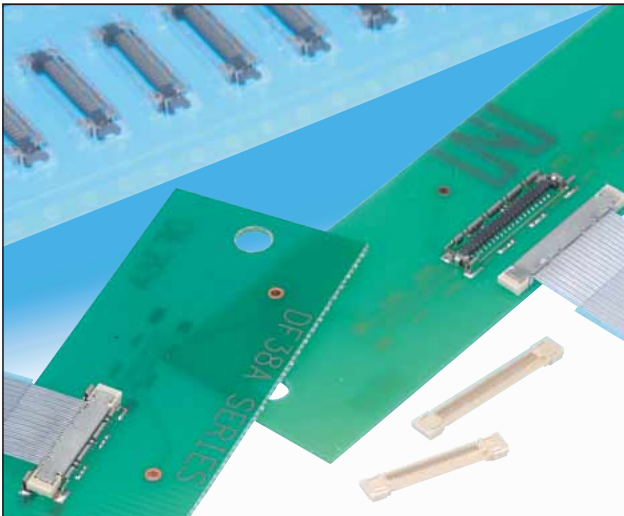
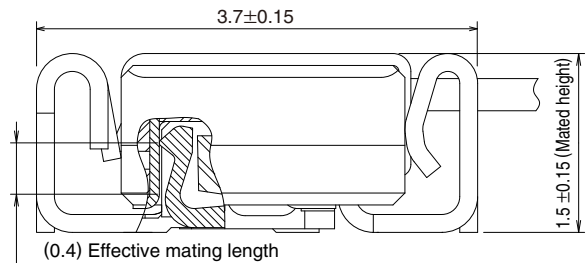


# 0.3 mm Pitch, 1.5 mm Mated Height, Board- to-Fine Coaxial Cable Connectors

## 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

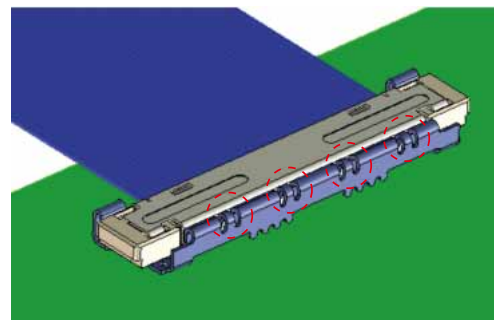
Formed metal shells on the top and side surfaces form a strong and rigid assembly.

#### 7. RoHS, Halogen-free\*

\*As defined by IEC61249-2-21

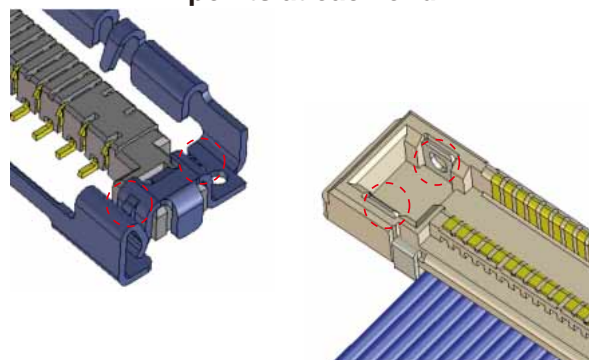
Br-900 ppm maximum, Cl-900 ppm maximum, Cl+Br combined-1,500 ppm maximum

### Enhanced shielding



**Multi-point ground contacts**

**4-point lock:  
2 points at each end**



**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 | Wire size<br>AWG #42: 0.15 A<br>AWG #44: 0.1 A (Note.3)<br>AWG #46: 0.1 A | Operating temperature range<br>Operating humidity range | -35 to +85°C (Note 1)<br>RH 20% to 80%          |
|         | Voltage rating | 30 V AC   | Storage temperature range<br>Storage humidity range     | -10 to +60°C (Note 2)<br>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)<br>50 mΩ max.<br>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)<br>50 mΩ max.<br>Insulation resistance: 50 MΩ min. | -55°C → 5 to 35°C → 85°C → 5 to 35°C<br>Time: 30 min. → 2 to 3 min. → 30 min. → 2 to 3 min.<br>5 cycles |
| 7. Durability                   | Contact resistance (change from initial value)<br>50 mΩ max.                                      | 30 cycles   |
| 8. Resistance to soldering heat | No deformation of affecting performance   | Reflow: At the recommended temperature profile<br>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 (\*\*)**  
 ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

**DF 38 J - \* P - SHL**  
 ① ② ④ ⑤ ⑥ ⑩

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

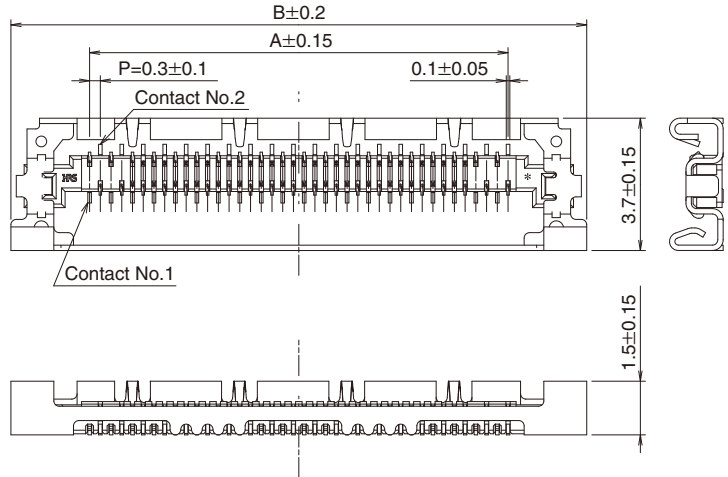
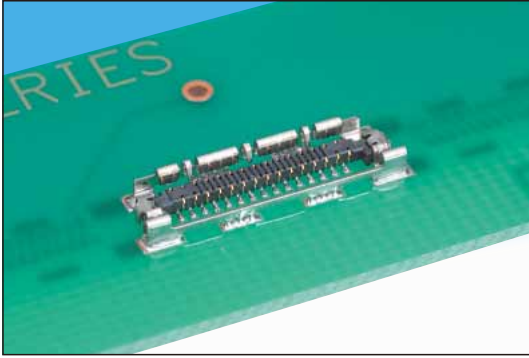
DF38AJ-\*S-0.3V(\*\*) ... (Note) + DF38-\*P-ASSY  
 ( DF38-\*P-0.3SD(\*\*)  
 DF38-\*P-SHL )

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

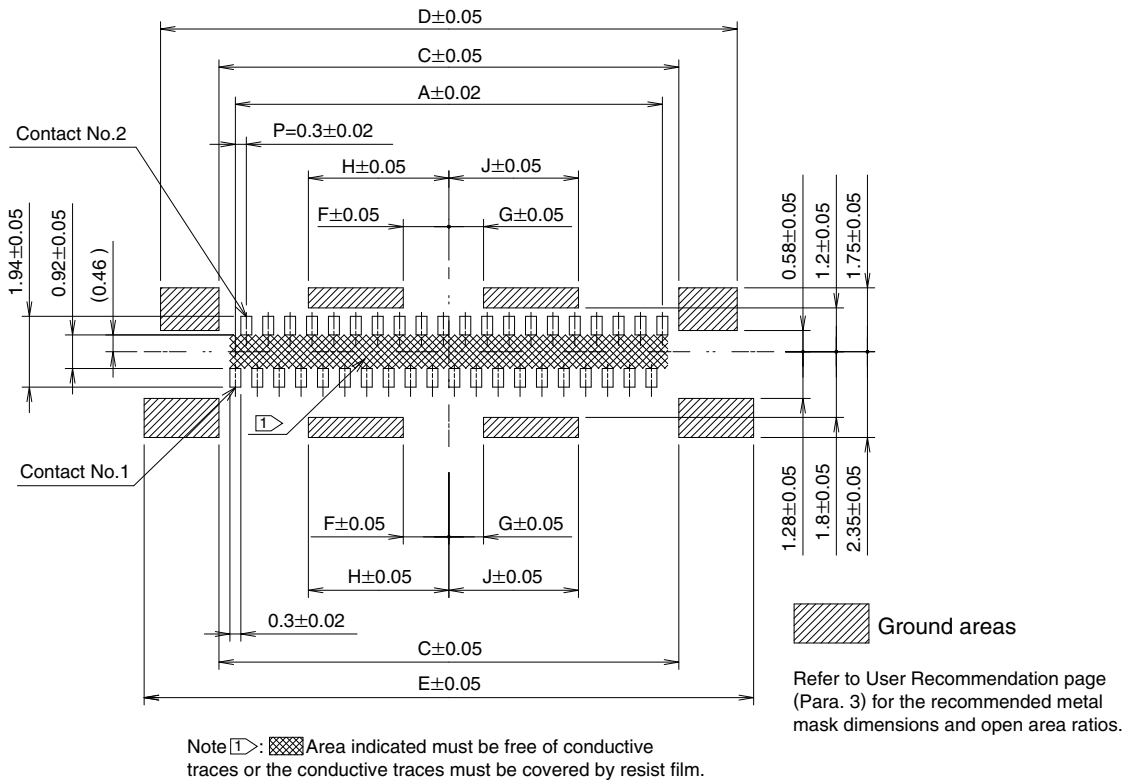
For the product specification of the above combination, please contact our sales department.

\* : ASSY means a harness item.

## Receptacles



## Recommended PCB mounting pattern



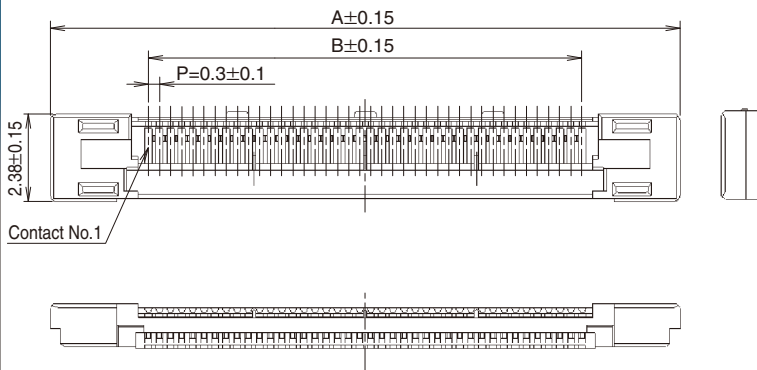
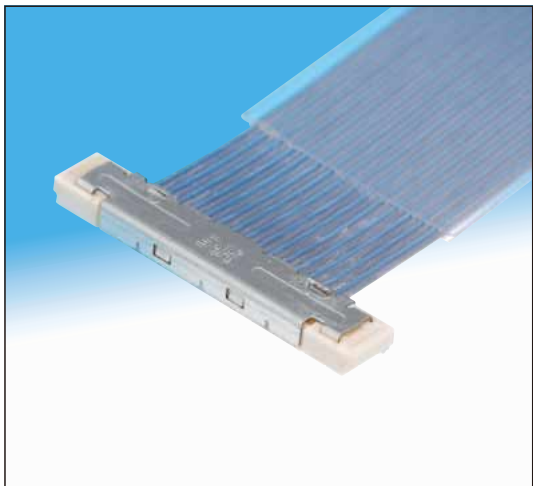
[Specifications number] - \*\*, (\*\*)  
 (51) : Embossed tape packaging  
 (5,000 pieces per reel)

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

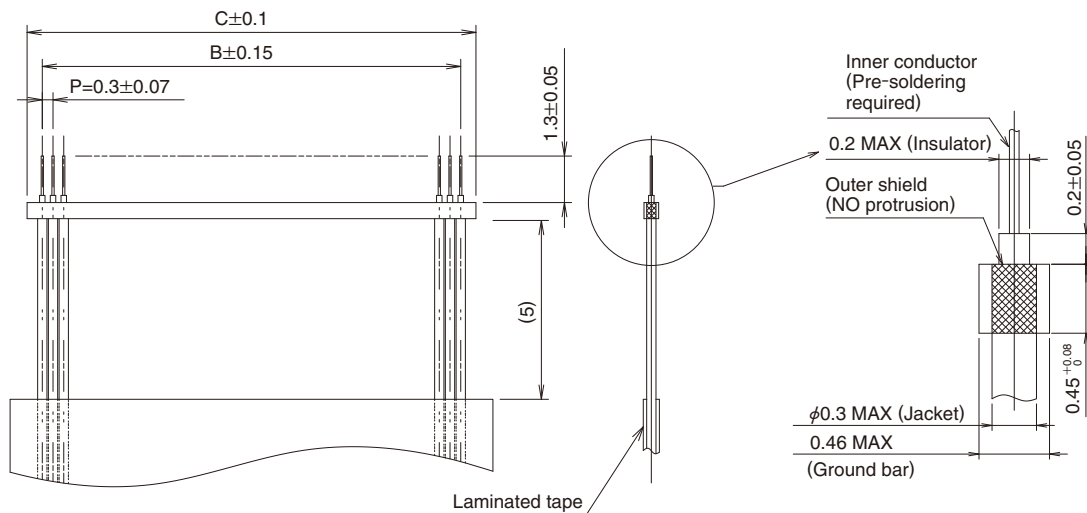
| Part Number         | CL No.         | Number of Contacts | A    | B    | C     |
|---------------------|----------------|--------------------|------|------|-------|
| DF38B-30P-0.3SD(**) | 662-4515-8-**- | 30                 | 14.0 | 8.7  | 9.55  |
| DF38-32P-0.3SD(**)  | 662-4027-4-**- | 32                 | 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.

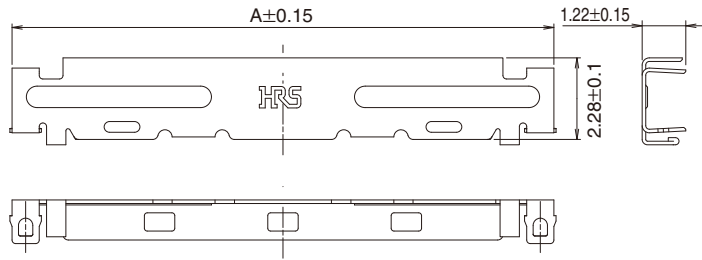
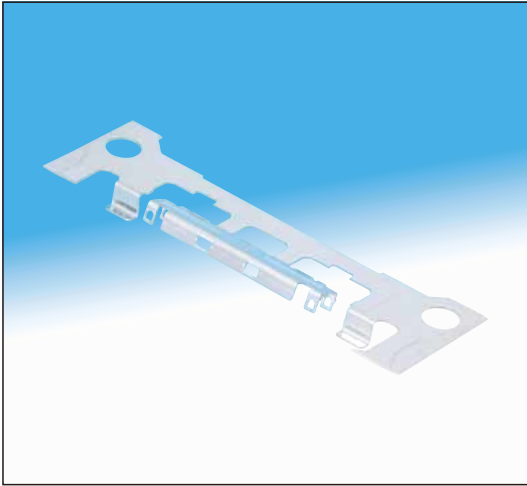
Note 2: The metal cover is required for fine coaxial cable termination.

## ■ Recommended Fine Coaxial Cable Preparation



Note 1: Contact Hirose for Termination Procedures.

## ■ Metal cover - Required for assembly of the Plug



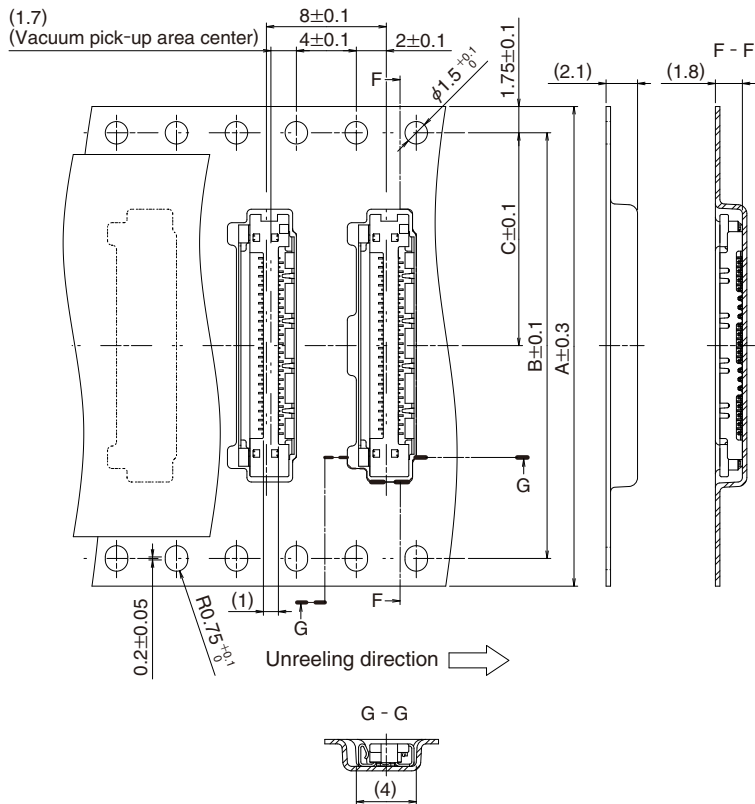
All dimensions: mm

| 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 |

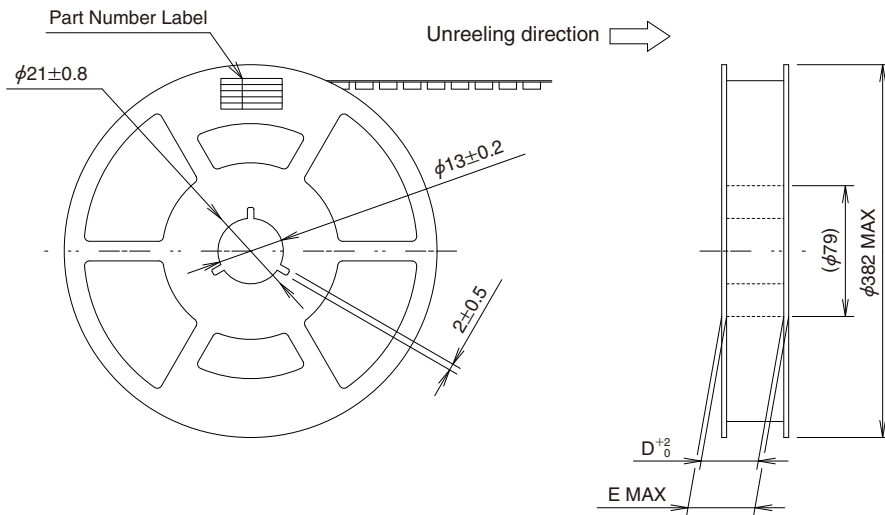
Note 1: Reel packaging (10,000 pieces/reel).  
Order by number of reels.

## ■ Embossed Carrier Tape Dimensions (JIS C 0806)

### ● Receptacle



### ● Reel Dimensions

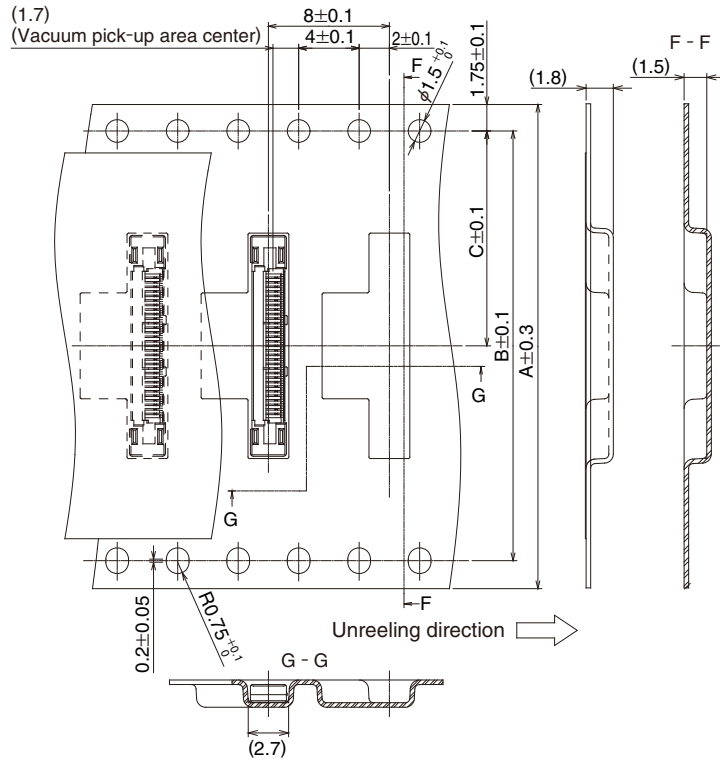


All dimensions: mm

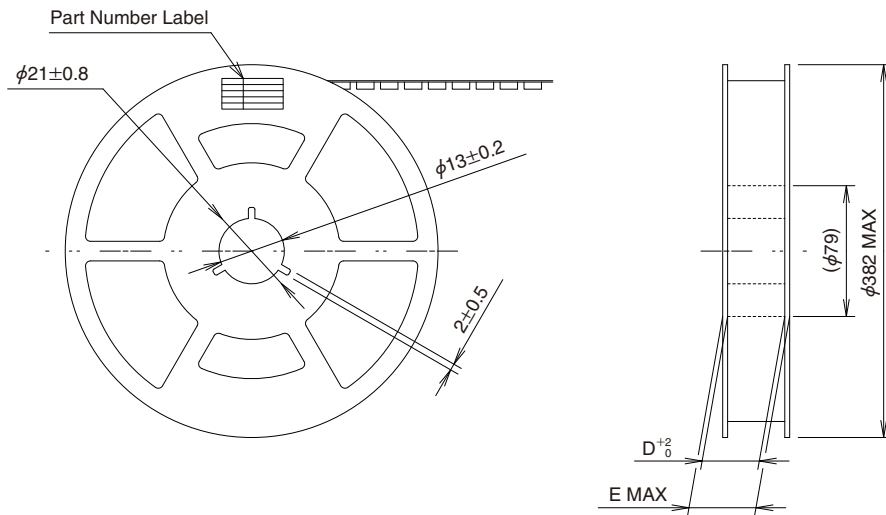
| Part Number        | CL No.        | Number of Contacts | A  | B    | C    | D    | E    |
|--------------------|---------------|--------------------|----|------|------|------|------|
| DF38A-30S-0.3V(51) | 662-4505-4-51 | 30                 | 32 | 28.4 | 14.2 | 32.4 | 38.4 |
| DF38A-32S-0.3V(51) |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

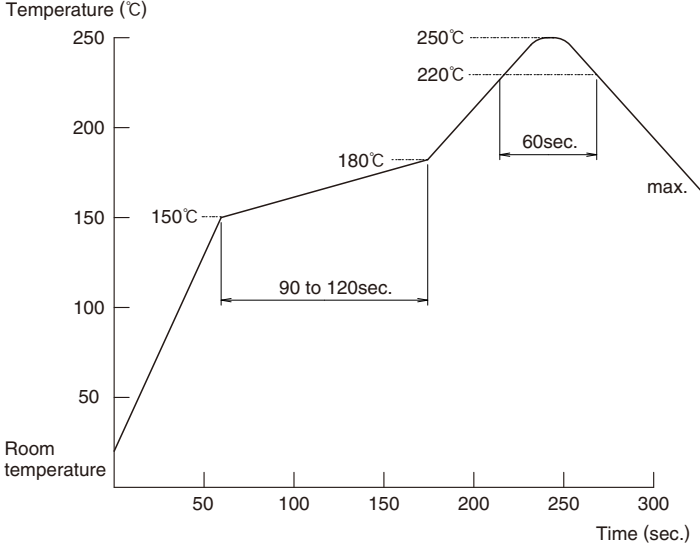
| Part Number        | CL No.        | Number of Contacts | A  | B    | C    | D    | E    |
|--------------------|---------------|--------------------|----|------|------|------|------|
| DF38-30P-0.3SD(51) | 662-4506-7-51 | 30                 | 32 | 28.4 | 14.2 | 32.4 | 38.4 |
| DF38-32P-0.3SD(51) |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

|   |  |
|---|--|
| <p>1. Recommended temperature profile</p>                                       |  <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>   |
| <p>2. Recommended manual soldering</p>  | <p>Manual soldering: 350°C for 3 seconds<br/>Do NOT use flux compound when manual soldering.</p>   |
| <p>3. Recommended screen thickness and open area ratio (Pattern area ratio)</p> | <p>Thickness: 0.1 mm<br/>Open area ratio: Lead terminal: 80%<br/>Ground terminal: 100%</p>   |
| <p>4. Board warpage</p>   | <p>Maximum of 0.02mm at the connector center, with both ends of the connector as reference points.</p>   |
| <p>5. Cleaning conditions</p>   | <p>Refer to “Nylon Connector Use Handbook”.</p>  |
| <p>6. Precautions</p>   | <ul style="list-style-type: none"> <li>* 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.</li> <li>* 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.</li> <li>* Slight discoloration on the insulating materials will not affect form, fit or function of the connectors.</li> </ul> |

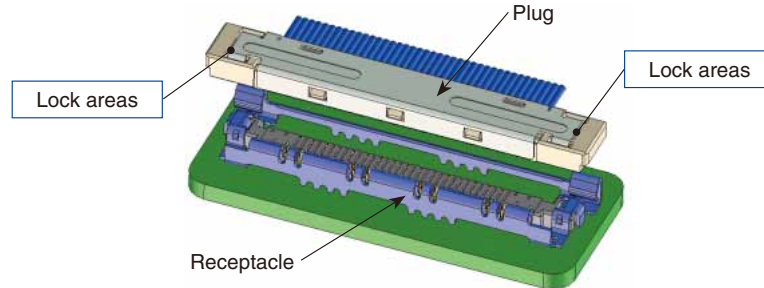
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## Precautions

### Precautions

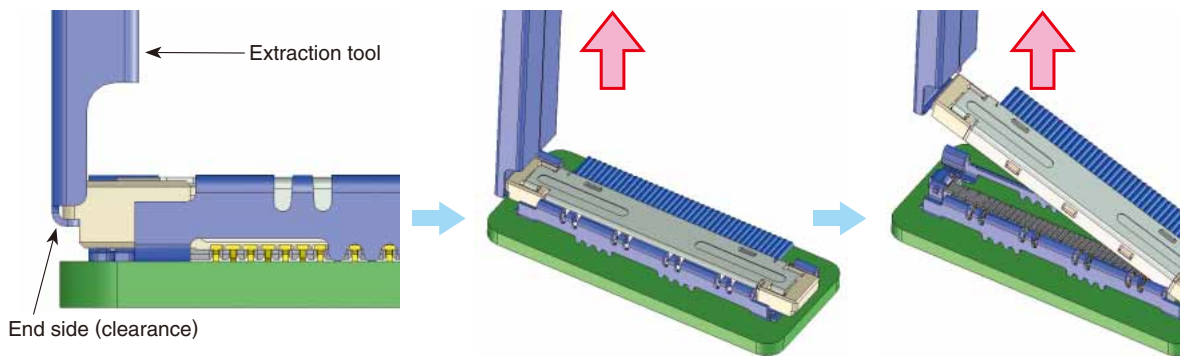
#### ■ Mating

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.



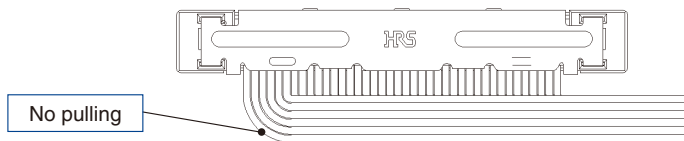
#### ■ Un-mating

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.