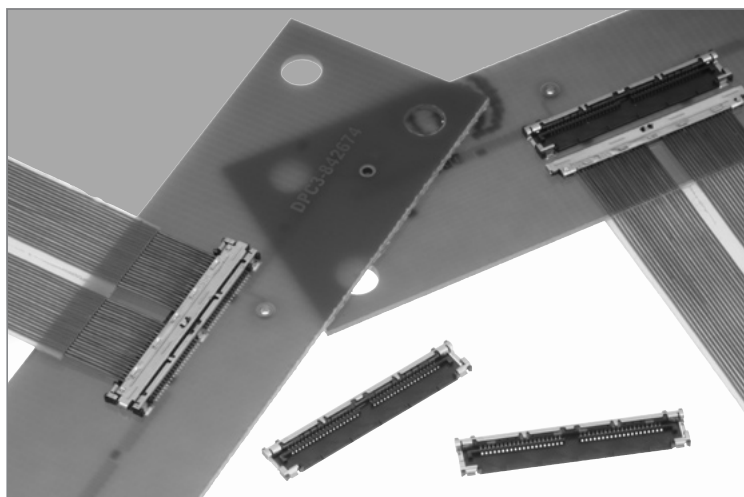


NEW

# 0.35 mm Pitch, Vertical mating, Board-to-Fine Coaxial Cable Connectors

## DF54 Series



### ■Features

#### 1.Small mated height and board occupied space

Small pitch (0.35mm) and mated height (0.94mm) allows use in space-restricted areas.

It's a small connector with mated height of 0.94mm (1mm MAX) and depth of 3.7mm.

#### 2.Plugs can pass through a small dia. hinge

Plugs can pass through narrow openings in small-diameter( $\phi 2.8\text{mm}$ ) hinge applications.(40pos., #44 AWG)

#### 3.Reliable electrical and mechanical connection

Despite its small mated height, unique contact configuration assures highly reliable connection, with effective mating length of 0.21mm.(fig.1)

#### 4. Durable plug construction

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 4locations, confirming it with a distinct tactile click.

#### 7. Solder wicking prevention

Nickel barriers prevent solder wicking in the critical contact areas.

### ■Connectors for conductivity tests

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

#### High contact reliability

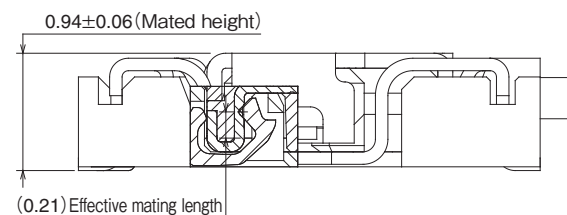
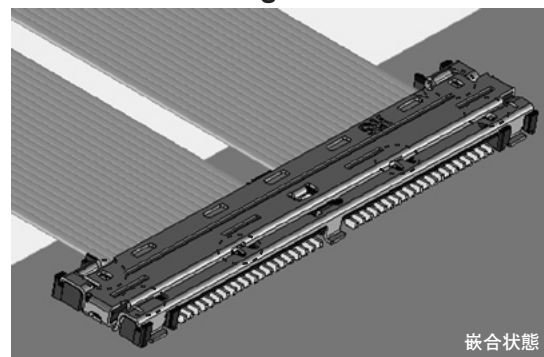


Figure. 1

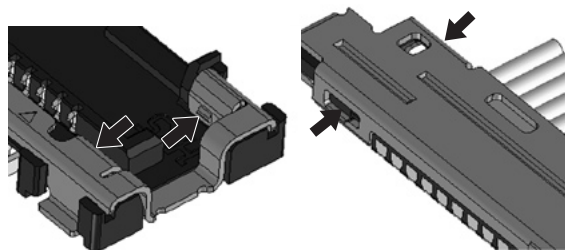
#### Enhanced shielding



Multi-point ground contacts

Figure. 2

#### Distinct tactile click



4-point lock : 2 points at each end

Figure. 3

## DF54 Series●0.35 mm Pitch, Vertical mating, Board-to-Fine Coaxial Cable Connectors

### ■Specifications

Ratings	Current rating	Wire size AWG #42 0.2A Wire size AWG #44 0.15A (Note3) Wire size AWG #46 0.10A	Operating temperature range: Operating humidity range:	-35 to +85°C (Note 1) RH 20% to 80%
	Voltage rating 30 Vrms AC	30V AC	Storage temperature range: Storage humidity range:	-10 to +60°C (Note 2) RH 40% to 70%

Item	Specification	Conditions
1. Insulation resistance	50 MΩ min.	100 V DC
2. Withstanding voltage	No flashover or insulation breakdown	100 Vrms AC / 1 minute
3. Contact resistance	Signal:80mΩ max, Ground 80mΩ max	100 mA (DC or 1,000Hz)
4. Vibration	No electrical discontinuity of 1 μs or longer	Frequency: 10 to 55 Hz, single amplitude of 0.75mm, 10 cycles in each of the 3 directions
5. Humidity	NContact 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: 25 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.	20 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 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.

Note 4: Information contained in this catalog represents general requirements for this Series. Contact us for the drawings and specifications for a specific part number shown.

### ■Material

Product	Part	Material	Finish	Remarks
Receptacle	Insulator	LCP	Color:Black	UL94V-0
	Contacts	Phosphor bronze	Gold plated	——
	Metal fittings	Phosphor bronze	Tin plated	——
Plug	Insulator	LCP	Color:Black	——
	Contacts	Phosphor bronze	Gold plated	UL94V-0
	Metal cover	Stainless	Tin plated	——
Shell	Metal cover	Stainless	Tin plated	——

## ■Ordering information

### ●Connector

**DF 54 J - \* S - 0.35 V (\*\*)**

① ② ③ ④ ⑤ ⑥ ⑦ ⑧

**DF 54 J - \* P - SHL**

① ② ③ ④ ⑤ ⑨

① Series name : DF	⑥ Contact pitch : 0.35mm
② Series No. : 54	⑦ Termination type V : Straight SMT SD : Fine coaxial cable plug
③ Connector style Receptacle/Shell J : Connector for conductivity tests Blank : Standard	⑧ Packaging (51) : Embossed tape packaging
④ Number of positions : 20, 30, 40	⑨ Installation item(separate) SHL : Metal cover
⑤ Connector type S : Receptacle P : Plug	

## ■Combinations

### [Standard use]

DF54-\*S-0.35V(\*\*) +  $\left[ \begin{array}{l} \text{DF54-*P-ASSY} \\ \text{DF54-*P-0.35SD(**)} \\ \text{DF54-*P-SHL} \end{array} \right]$

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

### [Receptacle conductivity test]

DF54-\*S-0.35V(\*\*) +  $\left[ \begin{array}{l} \text{DF54J-*P-ASSY(Note)} \\ \text{DF54-*P-0.35SD(**)} \\ \text{DF54J-*P-SHL} \end{array} \right]$

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 for conductivity test]

DF54J-\*S-0.35V(\*\*)(Note) +  $\left[ \begin{array}{l} \text{DF54-*P-ASSY} \\ \text{DF54-*P-0.35SD(**)} \\ \text{DF54-*P-SHL} \end{array} \right]$

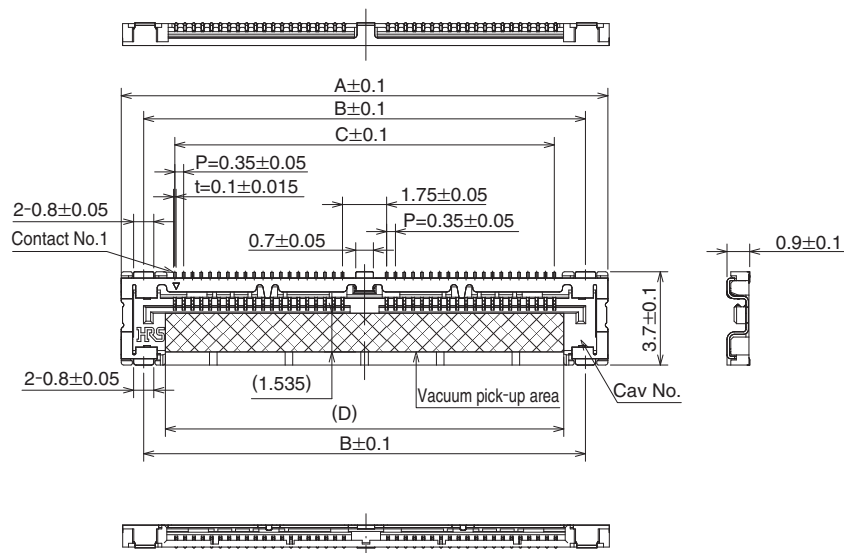
Note : This harness item is only usable for the plugs test.

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

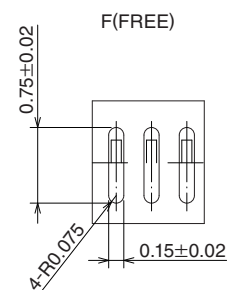
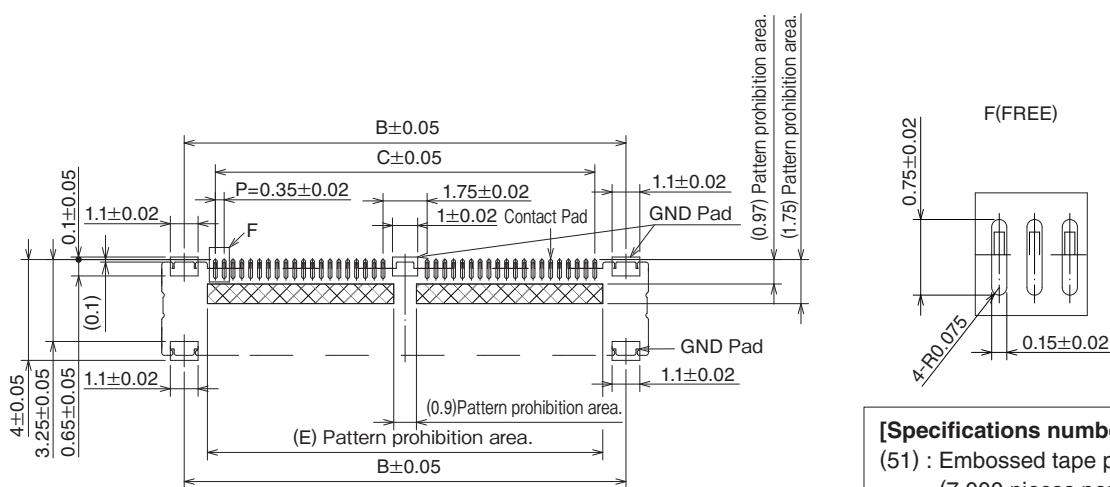
\* : ASSY means a harness item.

## DF54 Series 0.35 mm Pitch, Vertical mating, Board-to-Fine Coaxial Cable Connectors

### Receptacles(SMT)



### Recommended PCB mounting pattern



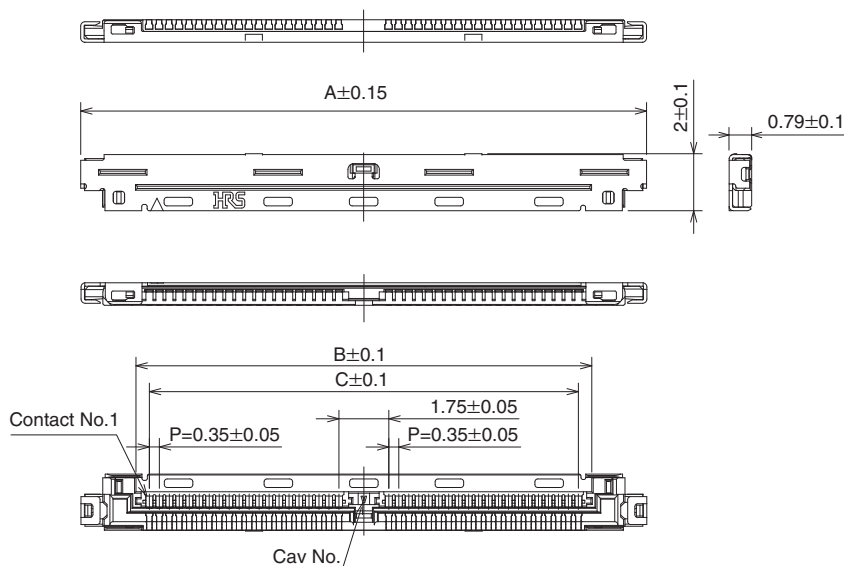
[Specifications number] - \*\*, (\*\*)  
(51) : Embossed tape packaging  
(7,000 pieces per reel)

Unit : mm

Part Number	CL No.	Number of contacts	A	B	C	D	E
DF54-20S-0.35V(**)	Under planning	20	12.30	10.52	8.05	(8.80)	(8.68)
DF54-30S-0.35V(**)	Under planning	30	15.80	14.02	11.55	(12.30)	(12.18)
DF54-40S-0.35V(**)	662-6000-9-*	40	19.30	17.52	15.05	(15.80)	(15.68)

Note 1 : Tape and reel packaging (7,000 pieces/reel). Order by number of reels.

## ■Plugs



**[Specifications number] - \* \*, (\* \*)**  
 (51) : Embossed tape packaging  
 (7,000 pieces per reel)

Unit : mm

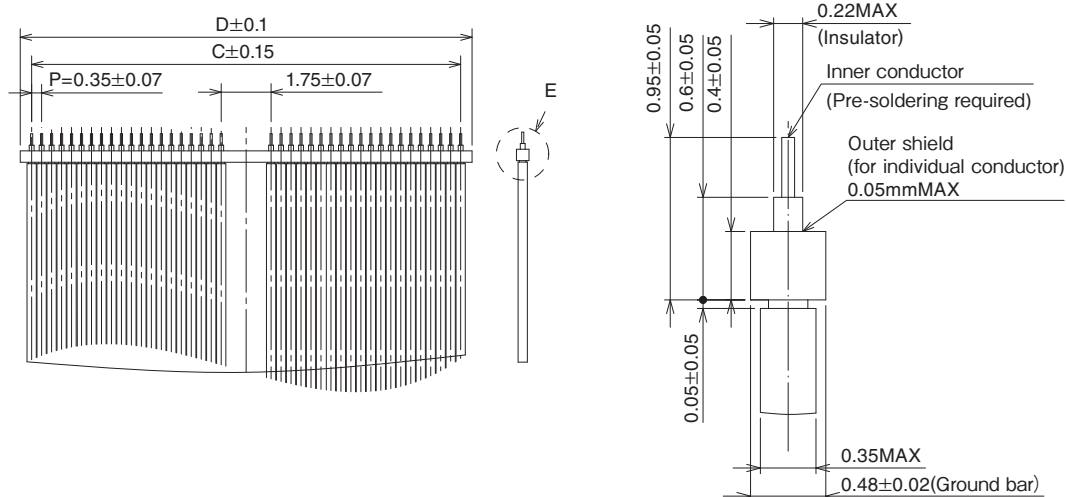
Part Number	CL No.	Number of contacts	A	B	C	D
DF54-20P-0.35SD(**)	Under planning	20	12.85	8.99	8.05	8.85
DF54-30P-0.35SD(**)	Under planning	30	16.35	12.49	11.55	12.35
DF54-40P-0.35SD(**)	662-6001-1-*	40	19.85	15.99	15.05	15.85

Note 1 : Tape and reel packaging (7,000 pieces/reel). Order by number of reels.

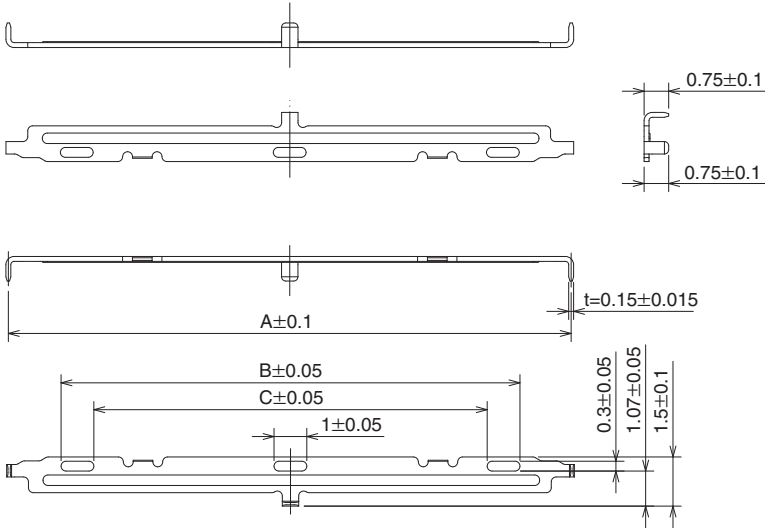
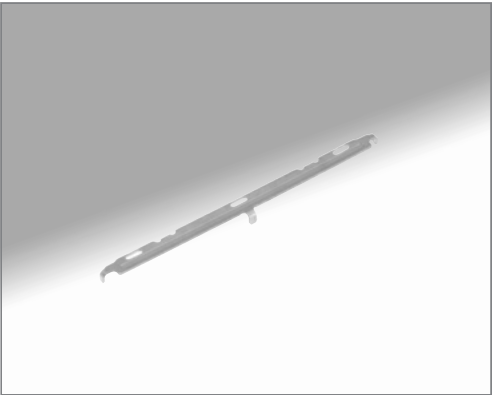
Note 2 : The metal cover(DF54-\*P-SHL) is required for fine coaxial cable termination.

## ■Recommended Fine Coaxial Cable Preparation

E(FREE)



■Metal cover



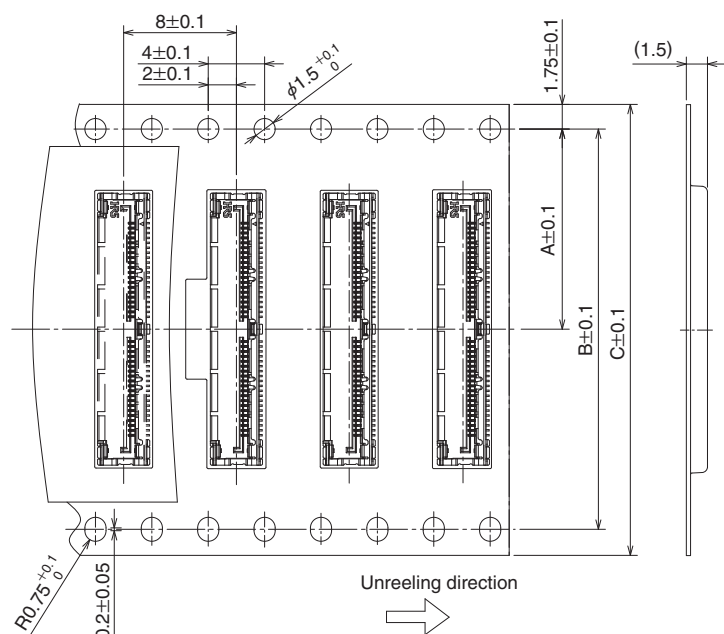
Unit : mm

Part Number	CL No.	Number of contacts	A	B	C
DF54-20P-SHL	Under planning	20	10.17	7.00	5.00
DF54-30P-SHL	Under planning	30	13.67	10.50	8.50
DF54-40P-SHL	662-6002-4	40	17.17	14.00	12.00

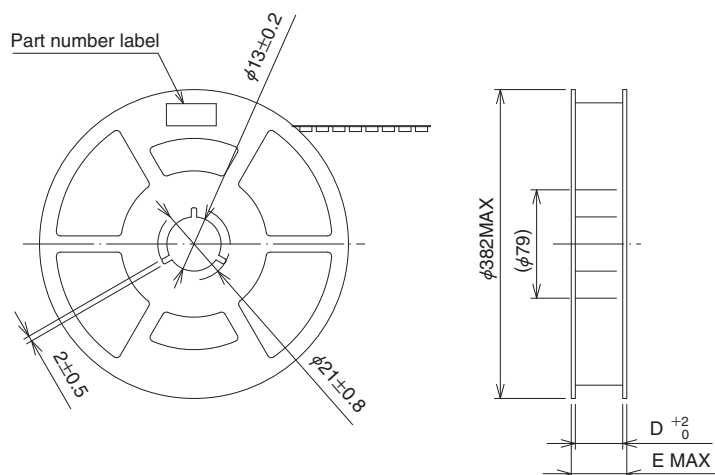
Note 1: Tape and reel packaging (10,000 pieces/reel). Order by number of reels.

## ■Packaging Specification

### ●Embossed Carrier Tape Dimensions—Receptacles



### ●Reel Dimensions



Unit : mm

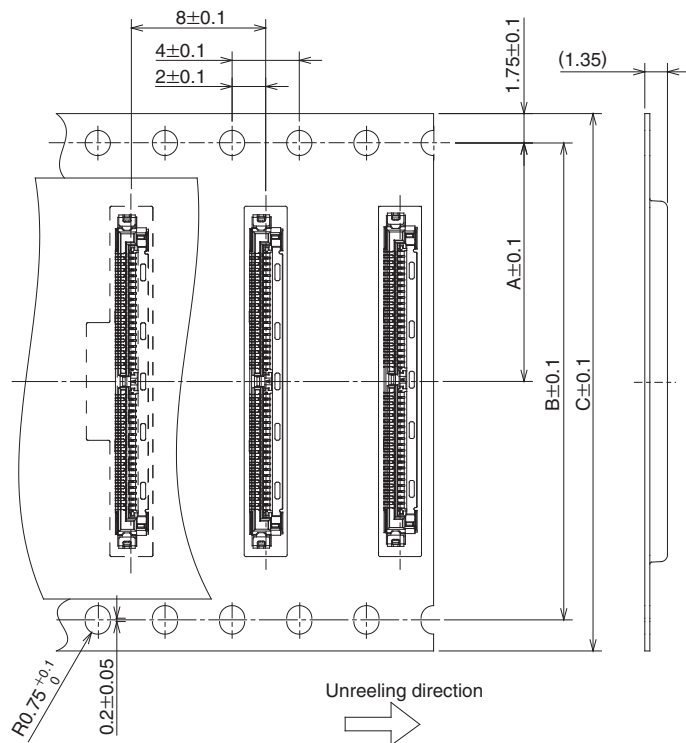
Part Number	CL No.	Number of contacts	A	B	C	D	E
DF54-20S-0.35V(51)	Under planning	20	11.5	—	24.0	24.4	30.4
DF54-30S-0.35V(51)	Under planning	30	14.2	28.4	32.0	32.4	38.4
DF54-40S-0.35V(51)	662-6000-9-51	40	14.2	28.4	32.0	32.4	38.4

Embossed tape will have perforated feed holes on single side(20pos.)

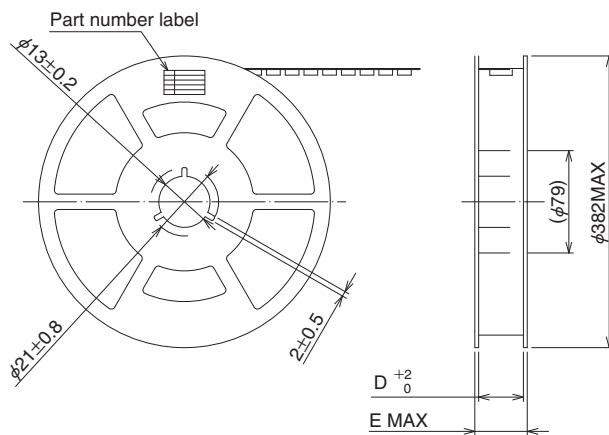
## DF54 Series●0.35 mm Pitch, Vertical mating, Board-to-Fine Coaxial Cable Connectors

### ■Packaging Specification

#### ●Embossed Carrier Tape Dimensions—Plugs



#### ●Reel Dimensions



Unit : mm

Part Number	CL No.	Number of contacts	A	B	C	D	E
DF54-20P-0.35SD(51)	Under planning	20	11.5	—	24.0	24.4	30.4
DF54-30P-0.35SD(51)	Under planning	30	14.2	28.4	32.0	32.4	38.4
DF54-40P-0.35SD(51)	662-6001-1-51	40	14.2	28.4	32.0	32.4	38.4

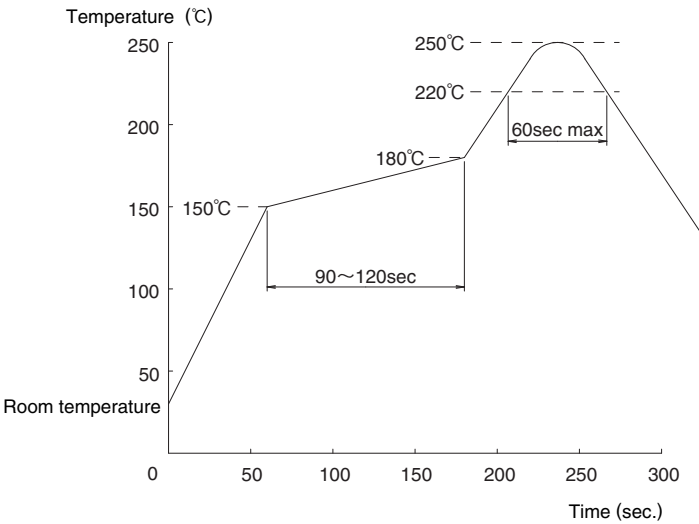
Embossed tape will have perforated feed holes on single side(20pos.)



■Extraction tool

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

■Usage Recommendations

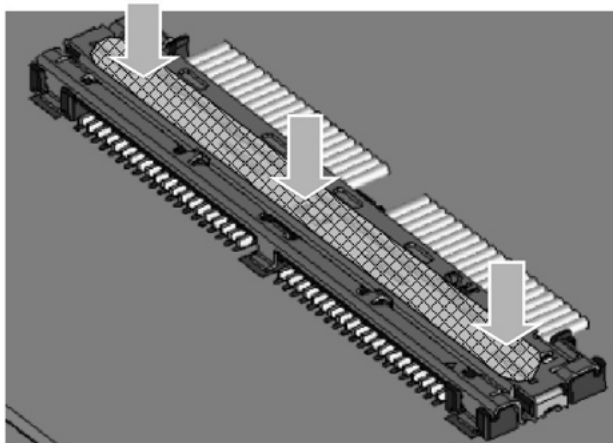
1.Recommended temperature profile	<div><p>Solder composition : Paste, 96.5%Sn/3.0%Ag/0.5%Cu</p><p>Note 1: Up to 2 cycles of Reflow soldering are possible under the same conditions, provided that there is a return to normal temperature between the first and second cycle.</p><p>Note 2: The temperature profile indicates the board surface temperature at the point of contacts with the connector terminals.</p></div>
2.Recommended manual soldering	Manual soldering: 350℃ for 3 seconds Do NOT flux compound when manual soldering
3.Recommended screen thickness and open area ratio (Pattern area ratio)	Standard thickness 0.1mm Open area ratios : Lead termnal 100% : Ground termnal 100%
4.Board warpage	Maximum of 0.02 mm at the connector center, with both ends of the connector as reference points.
5.Cleaning conditions	Refer to "Nylon Connector Use Handbook".

## ■Precautions

### Precautions

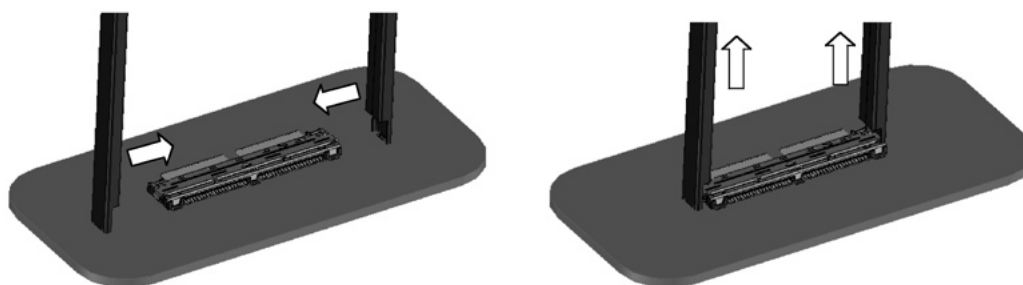
#### ■Mating

Mate the plug with the 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 to un-mate the plug.  
Insert the tool under either end of the plug and pull straight up as illustrated.



■Do not mate / un-mate the connectors when receptacle is not mounted on the board.

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

■Excessive scoop insertion or extraction may result in damage.