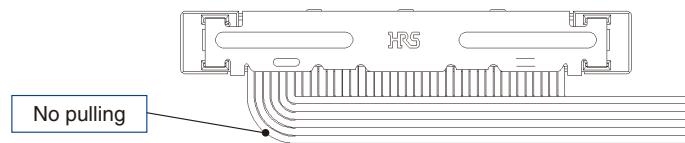
■Un-mating

Use a dedicated extraction tool to un-mate the plug. Insert the tool under either end of the plug (clearance) and pull straight up as illustrated.
Do NOT un-mate the plug while holding by the terminated cable.



■Routing of the fine coaxial cable after termination

Allow sufficient clearance between the plug and the fine coaxial cable to avoid sharp bend, excessive twist or pull forces applied to the connector.



■Other

- Do NOT mate / un-mate the connectors when receptacle is not mounted on the board.
- Different production lots may exhibit different shades of the insulator materials. No affect on form, fit or function of the connectors.
- Rework of the soldered terminations on the board-mounted receptacles is not possible.
- Sides of the metal cover protrude over the termination areas.
- Do not mate / un-mate the connectors when receptacle is not mounted on the board.

Алматы (7273)495-231
Ангарск (3955)60-70-56
Архангельск (8182)63-90-72
Астрахань (8512)99-46-04
Барнаул (3852)73-04-60
Белгород (4722)40-23-64
Благовещенск (4162)22-76-07
Владивосток (423)249-28-31
Владивосток (8672)28-90-48
Владивосток (4922)49-43-18
Волгоград (844)278-03-48
Вологда (8172)26-41-59
Воронеж (473)204-51-73
Екатеринбург (343)384-55-89

Иваново (4932)77-34-06
Ижевск (3412)26-03-58
Иркутск (395)279-98-46
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Калуга (4842)92-23-67
Кемерово (3842)65-04-62
Киров (8332)68-02-04
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Кострома (4942)77-07-48
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Липецк (4742)52-20-81

Магнитогорск (3519)55-03-13
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Смоленск (4812)29-41-54
Сочи (862)225-72-31
Ставрополь (8652)20-65-13
Сургут (3462)77-98-35
Сыктывкар (8212)25-95-17
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Тверь (4822)63-31-35

Тольятти (8482)63-91-07
Томск (3822)98-41-53
Тула (4872)33-79-87
Тюмень (3452)66-21-18
Ульяновск (8422)24-23-59
Улан-Удэ (3012)59-97-51
Уфа (347)229-48-12
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Челябинск (351)202-03-61
Череповец (8202)49-02-64
Чита (3022)38-34-83
Якутск (4112)23-90-97
Ярославль (4852)69-52-93