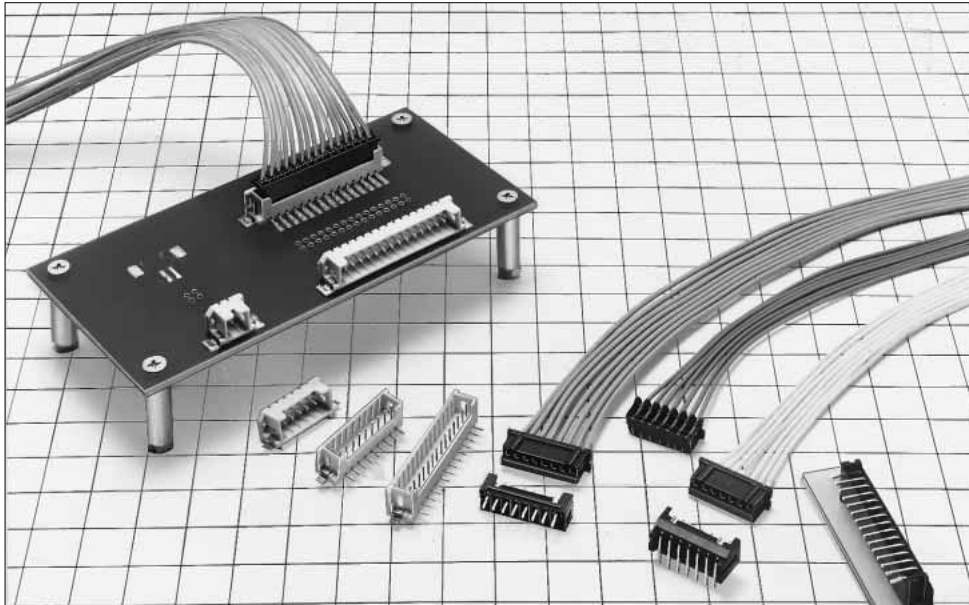


## DF3 Series



### ■Features

#### 1. Correspond to Board Design in Wide Variation

- Crimp Socket
  - (1) Low profile design with mounting height 7.5mm.
  - (2) Provide the contact crimping area with the sufficient space, and secures the stable crimping operation.
- Receptacle
  - (1) The board can be connected horizontally or vertically in combination with the straight header with the right angle header.
  - (2) For horizontal connection, the board to board size is the low profile of 6.6mm.
  - (3) Compatibility with the in-line plug allows the receptacle to set the board side to the receptacle and the cable side to the plug in the board to cable connection.
- Pin Header
  - (1) The board pre-fixed kink is treated with the post pin.
  - (2) The style employs a scoop-proof and sturborn box type.
  - (3) The type corresponding to SMT is available, using the heat-proof resin.  
This SMT header is equipped with the metal tab to prevent peeling in the solder joint area.
- In-line Plug
  - (1) The crimping in-line plug consists of two types, one type, which has pursued after space merits, and the other employs the panel lock type, which can be fixed to the panel.
  - (2) The in-line adapter is available to insert and in-line the ID socket from both sides.

#### 2. UL, CSA Certified

### ■Applications

Business equipment such as copy machine and printer

Product Specifications

|        |                          |          |           |                   |                             |                        |
|--------|--------------------------|----------|-----------|-------------------|-----------------------------|------------------------|
| Rating | Current rating<br>Note 1 | Crimping | Wire size | 22 to 24 AWG : 3A | Operating Temperature Range | -55℃ to +105℃ (Note 2) |
|        |                          |          |           | 26 AWG : 2A       | Operating Humidity Range    | 40% to 80% (Note 3)    |
|        |                          |          |           | 28 AWG : 1A       | Storage Temperature Range   | -10℃ to +60℃ (Note 4)  |
|        | Voltage rating           | Crimping | 250V AC   |                   | Storage Humidity Range      | 40% to 70% (Note 4)    |

| UL-CSA Safety Standard and Approved specification |               |           |                                                    |
|---------------------------------------------------|---------------|-----------|----------------------------------------------------|
| Rating                                            | Rated Current | Wire size | 24 AWG : 3A<br>26 AWG : 2A (Note 5)<br>28 AWG : 1A |
|                                                   | Rated Voltage | 30V AC    |                                                    |

UL CSA Safety Standard File No.  
UL : E52653  
CSA : LR95109

| Item                                | Specification                                                     | Condition                                                                                      |
|-------------------------------------|-------------------------------------------------------------------|------------------------------------------------------------------------------------------------|
| 1. Insulation Resistance            | 1000MΩ min.                                                       | 500V DC                                                                                        |
| 2. Withstanding voltage             | No flashover or insulation breakdown.                             | 650V AC, 1 minute                                                                              |
| 3. Contact Resistance               | 30mΩ max                                                          | 100mA                                                                                          |
| 4. Single Insertor/Extraction Force | 0.3N(30gf)min, 4.4N(450gf)max.                                    | Measure by the square steel pin with 0.5±0.002mm                                               |
| 5. Vibration                        | No electrical discontinuity of 1μs or more                        | Frequency : 10 to 55 Hz, single amplitude of 0.75 mm, 2 hours in each of the 3 directions.     |
| 6. Humidity (Steady state)          | Contact resistance : 30mΩ max. Insulation resistance : 500MΩ min. | 96 hours at temperature of 40℃ and humidity of 90% to 95%                                      |
| 7. Temperature Cycle                | Contact resistance : 30mΩ max. Insulation resistance :1000MΩ min. | (-55℃ : 30 minutes 5 to 35℃: 10 minutes 85℃: 30 minutes 5 to 35℃: 10minutes) 5 cycles          |
| 8. Durability (Mating/un-mating)    | Contact resistance : 30mΩ max.                                    | Tin plating : 30 cycles Gold plating: 50 cycles                                                |
| 9. Resistance to Soldering Heat     | No deformation of components affecting performance.               | THT type Flow : 260℃ for 10 seconds Manual soldering : 300℃ for 2 seconds                      |
|                                     |                                                                   | SMT type Reflow : At the recommended temperature profile Manual soldering : 300℃ for 3 seconds |

Note 1 : Current rating of header is 3A.  
Note 2 : Includes temperature rise caused by current flow.  
Apply to crimping contact type. Maximum operating temperature of receptacle type is 85℃.  
Note 3 : Please use under conditions with no condensation occurred.  
Note 4 : The term "storage" refers to products stored for long period of time prior to mounting and use. Operating Temperature Range and Humidity range covers non conducting condition of installed connectors in storage, shipment or during transportation.  
Note 5 : Apply to crimping contact type.

Materials / Finish

| Product                | Part      | Material        | Finish                    | Remarks |
|------------------------|-----------|-----------------|---------------------------|---------|
| Crimping Socket        | Insulator | Polyamide       | Black                     | UL94V-0 |
| IDC Contact for Socket | Contact   | Phosphor bronze | Tin plated or gold plated | ————    |
| Receptacle             | Insulator | Polyamide       | Black                     | UL94V-0 |
|                        | Contact   | Phosphor bronze | Tin plated or gold plated | ————    |
| Pin Header             | Insulator | Polyamide       | Black                     | UL94V-0 |
|                        | Contact   | Brass           | Tin plated or gold plated | ————    |
| SMT Pin Header         | Insulator | Polyamide       | Beige                     | UL94V-0 |
|                        | Contact   | Brass           | Tin plated or gold plated | ————    |
|                        | Metal tab | Brass           | Tin plated                | ————    |
| In-line Plug           | Insulator | Polyamide       | Black                     | UL94V-0 |
| In-line IDC Contact    | Contact   | Phosphor bronze | Tin plated or gold plated | ————    |
| In-line Adapter        | Insulator | Polyamide       | Black                     | UL94V-0 |
|                        | Contact   | Brass           | Tin plated                | ————    |

## 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

**DF3 - \* S - 2C**

①      ②      ③      ④ ⑤

|                                   |                                 |
|-----------------------------------|---------------------------------|
| ① Series Name : DF3, 3A, 3AA, 3EA | ⑤ Connection Form/Contact Style |
| ② Number of Contacts : 2~15       | C : Crimp socket                |
| ③ Connector Type                  | DSA : Straight through hole     |
| S : Socket                        | DS : Right angle through hole   |
| P : Pin Header                    | V : Straight SMT                |
| EP : In-line Plug                 | H : Right angle SMT             |
| ④ Contact Pitch : 2mm             | A : Adapter                     |

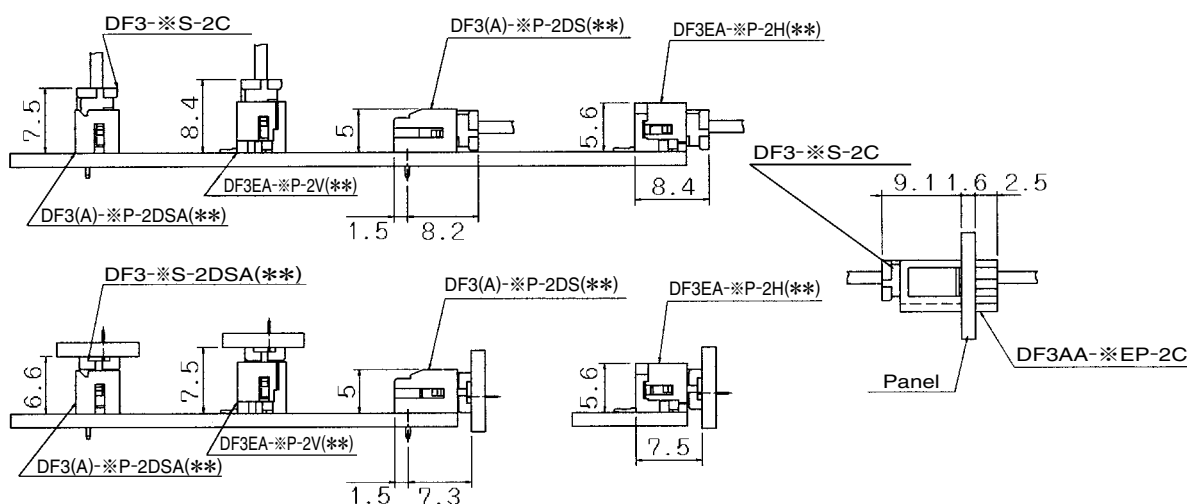
### Contact

**DF3 - EP2428PCFA**

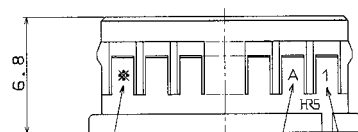
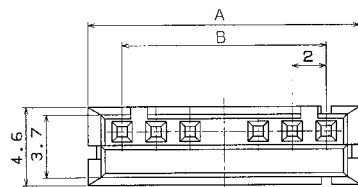
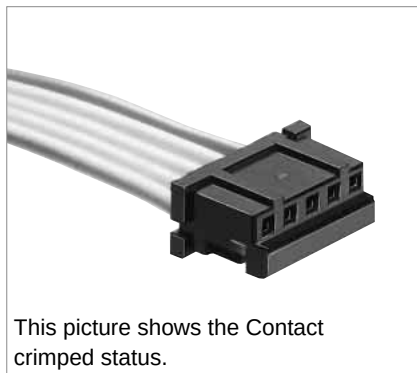
①      ②      ③      ④

|                        |                                  |
|------------------------|----------------------------------|
| ① Contact Type         | ③ Contact Type/Packaging Type    |
| Blank : For socket     | SCF : Socket contact, Reel       |
| EP : For in-line plug  | SC : Socket contact, Pack        |
| ② Applicable Wire Size | PCF : Plug contact, Reel         |
| 22 : 22 AWG            | PC : Plug contact, Pack          |
| 2428 : 24 to 28 AWG    | ④ Plating Type                   |
|                        | Blank : Tin plated               |
|                        | A : Gold plated (Plug contact)   |
|                        | C : Gold plated (Socket contact) |

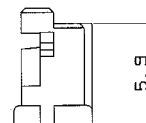
## Application pattern



## ■Crimping Socket



Note 1. Die CAV No. Contact No.



[Specific No.] (\*\*), \*\*  
Blank : 100pcs/pack

Unit : mm

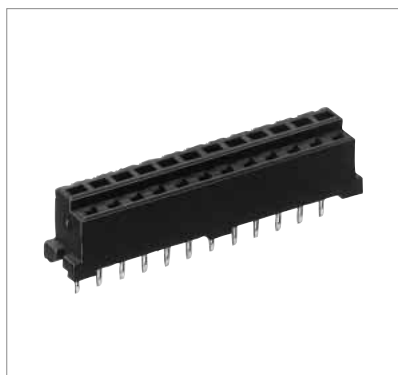
| Part No.      | HRS No.       | No. of Contacts | A  | B  | RoHS | Part No.       | HRS No.       | No. of Contacts | A  | B  | RoHS |
|---------------|---------------|-----------------|----|----|------|----------------|---------------|-----------------|----|----|------|
| DF3-2S-2C(**) | 543-0003-8 ** | 2               | 6  | 2  | YES  | DF3- 9S-2C(**) | 543-0010-3 ** | 9               | 20 | 16 | YES  |
| DF3-3S-2C(**) | 543-0004-0 ** | 3               | 8  | 4  |      | DF3-10S-2C(**) | 543-0011-6 ** | 10              | 22 | 18 |      |
| DF3-4S-2C(**) | 543-0005-3 ** | 4               | 10 | 6  |      | DF3-11S-2C(**) | 543-0012-9 ** | 11              | 24 | 20 |      |
| DF3-5S-2C(**) | 543-0006-6 ** | 5               | 12 | 8  |      | DF3-12S-2C(**) | 543-0013-1 ** | 12              | 26 | 22 |      |
| DF3-6S-2C(**) | 543-0007-9 ** | 6               | 14 | 10 |      | DF3-13S-2C(**) | 543-0014-4 ** | 13              | 28 | 24 |      |
| DF3-7S-2C(**) | 543-0008-1 ** | 7               | 16 | 12 |      | DF3-14S-2C(**) | 543-0015-7 ** | 14              | 30 | 26 |      |
| DF3-8S-2C(**) | 543-0009-4 ** | 8               | 18 | 14 |      | DF3-15S-2C(**) | 543-0016-0 ** | 15              | 32 | 28 |      |

Note1 : The product's contact number indicated.

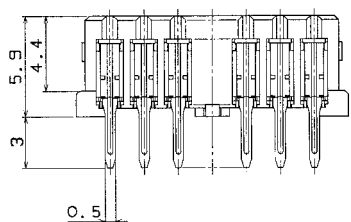
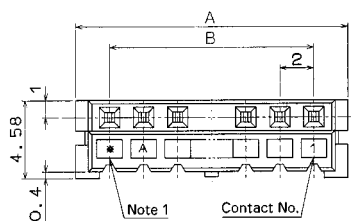
Note2 : The quantity for delivery of the specification No. "None" is determined per bag (100 pcs.).

If needed, please order the products per bag.

## ■Receptacle

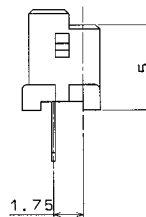


●Board Through-hole Diameter :  $\phi 0.8^{+0.1}_0$



[Specific No.] (\*\*), \*\*  
(25) : Tin plated, Tube packaging  
(55) : Gold plated, Tube packaging

Note1 : The product's contact number indicated

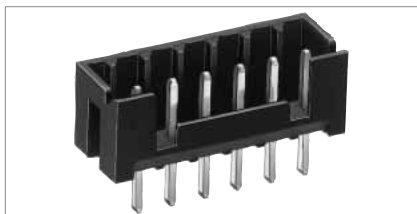


Unit : mm

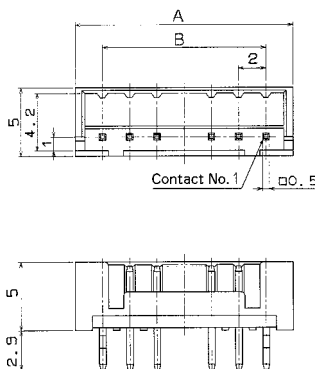
| Part No.        | HRS No.       | No. of Contacts | A  | B  | Tube Package Quantity | RoHS | Part No.         | HRS No.       | No. of Contacts | A  | B  | Tube Package Quantity | RoHS |
|-----------------|---------------|-----------------|----|----|-----------------------|------|------------------|---------------|-----------------|----|----|-----------------------|------|
| DF3-2S-2DSA(**) | 543-0048-6 ** | 2               | 6  | 2  | 80 pieces             | YES  | DF3- 9S-2DSA(**) | 543-0055-1 ** | 9               | 20 | 16 | 24 pieces             | YES  |
| DF3-3S-2DSA(**) | 543-0049-9 ** | 3               | 8  | 4  | 60                    |      | DF3-10S-2DSA(**) | 543-0056-4 ** | 10              | 22 | 18 | 21                    |      |
| DF3-4S-2DSA(**) | 543-0050-8 ** | 4               | 10 | 6  | 48                    |      | DF3-11S-2DSA(**) | 543-0057-7 ** | 11              | 24 | 20 | 20                    |      |
| DF3-5S-2DSA(**) | 543-0051-0 ** | 5               | 12 | 8  | 40                    |      | DF3-12S-2DSA(**) | 543-0058-0 ** | 12              | 26 | 22 | 18                    |      |
| DF3-6S-2DSA(**) | 543-0052-3 ** | 6               | 14 | 10 | 34                    |      | DF3-13S-2DSA(**) | 543-0059-2 ** | 13              | 28 | 24 | 17                    |      |
| DF3-7S-2DSA(**) | 543-0053-6 ** | 7               | 16 | 12 | 30                    |      | DF3-14S-2DSA(**) | 543-0060-1 ** | 14              | 30 | 26 | 16                    |      |
| DF3-8S-2DSA(**) | 543-0054-9 ** | 8               | 18 | 14 | 27                    |      | DF3-15S-2DSA(**) | 543-0061-4 ** | 15              | 32 | 28 | 15                    |      |

Note2 : Please order the tube packaging at the multiplied tube packaging quantity (pieces).

## ■Straight Pin Header



- Board Through-hole Diameter:  $\phi 0.8^{+0.1}_{-0}$
- Kink Pre-fixed Effective Diameter:  $\phi 0.8^{+0.05}_{-0}$



Unit : mm

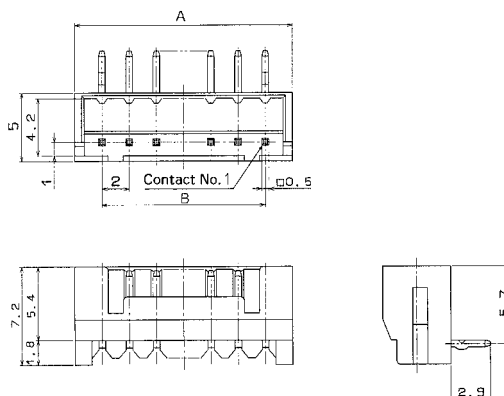
| Tin Plating   |            | Gold Plating     |               | No. of Contacts | A  | B  | RoHS |
|---------------|------------|------------------|---------------|-----------------|----|----|------|
| Part No.      | HRS No.    | Part No.         | HRS No.       |                 |    |    |      |
| DF3A- 2P-2DSA | 543-0165-0 | DF3- 2P-2DSA(01) | 543-0017-2 01 | 2               | 6  | 2  | YES  |
| DF3A- 3P-2DSA | 543-0166-2 | DF3- 3P-2DSA(01) | 543-0018-5 01 | 3               | 8  | 4  |      |
| DF3A- 4P-2DSA | 543-0167-5 | DF3- 4P-2DSA(01) | 543-0019-8 01 | 4               | 10 | 6  |      |
| DF3A- 5P-2DSA | 543-0168-8 | DF3- 5P-2DSA(01) | 543-0020-7 01 | 5               | 12 | 8  |      |
| DF3A- 6P-2DSA | 543-0169-0 | DF3- 6P-2DSA(01) | 543-0021-0 01 | 6               | 14 | 10 |      |
| DF3A- 7P-2DSA | 543-0170-0 | DF3- 7P-2DSA(01) | 543-0022-2 01 | 7               | 16 | 12 |      |
| DF3A- 8P-2DSA | 543-0171-2 | DF3- 8P-2DSA(01) | 543-0023-5 01 | 8               | 18 | 14 |      |
| DF3A- 9P-2DSA | 543-0172-5 | DF3- 9P-2DSA(01) | 543-0024-8 01 | 9               | 20 | 16 |      |
| DF3A-10P-2DSA | 543-0173-8 | DF3-10P-2DSA(01) | 543-0025-0 01 | 10              | 22 | 18 |      |
| DF3A-11P-2DSA | 543-0174-0 | DF3-11P-2DSA(01) | 543-0026-3 01 | 11              | 24 | 20 |      |
| DF3A-12P-2DSA | 543-0175-3 | DF3-12P-2DSA(01) | 543-0027-6 01 | 12              | 26 | 22 |      |
| DF3A-13P-2DSA | 543-0176-6 | DF3-13P-2DSA(01) | 543-0028-9 01 | 13              | 28 | 24 |      |
| DF3A-14P-2DSA | 543-0177-9 | DF3-14P-2DSA(01) | 543-0029-1 01 | 14              | 30 | 26 |      |
| DF3A-15P-2DSA | 543-0178-1 | DF3-15P-2DSA(01) | 543-0030-0 01 | 15              | 32 | 28 |      |

Note : The quantity for delivery is determined per bag (100 pcs.). If needed, please order the products per bag.

## ■Right Angle Pin Header



- Board Through-hole Diameter:  $\phi 0.8^{+0.1}_{-0}$
- Kink Pre-fixed Effective Diameter:  $\phi 0.8^{+0.05}_{-0}$

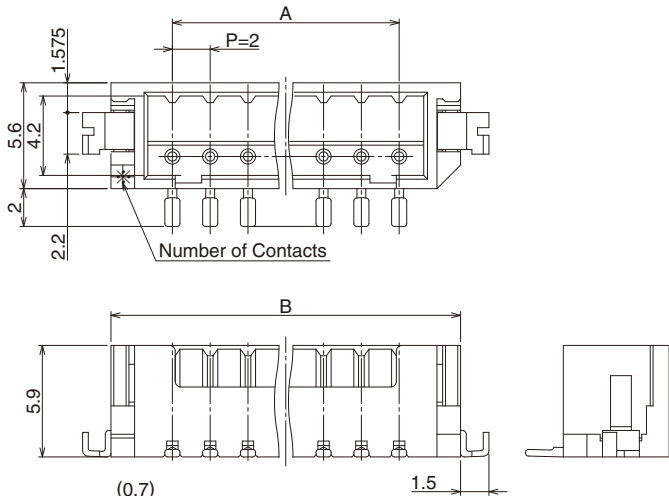
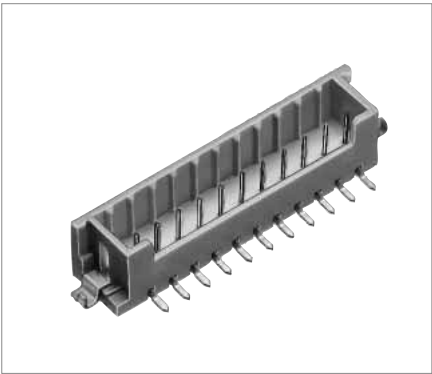


Unit : mm

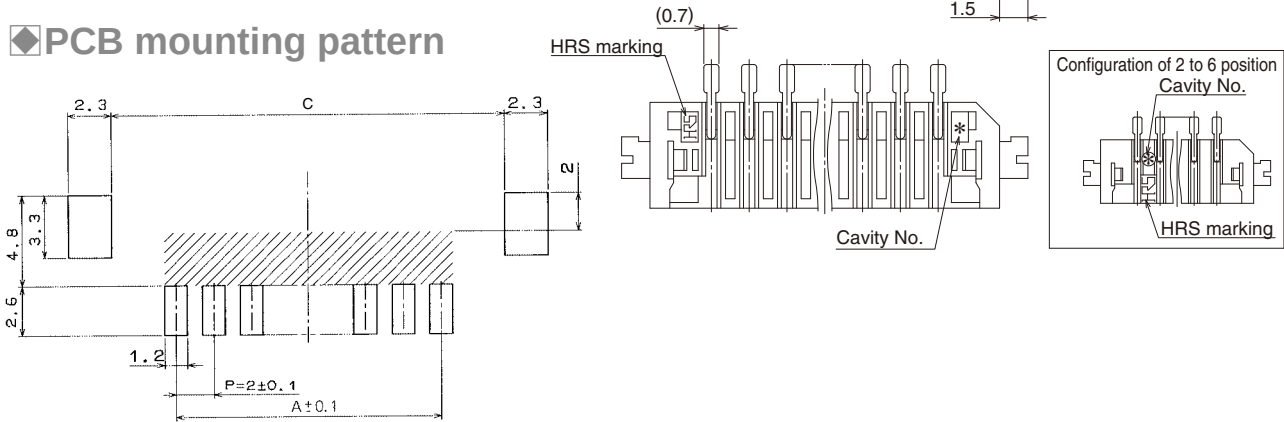
| Tin Plating  |            | Gold Plating    |               | No. of Contacts | A  | B  | RoHS |
|--------------|------------|-----------------|---------------|-----------------|----|----|------|
| Part No.     | HRS No.    | Part No.        | HRS No.       |                 |    |    |      |
| DF3A- 2P-2DS | 543-0179-4 | DF3- 2P-2DS(01) | 543-0031-3 01 | 2               | 6  | 2  | YES  |
| DF3A- 3P-2DS | 543-0180-3 | DF3- 3P-2DS(01) | 543-0032-6 01 | 3               | 8  | 4  |      |
| DF3A- 4P-2DS | 543-0181-6 | DF3- 4P-2DS(01) | 543-0033-9 01 | 4               | 10 | 6  |      |
| DF3A- 5P-2DS | 543-0182-9 | DF3- 5P-2DS(01) | 543-0034-1 01 | 5               | 12 | 8  |      |
| DF3A- 6P-2DS | 543-0183-1 | DF3- 6P-2DS(01) | 543-0035-4 01 | 6               | 14 | 10 |      |
| DF3A- 7P-2DS | 543-0184-4 | DF3- 7P-2DS(01) | 543-0036-7 01 | 7               | 16 | 12 |      |
| DF3A- 8P-2DS | 543-0185-7 | DF3- 8P-2DS(01) | 543-0037-0 01 | 8               | 18 | 14 |      |
| DF3A- 9P-2DS | 543-0186-0 | DF3- 9P-2DS(01) | 543-0038-2 01 | 9               | 20 | 16 |      |
| DF3A-10P-2DS | 543-0187-2 | DF3-10P-2DS(01) | 543-0039-5 01 | 10              | 22 | 18 |      |
| DF3A-11P-2DS | 543-0188-5 | DF3-11P-2DS(01) | 543-0040-4 01 | 11              | 24 | 20 |      |
| DF3A-12P-2DS | 543-0189-8 | DF3-12P-2DS(01) | 543-0041-7 01 | 12              | 26 | 22 |      |
| DF3A-13P-2DS | 543-0190-7 | DF3-13P-2DS(01) | 543-0042-0 01 | 13              | 28 | 24 |      |
| DF3A-14P-2DS | 543-0191-0 | DF3-14P-2DS(01) | 543-0043-2 01 | 14              | 30 | 26 |      |
| DF3A-15P-2DS | 543-0192-2 | DF3-15P-2DS(01) | 543-0044-5 01 | 15              | 32 | 28 |      |

Note : The quantity for delivery is determined per bag(100pcs.). If needed, please order the products per bag.

■Straight Pin Header (SMT)



◆PCB mounting pattern



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

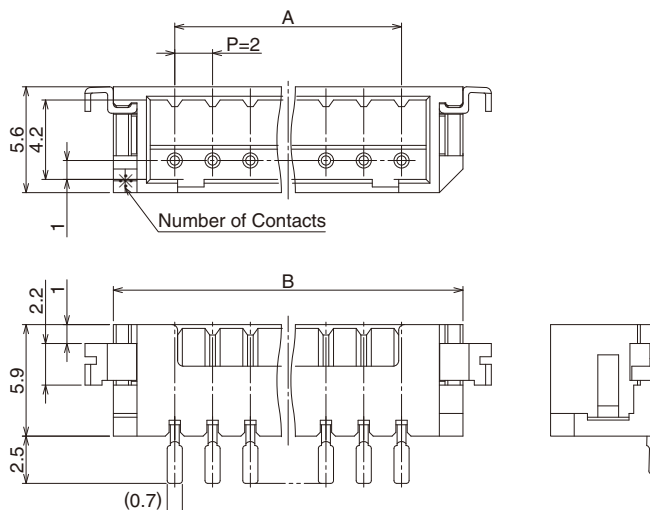
[Specific No.] (\*\*) , \*\*  
(21) : Tin plated packaging  
(51) : Gold plated packaging

Unit : mm

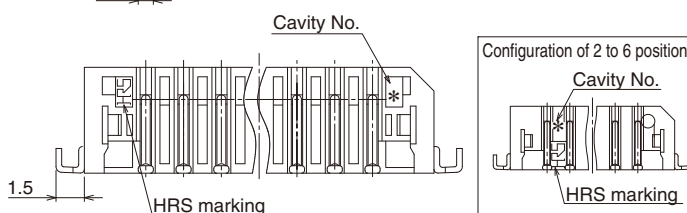
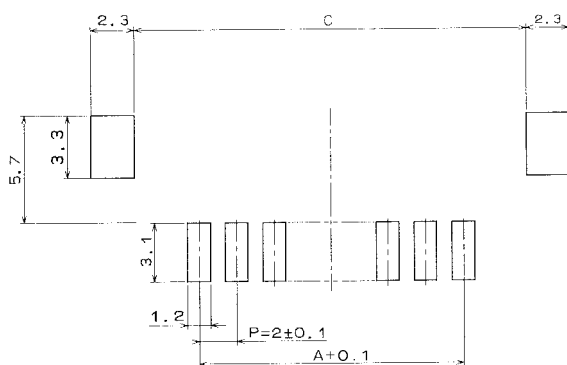
| Part No.         | HRS No.       | No. of Contacts | A  | B    | C     | RoHS |
|------------------|---------------|-----------------|----|------|-------|------|
| DF3EA-2P-2V(**)  | 543-0315-0 ** | 2               | 2  | 8.5  | 8.74  | YES  |
| DF3EA-3P-2V(**)  | 543-0316-0 ** | 3               | 4  | 10.5 | 10.74 |      |
| DF3EA-4P-2V(**)  | 543-0317-0 ** | 4               | 6  | 12.5 | 12.74 |      |
| DF3EA-5P-2V(**)  | 543-0318-0 ** | 5               | 8  | 14.5 | 14.74 |      |
| DF3EA-6P-2V(**)  | 543-0319-0 ** | 6               | 10 | 16.5 | 16.74 |      |
| DF3EA-7P-2V(**)  | 543-0320-0 ** | 7               | 12 | 18.5 | 18.74 |      |
| DF3EA-8P-2V(**)  | 543-0321-0 ** | 8               | 14 | 20.5 | 20.74 |      |
| DF3EA-9P-2V(**)  | 543-0322-0 ** | 9               | 16 | 22.5 | 22.74 |      |
| DF3EA-10P-2V(**) | 543-0323-0 ** | 10              | 18 | 24.5 | 24.74 |      |
| DF3EA-11P-2V(**) | 543-0324-0 ** | 11              | 20 | 26.5 | 26.74 |      |
| DF3EA-12P-2V(**) | 543-0325-0 ** | 12              | 22 | 28.5 | 28.74 |      |
| DF3EA-13P-2V(**) | 543-0326-0 ** | 13              | 24 | 30.5 | 30.74 |      |
| DF3EA-14P-2V(**) | 543-0327-0 ** | 14              | 26 | 32.5 | 32.74 |      |
| DF3EA-15P-2V(**) | 543-0328-0 ** | 15              | 28 | 34.5 | 34.74 |      |

Note1 : Please order the emboss packaging product by the reel number. (1 reel : 1000pcs.)

## Right Angle Pin Header (SMT)



## PCB mounting pattern



[Specific No.] (\* \*), \* \*

(21) : Tin plated embossed packaging

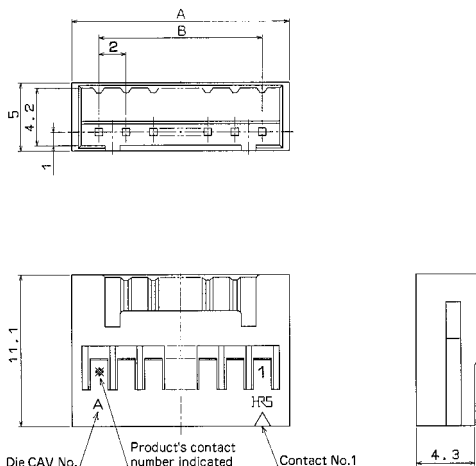
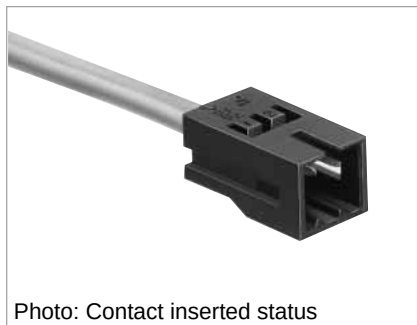
(51) : Gold plated embossed packaging

Unit : mm

| Part No.         | HRS No.       | No. of Contacts | A  | B    | C     | RoHS |
|------------------|---------------|-----------------|----|------|-------|------|
| DF3EA-2P-2H(**)  | 543-0329-0 ** | 2               | 2  | 8.5  | 8.74  | YES  |
| DF3EA-3P-2H(**)  | 543-0330-0 ** | 3               | 4  | 10.5 | 10.74 |      |
| DF3EA-4P-2H(**)  | 543-0331-0 ** | 4               | 6  | 12.5 | 12.74 |      |
| DF3EA-5P-2H(**)  | 543-0332-0 ** | 5               | 8  | 14.5 | 14.74 |      |
| DF3EA-6P-2H(**)  | 543-0333-0 ** | 6               | 10 | 16.5 | 16.74 |      |
| DF3EA-7P-2H(**)  | 543-0334-0 ** | 7               | 12 | 18.5 | 18.74 |      |
| DF3EA-8P-2H(**)  | 543-0335-0 ** | 8               | 14 | 20.5 | 20.74 |      |
| DF3EA-9P-2H(**)  | 543-0336-0 ** | 9               | 16 | 22.5 | 22.74 |      |
| DF3EA-10P-2H(**) | 543-0337-0 ** | 10              | 18 | 24.5 | 24.74 |      |
| DF3EA-11P-2H(**) | 543-0338-0 ** | 11              | 20 | 26.5 | 26.74 |      |
| DF3EA-12P-2H(**) | 543-0339-0 ** | 12              | 22 | 28.5 | 28.74 |      |
| DF3EA-13P-2H(**) | 543-0340-0 ** | 13              | 24 | 30.5 | 30.74 |      |
| DF3EA-14P-2H(**) | 543-0341-0 ** | 14              | 26 | 32.5 | 32.74 |      |
| DF3EA-15P-2H(**) | 543-0342-0 ** | 15              | 28 | 34.5 | 34.74 |      |

Note1 : Please order the emboss packaging product by the reel number. (1reel : 1000pcs.)

## In-line Plug

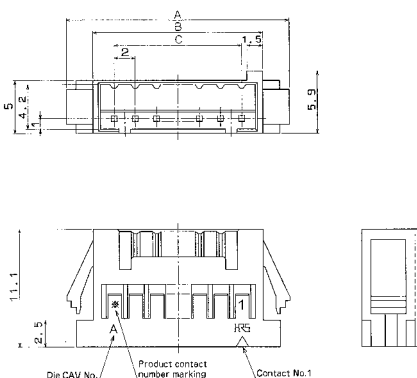
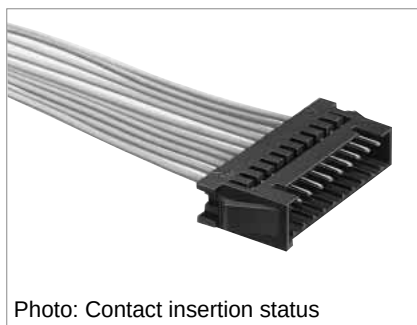


Unit : mm

| Part No.    | HRS No.    | No. of Contacts | A  | B  | RoHS | Part No.    | HRS No.    | No. of Contacts | A  | B  | RoHS |
|-------------|------------|-----------------|----|----|------|-------------|------------|-----------------|----|----|------|
| DF3- 2EP-2C | 543-0064-2 | 2               | 6  | 2  | YES  | DF3- 9EP-2C | 543-0071-8 | 9               | 20 | 16 | YES  |
| DF3- 3EP-2C | 543-0065-5 | 3               | 8  | 4  |      | DF3-10EP-2C | 543-0072-0 | 10              | 22 | 18 |      |
| DF3- 4EP-2C | 543-0066-8 | 4               | 10 | 6  |      | DF3-11EP-2C | 543-0073-3 | 11              | 24 | 20 |      |
| DF3- 5EP-2C | 543-0067-0 | 5               | 12 | 8  |      | DF3-12EP-2C | 543-0074-6 | 12              | 26 | 22 |      |
| DF3- 6EP-2C | 543-0068-3 | 6               | 14 | 10 |      | DF3-13EP-2C | 543-0075-9 | 13              | 28 | 24 |      |
| DF3- 7EP-2C | 543-0069-6 | 7               | 16 | 12 |      | DF3-14EP-2C | 543-0076-1 | 14              | 30 | 26 |      |
| DF3- 8EP-2C | 543-0070-5 | 8               | 18 | 14 |      | DF3-15EP-2C | 543-0077-4 | 15              | 32 | 28 |      |

Note : The specific No."None" item is delivered per bag (100pcs.). Please order products per bag unit.

## In-line Plug with Panel Lock

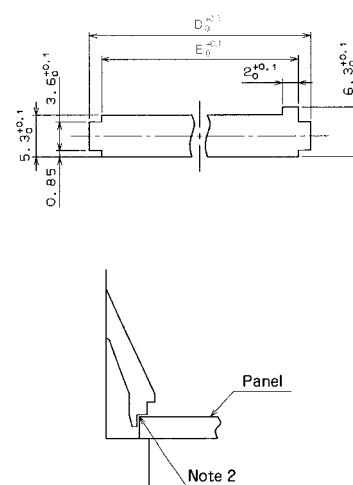


Unit : mm

| Part No.      | HRS No.    | No. of Contacts | A  | B  | C  | D    | E    | RoHS |
|---------------|------------|-----------------|----|----|----|------|------|------|
| DF3AA- 2EP-2C | 543-0151-5 | 2               | 11 | 6  | 2  | 9.4  | 6.3  | YES  |
| DF3AA- 3EP-2C | 543-0152-8 | 3               | 13 | 8  | 4  | 11.4 | 8.3  |      |
| DF3AA- 4EP-2C | 543-0153-0 | 4               | 15 | 10 | 6  | 13.4 | 10.3 |      |
| DF3AA- 5EP-2C | 543-0154-3 | 5               | 17 | 12 | 8  | 15.4 | 12.3 |      |
| DF3AA- 6EP-2C | 543-0155-6 | 6               | 19 | 14 | 10 | 17.4 | 14.3 |      |
| DF3AA- 7EP-2C | 543-0156-9 | 7               | 21 | 16 | 12 | 19.4 | 16.3 |      |
| DF3AA- 8EP-2C | 543-0157-1 | 8               | 23 | 18 | 14 | 21.4 | 18.3 |      |
| DF3AA- 9EP-2C | 543-0158-4 | 9               | 25 | 20 | 16 | 23.4 | 20.3 |      |
| DF3AA-10EP-2C | 543-0159-7 | 10              | 27 | 22 | 18 | 25.4 | 22.3 |      |
| DF3AA-11EP-2C | 543-0160-6 | 11              | 29 | 24 | 20 | 27.4 | 24.3 |      |
| DF3AA-12EP-2C | 543-0161-9 | 12              | 31 | 26 | 22 | 29.4 | 26.3 |      |
| DF3AA-13EP-2C | 543-0162-1 | 13              | 33 | 28 | 24 | 31.4 | 28.3 |      |
| DF3AA-14EP-2C | 543-0163-4 | 14              | 35 | 30 | 26 | 33.4 | 30.3 |      |
| DF3AA-15EP-2C | 543-0164-7 | 15              | 37 | 32 | 28 | 35.4 | 32.3 |      |

Note : The specific No. "None" item is delivered per bag (100pcs.). Please order products per bag unit.

## Panel Cutouts



Note1 : Applicable panel thickness is 1.6 to 1.0mm. (However, a slight backlash is considered for the thickness other than 1.6 and 1.2mm.)

Note2 : Use the non-radius surface at the hooking panel edge.

Note3 : Contact No. indicates 1, 4, 8, 12, and 15.

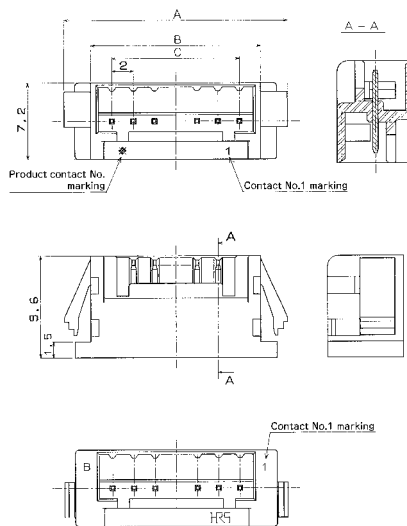


## ■ In-line Adapter with Panel Lock

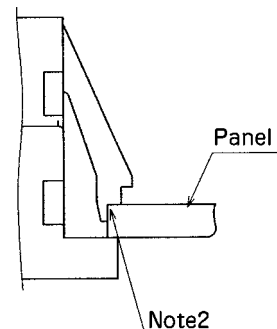
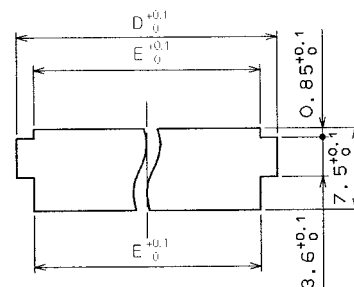


Adapter to in-line by pushing 2pcs. of socket from both sides

No.1-No.1 connection circuit type



## ◆ Panel Cutouts



Note1 : Applicable panel thickness is 1.6 to 1.0mm.(However, backlash will occur except for 1.6, 1.2mm thickness.)

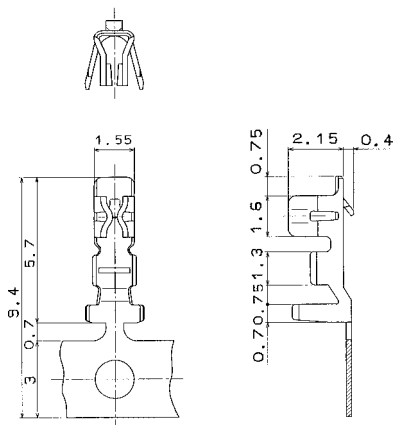
Note2 : Please use the non-radius surface at the hooking panel edge.

Unit : mm

| Part No.    | HRS No.    | No. of Contacts | A  | B  | C  | D    | E    | RoHS |
|-------------|------------|-----------------|----|----|----|------|------|------|
| DF3- 2EP-2A | 543-0267-0 | 2               | 11 | 6  | 2  | 9.4  | 6.3  | YES  |
| DF3- 3EP-2A | 543-0268-2 | 3               | 13 | 8  | 4  | 11.4 | 8.3  |      |
| DF3- 4EP-2A | 543-0269-5 | 4               | 15 | 10 | 6  | 13.4 | 10.3 |      |
| DF3- 5EP-2A | 543-0270-4 | 5               | 17 | 12 | 8  | 15.4 | 12.3 |      |
| DF3- 6EP-2A | 543-0271-7 | 6               | 19 | 14 | 10 | 17.4 | 14.3 |      |
| DF3- 7EP-2A | 543-0272-0 | 7               | 21 | 16 | 12 | 19.4 | 16.3 |      |
| DF3- 8EP-2A | 543-0273-2 | 8               | 23 | 18 | 14 | 21.4 | 18.3 |      |
| DF3- 9EP-2A | 543-0274-5 | 9               | 25 | 20 | 16 | 23.4 | 20.3 |      |
| DF3-10EP-2A | 543-0275-8 | 10              | 27 | 22 | 18 | 25.4 | 22.3 |      |
| DF3-11EP-2A | 543-0276-0 | 11              | 29 | 24 | 20 | 27.4 | 24.3 |      |
| DF3-12EP-2A | 543-0277-3 | 12              | 31 | 26 | 22 | 29.4 | 26.3 |      |
| DF3-13EP-2A | 543-0278-6 | 13              | 33 | 28 | 24 | 31.4 | 28.3 |      |
| DF3-14EP-2A | 543-0279-9 | 14              | 35 | 30 | 26 | 33.4 | 30.3 |      |
| DF3-15EP-2A | 543-0280-8 | 15              | 37 | 32 | 28 | 35.4 | 32.3 |      |

Note : The specific No. "None" item is delivered per bag (100pcs.). Please order products per bag unit.

## ■Crimping Contact for Socket



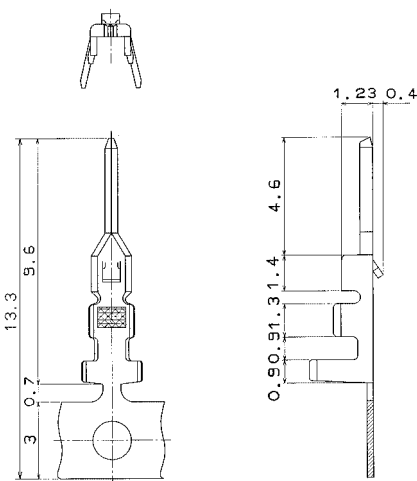
| Part No.     | HRS No.    | Applicable Cable |                 |           |                         | Packaging   | Finish      | RoHS |
|--------------|------------|------------------|-----------------|-----------|-------------------------|-------------|-------------|------|
|              |            | ULstyle          | Jacket Diameter | Wire Size | Stranded Wire Conductor |             |             |      |
| DF3-22SCF    | 543-0235-3 | 1061             | 1.2-1.5         | 22 AWG    | 17/0.16                 | 10,000/reel | Tin plated  | YES  |
| DF3-22SC     | 543-0236-6 | 1061             | 1.3             | 22 AWG    | 17/0.16                 | 100/pack    |             |      |
| DF3-22SCFC   | 543-0861-0 | 1061             | 1.2-1.5         | 22 AWG    | 17/0.16                 | 10,000/reel | Gold plated |      |
| DF3-22SCC    | 543-0862-3 | 1061             | 1.3             | 22 AWG    | 17/0.16                 | 100/pack    |             |      |
| DF3-2428SCF  | 543-0001-2 | 1007<br>1061     | 0.75 to 1.5     | 24 AWG    | 11/0.16                 | 10,000/reel | Tin plated  |      |
|              |            |                  |                 | 26 AWG    | 7/0.16                  |             |             |      |
|              |            |                  |                 | 28 AWG    | 7/0.127                 |             |             |      |
| DF3-2428SC   | 543-0002-5 | 1007             | 1.5             | 24 AWG    | 11/0.16                 | 100/pack    |             |      |
|              |            |                  | 1.3             | 26 AWG    | 7/0.16                  |             |             |      |
|              |            |                  | 1.2             | 28 AWG    | 7/0.127                 |             |             |      |
| DF3-2428SCFC | 543-0046-0 | 1007<br>1061     | 0.75 to 1.5     | 24 AWG    | 11/0.16                 | 10,000/reel | Gold plated |      |
|              |            |                  |                 | 26 AWG    | 7/0.16                  |             |             |      |
|              |            |                  |                 | 28 AWG    | 7/0.127                 |             |             |      |
| DF3-2428SCC  | 543-0047-3 | 1007             | 1.5             | 24 AWG    | 11/0.16                 | 100/pack    |             |      |
|              |            |                  | 1.3             | 26 AWG    | 7/0.16                  |             |             |      |
|              |            |                  | 1.2             | 28 AWG    | 7/0.127                 |             |             |      |

Note1 : Crimping contact Extraction Tool DF-C-PO(A)

Note2 : Applicable wire with tin plated solid soft conductor.

Note3 : When using other than the recommended wire, contact your nearest Hirose representative.

## ■Crimping Contact for In-line Plug



| Part No.       | HRS No.    | Applicable Cable |                 |           |                         | Packaging   | Finish      | RoHS |
|----------------|------------|------------------|-----------------|-----------|-------------------------|-------------|-------------|------|
|                |            | ULstyle          | Jacket Diameter | Wire Size | Stranded Wire Conductor |             |             |      |
| DF3-EP2428PCF  | 543-0062-7 | 1007<br>1061     | 0.75 to 1.5     | 24 AWG    | 11/0.16                 | 10,000/reel | Tin plated  | YES  |
|                |            |                  |                 | 26 AWG    | 7/0.16                  |             |             |      |
|                |            |                  |                 | 28 AWG    | 7/0.127                 |             |             |      |
| DF3-EP2428PC   | 543-0063-0 | 1007             | 1.5             | 24 AWG    | 11/0.16                 | 100/pack    |             |      |
|                |            |                  | 1.3             | 26 AWG    | 7/0.16                  |             |             |      |
|                |            |                  | 1.2             | 28 AWG    | 7/0.127                 |             |             |      |
| DF3-EP2428PCFA | 543-0149-3 | 1007<br>1061     | 0.75 to 1.5     | 24 AWG    | 11/0.16                 | 10,000/reel | Gold plated |      |
|                |            |                  |                 | 26 AWG    | 7/0.16                  |             |             |      |
|                |            |                  |                 | 28 AWG    | 7/0.127                 |             |             |      |
| DF3-EP2428PCA  | 543-0150-2 | 1007             | 1.5             | 24 AWG    | 11/0.16                 | 100/pack    |             |      |
|                |            |                  | 1.3             | 26 AWG    | 7/0.16                  |             |             |      |
|                |            |                  | 1.2             | 28 AWG    | 7/0.127                 |             |             |      |

Note1 : Crimping contact Extraction Tool DF-C-PO(B)

Note2 : Applicable wire with tin plated solid soft conductor.

Note3 : When using other than the recommended wire, contact your nearest Hirose representative.

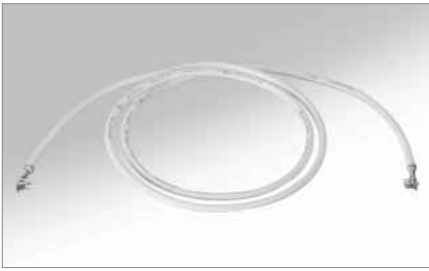
## ◆Applicable Crimping Tool

| Type               | Part No.          | HRS No.    | Applicable Contact  |
|--------------------|-------------------|------------|---------------------|
| Applicator         | AP105-DF3-2428S   | 901-4503-3 | DF3-2428SCF/SCFC    |
|                    | AP105-DF3-22S     | 901-4549-4 | DF3-22SCF/SCFC      |
|                    | AP105-DF3-EP2428P | 901-4508-7 | DF3-EP2428PCF/PCFA  |
| Press Unit         | CM-105C           | 901-0001-0 | _____               |
| Hand Crimping Tool | DF3-TA2428HC      | 550-0164-5 | DF3-2428SC/SCC      |
|                    | DF3EP-TA2428HC    | 550-0184-2 | DF3-EP2428PC/PCA    |
|                    | DF3-TA22HC        | 550-0257-4 | DF3-22SC/SCFC       |
| Extraction Tool    | DF-C-PO (A)       | 550-0170-8 | DF3-*****SC(F)(C)   |
|                    |                   |            | DF3-EP*****PC(F)(A) |

Note1 : If any trouble has occurred due to tools other than designated tool, Hirose bears no responsibility for any trouble.

Note2 : Please follow the "Crimping quality standards" and "Table of crimping condition" when crimping contacts.

## ■ Crimped contacts with cable assemblies



## ■ 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.

**DF3-2428S 2 - 24 A 9 - 300**

①                      ②                      ③                      ④                      ⑤                      ⑥

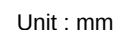
|                                        |                                                                                                                                                                                                                     |                                        |
|----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|
| ① Part No.<br>DF3-2428SF : DF3-2428SCF | ④ Crimped condition / Terminal treatment<br>A : Both-end crimped<br>B : Single-end crimped / Without terminal treatment<br>S : Single-end crimped / With terminal treatment<br>Terminal treatment : Stripped jacket | ⑤ Wire color<br>9 : White<br>0 : Black |
| ② Wire Type<br>2 : UL1007              |                                                                                                                                                                                                                     | ⑥ Wire length<br>300 : 300mm           |
| ③ Applicable wire size<br>24 : 24 AWG  |                                                                                                                                                                                                                     |                                        |

| Part No.                | HRS No.       | Packaging   | Finish     |
|-------------------------|---------------|-------------|------------|
| DF3-2428S2-24A9-300(05) | 543-9001-0 05 | 100pcs/pack | Tin plated |

Note1 : Bag packaging (100pcs/pack). Order by number of packs.

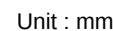
Note2 : Please contact our sales representative when using the other specifications.

## ●Straight Pin Header



| Product Type \ Size | No. of Contacts | A    | B    | C    | D    |
|---------------------|-----------------|------|------|------|------|
| DF3EA-*P-2V(**)     | 2 to 4          | 24.0 | —    | 11.5 | 24.4 |
|                     | 5 to 7          | 32.0 | 28.4 | 14.2 | 32.4 |
|                     | 8 to 10         | 44.0 | 40.4 | 20.2 | 44.4 |
|                     | 11 to 15        | 56.0 | 52.4 | 26.2 | 56.4 |

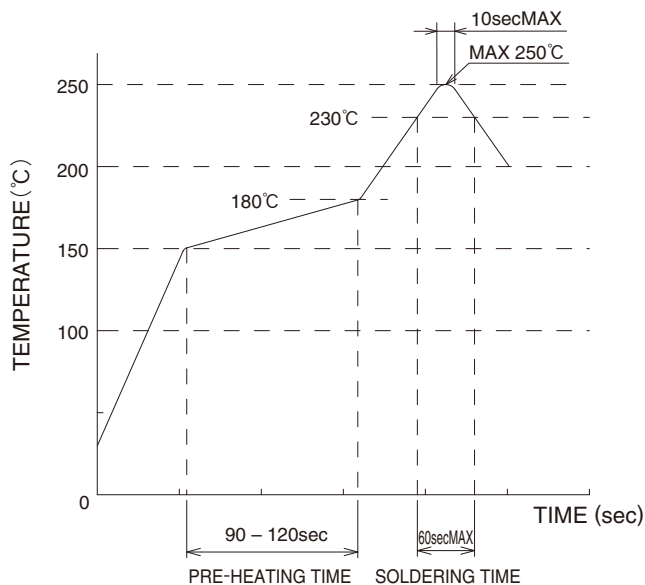
## Unit : mm



| Product Type \ Size | No. of Contacts | A    | B    | C    | D    |
|---------------------|-----------------|------|------|------|------|
| DF3EA-*P-2H(**)     | 2 to 4          | 24.0 | —    | 11.5 | 24.4 |
|                     | 5 to 7          | 32.0 | 28.4 | 14.2 | 32.4 |
|                     | 8 to 10         | 44.0 | 40.4 | 20.2 | 44.4 |
|                     | 11 to 15        | 56.0 | 52.4 | 26.2 | 56.4 |

## ◆Precautions

### 1. Recommended Temperature Profile (SMT)



#### [Applicable Conditions]

1. Peak temperature : a maximum of 250°C for no more than 10 seconds

2. Heating unit : no less than 230°C for no more than 60 seconds

3. Preheating unit : 150 to 180°C for 90 to 120 seconds

4. Number of times : no more than 2 times

\* Measurement is conducted at the contact lead part

As it may change depending on the conditions such as solder paste types, manufacturers, PCB size, and other soldering materials, please fully check the mounting conditions before use.

(Note 1) This temperature profile is a recommended value.

|                                                 |                                                                                                                                                                                                                                          |
|-------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2. Recommended Manual Soldering Condition (SMT) | Soldering iron temperature : 290±10°C, Soldering time: Within 3 seconds                                                                                                                                                                  |
| 3. Recommended Screen Thickness (SMT)           | 0.15 to 0.2mm                                                                                                                                                                                                                            |
| 4. Board Warpage (SMT)                          | Based on both connector edges, 0.03mm max. in the connector center portion                                                                                                                                                               |
| 5. Recommended Soldering Condition (DIP)        | <p>■ Flow Condition with Automatic Soldering Tool. Soldering temperature : 250±5°C, Soldering time : Within 10 seconds</p> <p>■ Manual Soldering Condition. Soldering iron temperature : 290±10°C, Soldering time : Within 2 seconds</p> |
| 6. Cleaning Condition                           | <p>Refer to the "Wire-to-Board Connector Use Hand book".</p> <p>IPA cleaning is allowed. (Cleaning is not recommended because cleaning may change the push/pull feeling etc. Please contact us when you use other cleaning agents. )</p> |
| 7. Connection Condition                         | Refer to the "Wire-to-Board Connector Use Hand book".                                                                                                                                                                                    |
| 8. Precautions                                  | Refer to the "Wire-to-Board Connector Use Hand book".                                                                                                                                                                                    |

MEMO :

Handwriting practice area with horizontal dashed lines.