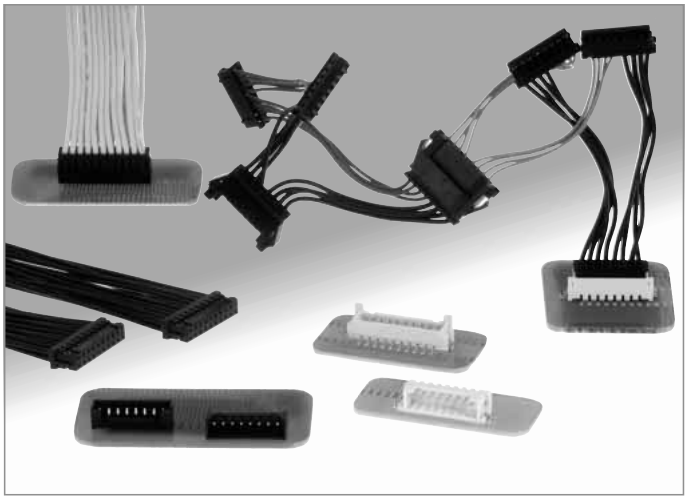
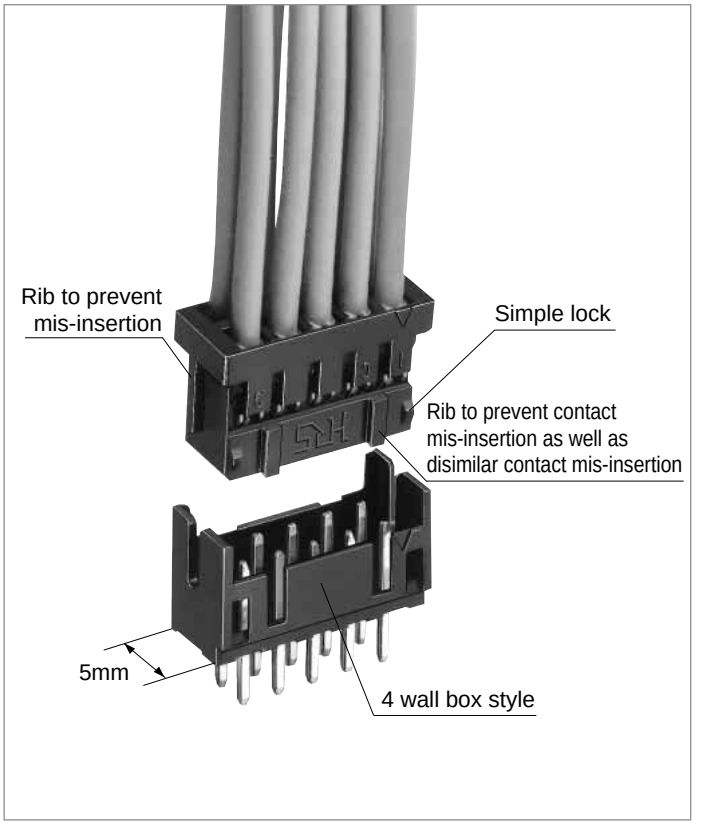
# 2mm Double-Row Connector (Product Compliant to UL/CSA Standard)

## DF11 Series






## ■Features

### 1. Space-saving on Board Realized

Double rows of 2mm pitch contact has been condensed within the 5mm width.
The multiple number of signals can be secured in the same space as the conventional 2mm single-row contact.

### 2. Broad Variation

The insulation displacement and crimping methods are prepared for connection. Thus, board to cable, in-line, board to board connectors are provided in order to widen a board design variation.
In addition, "Gold" or "Tin" can be selected for the plating according application, while the SMT products line up.

### 3. Applicable Wire Covers Wide Range

According to the double rows of 2mm pitch compact design, the applicable wire can cover AWG22 to 30.

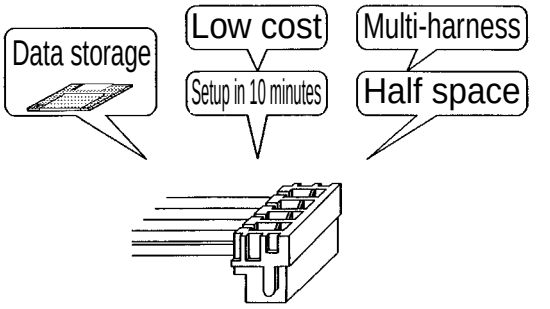
### 4. The ID Type Connector Achieves Connection Work.

Using the full automatic insulation displacement machine, the complicated multi-harness can be easily connected, reducing the man-hour and eliminating the manual work process.

## ■Features of DF11 Insulation Displacement Machine (Single Core Punching Full Automatic ID Machine AM700/DF11)

● 5 Major Features of ID Machine AM700/DF11

1. Perform the multi-harness.
2. The setup time has been widely reduced. (10 minutes maximum)
3. Space saving design.
   (About half space compared with the conventional machine)
4. Minimize initial cost with low cost.
5. The harness data can be saved in the floppy disk and easily changed.




## ■Points

Since the DF11 insulation displacemention allows double rows ID with a single part, the harness service is completed with machine connection only.

## ■Product Specifications

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Rating | Current rating (Note 1) | Crimping | Wire size | AWG #22 to #26 | : 2A | Operating Temperature Range | -30 to 85℃ Note 2 |
| | | | | AWG #28 | : 1A | Operating Humidity Range | 40 to 80% |
| | | | | AWG #30 | : 0.5A | | |
| | | Insulation Displacement | Wire size | AWG #26 | : 1A | Storage Temperature Range | -10 to 60℃ Note 3 |
| | Voltage rating | Crimping | 250V AC | Insulation Displacement | 100V AC | Storage Humidity Range | 40 to 70% |

| UL-CSA Safety Standard Approved Specification | | | | |
|---|---|---|---|---|
| Rating | Current rating | Wire size | AWG #22 | : 2A |
| | | | AWG #24 to #28 | : 1A |
| | | | AWG #30 | : 0.5A |
| | Voltage rating | 30V AC | | |

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

| Item | Specification | Condition | |
|---|---|---|---|
| 1. Insulation Resistance | 1000M ohms min. | 500V DC | |
| 2. Withstanding voltage | No flashover or insulation breakdown. | 650V AC/1 minute | |
| 3. Contact Resistance | 30m ohms max. | 100mA | |
| 4. Single Insertion/Extraction Force | 0.3N (30gf) min., 4.4N(450gf) max. | Measured by the square steel-made pin of 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: 30m ohms max. Insulation resistance: 500M ohms min. | 96 hours at temperature of 40℃ and humidity of 90% to 95% | |
| 7. Temperature Cycle | Contact resistance: 30m ohms max. Insulation resistance: 1000M ohmsmin. | (-55℃: 30 minutes → 5 to 35℃: 5 to 15 minutes<br>85℃: 30 minutes → 5 to 35℃: 5 to 15 minutes) 5 cycles | |
| 8. Durability (Mating/un-mating) | Contact resistance: 30m ohms max. | Tin plated: 30 cycles<br>Gold plated:50 cycles | |
| 9. Resistance to Soldering heat | No deformation of components affecting performance. | Flow:<br>260℃ for 10 seconds | Manual soldering:<br>300℃ for 2 seconds |
| | | Reflow:<br>At the recommended temperature profile | Manual soldering:<br>300℃ for 3 seconds |

Note 1: Current rating of header is 2A.
Note 2: Includes temperature rise caused by current flow.
Note 3: 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 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 Type | Part | Material | Finish | Remarks |
|---|---|---|---|---|
| Crimping Socket | Insulator | Polyamide | Black | UL94V-0 |
| Crimping Contact for Socket | Contact | Phosphor copper | Tin plated or gold plated | ———— |
| ID Socket | Insulator | Polyamide | Black | UL94V-0 |
| | Contact | Phosphor copper | Tin plated | ———— |
| Receptacle | Insulator | Polyamide | Black | UL94V-0 |
| | Contact | Phosphor copper | Tin plated or gold plated | ———— |
| Pin Header | Insulator | Polyamide | Black | UL94V-0 |
| | Contact | Brass | Tin plated or gold plated | ———— |
| SMT Header | Insulator | Polyamide | Beige | UL94V-0 |
| | Contact | Brass | Tin plated or gold plated | ———— |
| | Metal fittings | Brass | Tin plated | ———— |
| In-line Plug | Insulator | Polyamide | Black | UL94V-0 |
| In-line Plug Crimping Contact | Contact | Phosphor copper | Tin plated or gold plated | ———— |
| In-line Adaptor | Insulator | Polyamide | Black | UL94V-0 |
| | Contact | Brass | Tin plated | ———— |

## ■Ordering Information

### ●Connector

**DF11 - ＊ DS - 2C**
❶ ❷ ❸ ❹ ❺

| | |
|---|---|
| ❶ Series Name : DF11 | ❺ Connection Form/Contact Style |
| ❷ Number of Contacts : 4 to 32 | C : Crimping socket |
| ❸ Connector Type | R26 : Insulation Displacemented socket for AWG26 |
| DS : Double Row socket | DSA: Straight through hole |
| DP : Double Row pin header | DS : Right angle through hole |
| DEP: Double Row in-line plug | V : Straight SMT |
| ❹ Contact Pitch : 2mm | A : Adaptor |

### ●Contact

**DF11 - EP2428PCFA**
❶ ❷ ❸ ❹

| | |
|---|---|
| ❶ Contact Type | ❸ Contact Type/Packaging Type |
| Blank : For socket | SCF : Socket contact, Embossed tape |
| EP : For in-line plug | SC : Socket contact, Bag |
| ❷ Applicable Wire Size | PCF : Plug contact, Embossed tape |
| 22 : AWG22 | PC : Plug contact, Bag |
| 2428 : AWG24 to 28 | ❹ Plating Type |
| 30 : AWG30 | Blank : Tin plated |
| | A : Gold plated |

## ■ID Socket

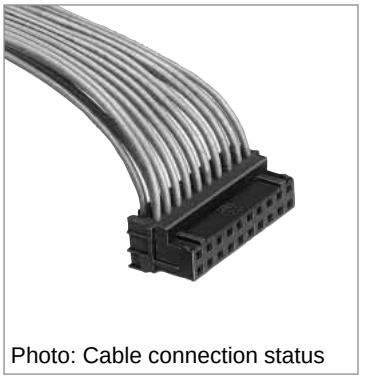
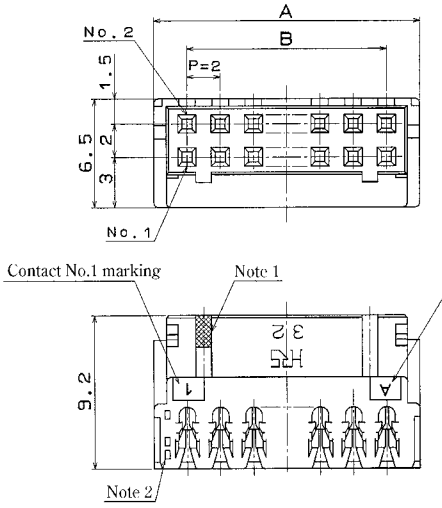


Photo: Cable connection status




Note1: Port 1-piece indicates odd number row, and port 2- pcs. indicate even number row.

Note2: Use the dip type header as follows.
· Straight angle type: DF11-∗DP-2DSA(08)
· Angle type: DF11-∗DP-2DS(24)

[Specific No.] –∗∗, (∗∗)
(05) :Tin plated, 100 pcs. per bag
(25) :Tin plated, Tube packaging

Unit: mm

| Part Number | CL No. | Number of Contacts | A | B | Tube Packaging Quantity |
|---|---|---|---|---|---|
| DF11- 4DS-2R26(∗∗) | 543-0652-0-∗∗ | 4 | 6.0 | 2.0 | 188 |
| DF11- 6DS-2R26(∗∗) | 543-0653-3-∗∗ | 6 | 8.0 | 4.0 | 140 |
| DF11- 8DS-2R26(∗∗) | 543-0654-6-∗∗ | 8 | 10.0 | 6.0 | 112 |
| DF11-10DS-2R26(∗∗) | 543-0655-9-∗∗ | 10 | 12.0 | 8.0 | 94 |
| DF11-12DS-2R26(∗∗) | 543-0656-1-∗∗ | 12 | 14.0 | 10.0 | 80 |
| DF11-14DS-2R26(∗∗) | 543-0657-4-∗∗ | 14 | 16.0 | 12.0 | 70 |
| DF11-16DS-2R26(∗∗) | 543-0658-7-∗∗ | 16 | 18.0 | 14.0 | 62 |
| DF11-18DS-2R26(∗∗) | 543-0659-0-∗∗ | 18 | 20.0 | 16.0 | 56 |
| DF11-20DS-2R26(∗∗) | 543-0660-9-∗∗ | 20 | 22.0 | 18.0 | 50 |
| DF11-22DS-2R26(∗∗) | 543-0661-1-∗∗ | 22 | 24.0 | 20.0 | 46 |
| DF11-24DS-2R26(∗∗) | 543-0662-4-∗∗ | 24 | 26.0 | 22.0 | 42 |
| DF11-26DS-2R26(∗∗) | 543-0663-7-∗∗ | 26 | 28.0 | 24.0 | 40 |
| DF11-28DS-2R26(∗∗) | 543-0664-0-∗∗ | 28 | 30.0 | 26.0 | 36 |
| DF11-30DS-2R26(∗∗) | 543-0665-2-∗∗ | 30 | 32.0 | 28.0 | 34 |
| DF11-32DS-2R26(∗∗) | 543-0666-5-∗∗ | 32 | 34.0 | 30.0 | 32 |

Note1: The specific No. (05) item is delivered per bag unit (100 pcs.). Please order products per bag unit.
Note2: To use the full automatic insulation displacement machine to punch the DF11 single contact, the (25) tube packaging specification should be applied.
Note3: Please order the tube packaging products by multiplying the packaging quantity ( pcs.).

## ■Applicable Cable

| Part Number | Applicable Cable | Jacket Diameter |
|---|---|---|
| DF11-∗DS-2R26 | UL1061 AWG26 (7/0.16) | $\phi$0.9 to 1.05mm |

## ■DF11-∗DS-2R Insulation Displacement Machine

| Type | Part Number | Connection Type | Remarks |
|---|---|---|---|
| Punching full automatic ID machine DF11 single contact | AM700/DF11 | ■Effective harness form<br>1. DF11-both ended, one ended<br>2. DF11-DF11, separation<br>3. DF11-DF3, separation<br>■Effective harness length<br>100 to 2,000mm<br>■Continuity Inspection Mechanism Equipped | The connector is applicable to (25) tube packaging. |
| Desktop ID Machine | SA700/DF11<br>CL903-0013-5 | ■Used for DF11 only, No restricted condition | Desktop machine for small lot |

## ■Crimping Socket

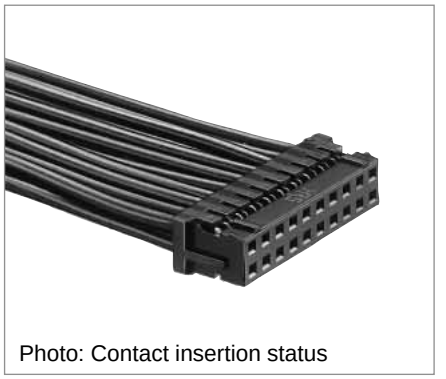
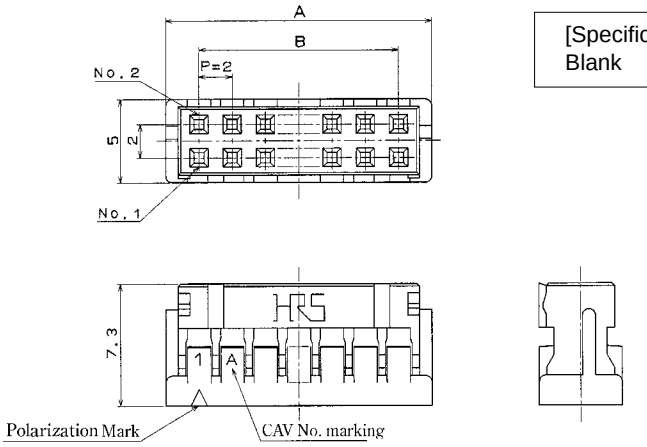


Photo: Contact insertion status




[Specific No.] –＊＊, (＊＊)
Blank :100 pcs. per pack

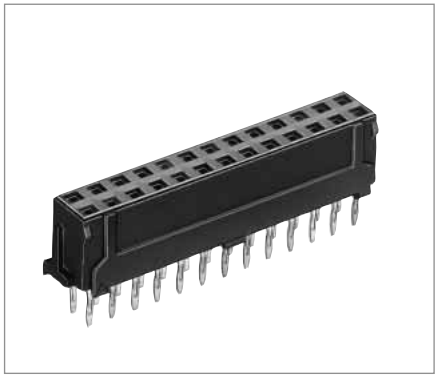
Unit: mm

| Part Number | CL No. | Number of Contacts | A | B |
|---|---|---|---|---|
| DF11- 4DS-2C(**) | 543-0568-6-** | 4 | 6.0 | 2.0 |
| DF11- 6DS-2C(**) | 543-0502-8-** | 6 | 8.0 | 4.0 |
| DF11- 8DS-2C(**) | 543-0503-0-** | 8 | 10.0 | 6.0 |
| DF11-10DS-2C(**) | 543-0504-3-** | 10 | 12.0 | 8.0 |
| DF11-12DS-2C(**) | 543-0505-6-** | 12 | 14.0 | 10.0 |
| DF11-14DS-2C(**) | 543-0506-9-** | 14 | 16.0 | 12.0 |
| DF11-16DS-2C(**) | 543-0507-1-** | 16 | 18.0 | 14.0 |
| DF11-18DS-2C(**) | 543-0508-4-** | 18 | 20.0 | 16.0 |

| Part Number | CL No. | Number of Contacts | A | B |
|---|---|---|---|---|
| DF11-20DS-2C(**) | 543-0509-7-** | 20 | 22.0 | 18.0 |
| DF11-22DS-2C(**) | 543-0510-6-** | 22 | 24.0 | 20.0 |
| DF11-24DS-2C(**) | 543-0511-9-** | 24 | 26.0 | 22.0 |
| DF11-26DS-2C(**) | 543-0512-1-** | 26 | 28.0 | 24.0 |
| DF11-28DS-2C(**) | 543-0513-4-** | 28 | 30.0 | 26.0 |
| DF11-30DS-2C(**) | 543-0514-7-** | 30 | 32.0 | 28.0 |
| DF11-32DS-2C(**) | 543-0515-0-** | 32 | 34.0 | 30.0 |

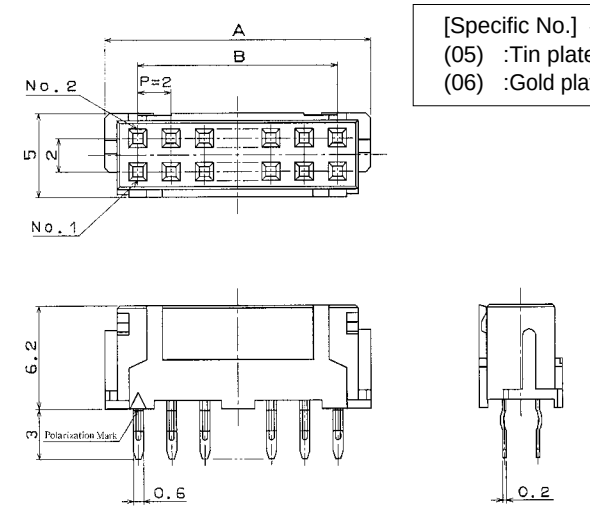
Note: Delivered per bag unit (100 pcs.). Please order products bag pack unit.

## ■Receptacle (DIP)



●Board Through-hole Diameter: $\phi 0.8^{+0.1}_{0}$

●Kink Prefixed Effective Diameter: $\phi 0.8^{+0.05}_{0}$




[Specific No.] –＊＊, (＊＊)
(05) :Tin plated 100 pcs. per pack
(06) :Gold plated 100 pcs. per pack

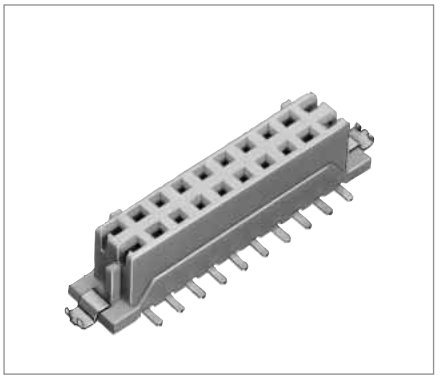
Unit: mm

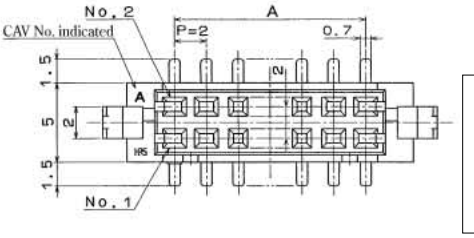
| Part Number | CL No. | Number of Contacts | A | B |
|---|---|---|---|---|
| DF11- 6DS-2DSA(**) | 543-0553-9-** | 6 | 8.0 | 4.0 |
| DF11- 8DS-2DSA(**) | 543-0554-1-** | 8 | 10.0 | 6.0 |
| DF11-10DS-2DSA(**) | 543-0555-4-** | 10 | 12.0 | 8.0 |
| DF11-12DS-2DSA(**) | 543-0556-7-** | 12 | 14.0 | 10.0 |
| DF11-14DS-2DSA(**) | 543-0557-0-** | 14 | 16.0 | 12.0 |
| DF11-16DS-2DSA(**) | 543-0558-2-** | 16 | 18.0 | 14.0 |
| DF11-18DS-2DSA(**) | 543-0559-5-** | 18 | 20.0 | 16.0 |

| Part Number | CL No. | Number of Contacts | A | B |
|---|---|---|---|---|
| DF11-20DS-2DSA(**) | 543-0560-4-** | 20 | 22.0 | 18.0 |
| DF11-22DS-2DSA(**) | 543-0561-7-** | 22 | 24.0 | 20.0 |
| DF11-24DS-2DSA(**) | 543-0562-0-** | 24 | 26.0 | 22.0 |
| DF11-26DS-2DSA(**) | 543-0563-2-** | 26 | 28.0 | 24.0 |
| DF11-28DS-2DSA(**) | 543-0564-5-** | 28 | 30.0 | 26.0 |
| DF11-30DS-2DSA(**) | 543-0565-8-** | 30 | 32.0 | 28.0 |
| DF11-32DS-2DSA(**) | 543-0566-0-** | 32 | 34.0 | 30.0 |

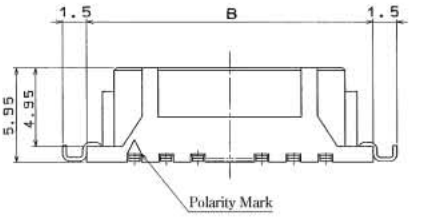
Note: Delivered per bag unit (100 pcs.). Please order products per bag unit.

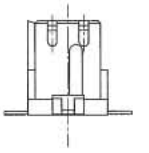
## ■Receptacle (SMT)






[Specific No.] –＊＊, (＊＊)
(22) :Tin plated embossed tape packaging (with vacuum pick-up cap)
(52) :Gold plated embossed tape packaging (with vacuum pick-up cap)



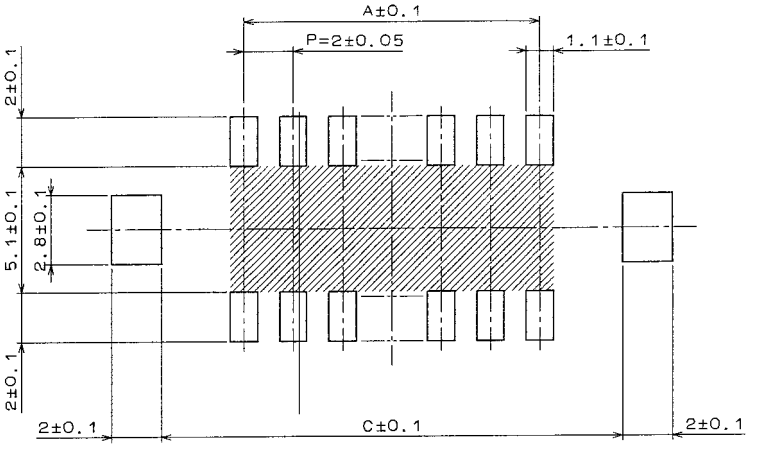



Unit: mm

| Part Number | CL No. | Number of Contacts | A | B | C |
|---|---|---|---|---|---|
| DF11CZ- 4DS-2V(＊＊) | CL543-2063-0-＊＊ | 4 | 2.0 | 8.5 | 8.7 |
| DF11CZ- 6DS-2V(＊＊) | CL543-2064-3-＊＊ | 6 | 4.0 | 10.5 | 10.7 |
| DF11CZ- 8DS-2V(＊＊) | CL543-2065-6-＊＊ | 8 | 6.0 | 12.5 | 12.7 |
| DF11CZ-10DS-2V(＊＊) | CL543-2066-9-＊＊ | 10 | 8.0 | 14.5 | 14.7 |
| DF11CZ-18DS-2V(＊＊) | CL543-2070-6-＊＊ | 18 | 16.0 | 22.5 | 22.7 |
| DF11CZ-20DS-2V(＊＊) | CL543-2071-9-＊＊ | 20 | 18.0 | 24.5 | 24.7 |
| DF11CZ-22DS-2V(＊＊) | CL543-2072-1-＊＊ | 22 | 20.0 | 26.5 | 26.7 |
| DF11CZ-26DS-2V(＊＊) | CL543-2074-7-＊＊ | 26 | 24.0 | 30.5 | 30.7 |
| DF11CZ-30DS-2V(＊＊) | CL543-2076-2-＊＊ | 30 | 28.0 | 34.5 | 34.7 |
| DF11CZ-40DS-2V(＊＊) | CL543-0584-2-＊＊ | 40 | 38.0 | 44.5 | 44.7 |

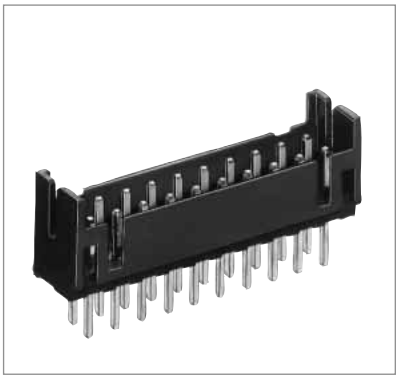
Note1: Tape and reel packaging(500 pieces/reel). Order by number of reels.
Note2: The 40 contacts connector is marchandized only in combination with the SMT product.
Note3: Embossed packaging products have the reel wrapped in polyethylene and include a desiccant.

## ■PCB mounting pattern

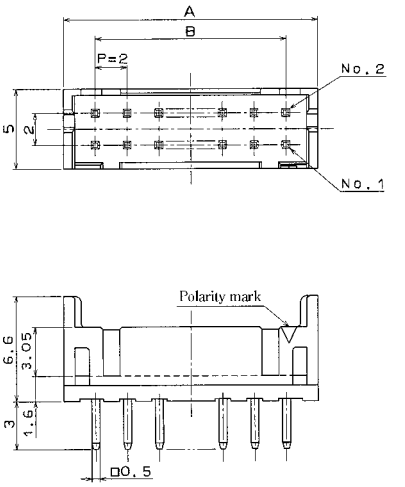



Note:If the pattern is included in the shaded area and not treated with resist, it could touch the connector contact .

## ■Straight Pin Header



●Board Through-hole Diameter: $\phi 0.8^{+0.1}_{0}$




[Specific No.] –＊＊, (＊＊)
(01) : Gold plated
(08) : Tin plated
(24) : Tin plated tube package product

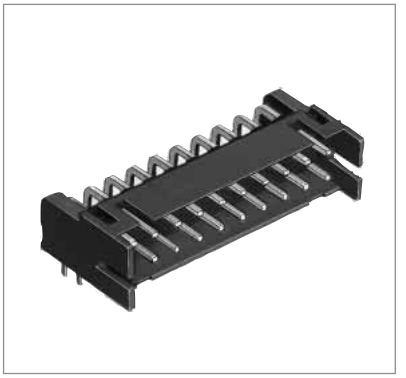
Unit: mm

| Part Number | CL No. | Number of Contacts | A | B | Tube Package Quantity |
|---|---|---|---|---|---|
| DF11- 4DP-2DSA(＊＊) | 543-0517-5-＊＊ | 4 | 6.0 | 2.0 | 81pcs. |
| DF11- 6DP-2DSA(＊＊) | 543-0518-8-＊＊ | 6 | 8.0 | 4.0 | 61 |
| DF11- 8DP-2DSA(＊＊) | 543-0519-0-＊＊ | 8 | 10.0 | 6.0 | 49 |
| DF11-10DP-2DSA(＊＊) | 543-0520-0-＊＊ | 10 | 12.0 | 8.0 | 40 |
| DF11-12DP-2DSA(＊＊) | 543-0521-2-＊＊ | 12 | 14.0 | 10.0 | 34 |
| DF11-14DP-2DSA(＊＊) | 543-0522-5-＊＊ | 14 | 16.0 | 12.0 | 30 |
| DF11-16DP-2DSA(＊＊) | 543-0523-8-＊＊ | 16 | 18.0 | 14.0 | 27 |
| DF11-18DP-2DSA(＊＊) | 543-0524-0-＊＊ | 18 | 20.0 | 16.0 | 24 |

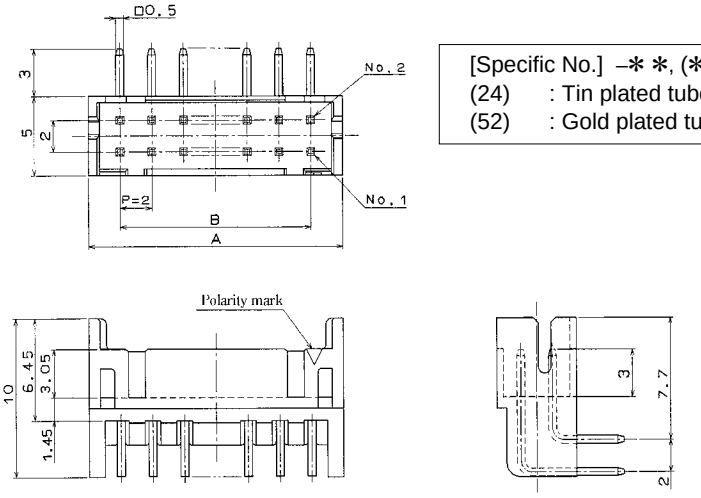
| Part Number | CL No. | Number of Contacts | A | B | Tube Package Quantity |
|---|---|---|---|---|---|
| DF11-20DP-2DSA(＊＊) | 543-0525-3-＊＊ | 20 | 22.0 | 18.0 | 22pcs. |
| DF11-22DP-2DSA(＊＊) | 543-0526-6-＊＊ | 22 | 24.0 | 20.0 | 20 |
| DF11-24DP-2DSA(＊＊) | 543-0527-9-＊＊ | 24 | 26.0 | 22.0 | 18 |
| DF11-26DP-2DSA(＊＊) | 543-0528-1-＊＊ | 26 | 28.0 | 24.0 | 17 |
| DF11-28DP-2DSA(＊＊) | 543-0529-4-＊＊ | 28 | 30.0 | 26.0 | 16 |
| DF11-30DP-2DSA(＊＊) | 543-0530-3-＊＊ | 30 | 32.0 | 28.0 | 15 |
| DF11-32DP-2DSA(＊＊) | 543-0531-6-＊＊ | 32 | 34.0 | 30.0 | 14 |

Note1: Specific No. (01) and (08) items are delivered per bag unit (100 pcs.). Please order products per bagunit.
Note2: Please order the tube packaging products, by mutiplying a tube quantity( pcs.).

## ■Right Angle Pin Header



●Board Through-hole Diameter: $\phi 0.8^{+0.1}_{0}$




[Specific No.] –＊＊, (＊＊)
(24) : Tin plated tube packaging product
(52) : Gold plated tube packaging product

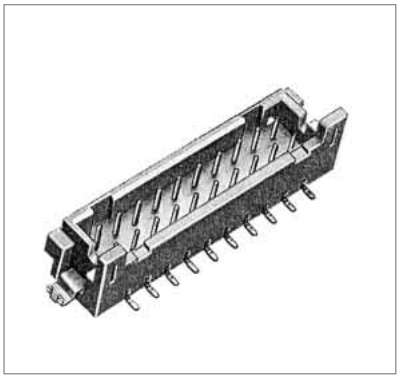
Unit: mm

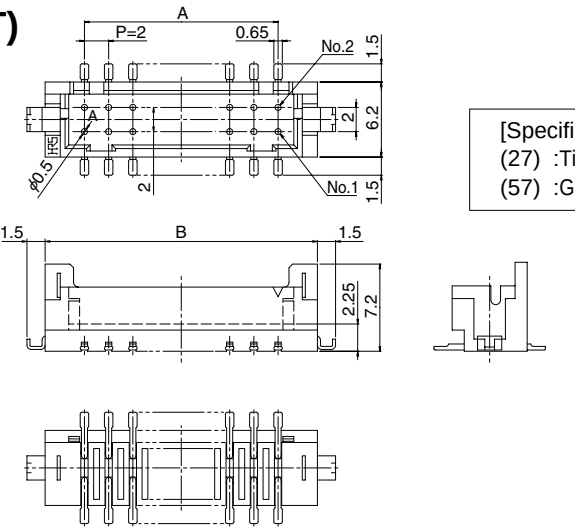
| Part Number | CL No. | Number of Contacts | A | B | Tube Package Quantity |
|---|---|---|---|---|---|
| DF11- 4DP-2DS(＊＊) | 543-0533-1-＊＊ | 4 | 6.0 | 2.0 | 81pcs. |
| DF11- 6DP-2DS(＊＊) | 543-0534-4-＊＊ | 6 | 8.0 | 4.0 | 61 |
| DF11- 8DP-2DS(＊＊) | 543-0535-7-＊＊ | 8 | 10.0 | 6.0 | 48 |
| DF11-10DP-2DS(＊＊) | 543-0536-0-＊＊ | 10 | 12.0 | 8.0 | 40 |
| DF11-12DP-2DS(＊＊) | 543-0537-2-＊＊ | 12 | 14.0 | 10.0 | 34 |
| DF11-14DP-2DS(＊＊) | 543-0538-5-＊＊ | 14 | 16.0 | 12.0 | 30 |
| DF11-16DP-2DS(＊＊) | 543-0539-8-＊＊ | 16 | 18.0 | 14.0 | 27 |
| DF11-18DP-2DS(＊＊) | 543-0540-7-＊＊ | 18 | 20.0 | 16.0 | 24 |

| Part Number | CL No. | Number of Contacts | A | B | Tube Package Quantity |
|---|---|---|---|---|---|
| DF11-20DP-2DS(＊＊) | 543-0541-0-＊＊ | 20 | 22.0 | 18.0 | 22pcs. |
| DF11-22DP-2DS(＊＊) | 543-0542-2-＊＊ | 22 | 24.0 | 20.0 | 20 |
| DF11-24DP-2DS(＊＊) | 543-0543-5-＊＊ | 24 | 26.0 | 22.0 | 18 |
| DF11-26DP-2DS(＊＊) | 543-0544-8-＊＊ | 26 | 28.0 | 24.0 | 17 |
| DF11-28DP-2DS(＊＊) | 543-0545-0-＊＊ | 28 | 30.0 | 26.0 | 16 |
| DF11-30DP-2DS(＊＊) | 543-0546-3-＊＊ | 30 | 32.0 | 28.0 | 15 |
| DF11-32DP-2DS(＊＊) | 543-0547-6-＊＊ | 32 | 34.0 | 30.0 | 14 |

Note1: Please order the tube packaging product by mutiplying a tube quantity( pcs.).

## ■Straight Pin Header (SMT)





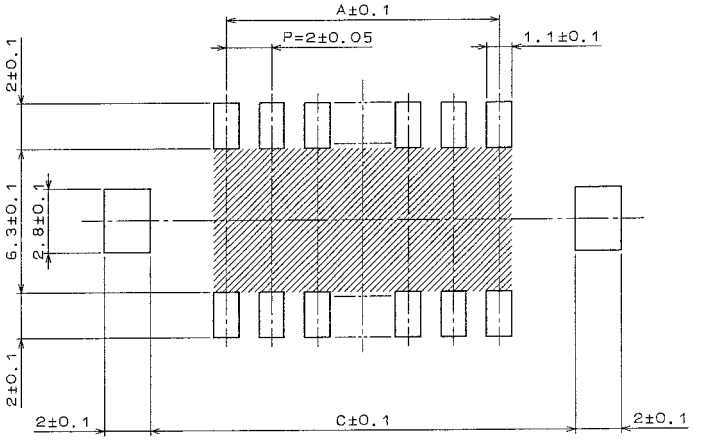

[Specific No.] –＊＊, (＊＊)
(27) :Tin plated embossed tape packaging
(57) :Gold plated embossed tape packaging

Unit: mm

| Tin plated | | Gold plated | | | | | |
|---|---|---|---|---|---|---|---|
| Part Number | CL Numer | Part Number | CL Numer | Number of contacts | A | B | C |
| DF11CZ- 4DP-2V(27) | 0543-2047-4-27 | DF11C- 4DP-2V(57) | 0543-0682-1-57 | 4 | 2.0 | 8.5 | 8.7 |
| DF11CZ- 6DP-2V(27) | 0543-2048-7-27 | DF11C- 6DP-2V(57) | 0543-0683-4-57 | 6 | 4.0 | 10.5 | 10.7 |
| DF11CZ- 8DP-2V(27) | 0543-2049-0-27 | DF11C- 8DP-2V(57) | 0543-0684-7-57 | 8 | 6.0 | 12.5 | 12.7 |
| DF11CZ-10DP-2V(27) | 0543-2050-9-27 | DF11C-10DP-2V(57) | 0543-0685-0-57 | 10 | 8.0 | 14.5 | 14.7 |
| DF11CZ-12DP-2V(27) | 0543-2051-1-27 | DF11C-12DP-2V(57) | 0543-0686-2-57 | 12 | 10.0 | 16.5 | 16.7 |
| DF11CZ-14DP-2V(27) | 0543-2052-4-27 | DF11C-14DP-2V(57) | 0543-0687-5-57 | 14 | 12.0 | 18.5 | 18.7 |
| DF11CZ-16DP-2V(27) | 0543-2053-7-27 | DF11C-16DP-2V(57) | 0543-0688-8-57 | 16 | 14.0 | 20.5 | 20.7 |
| DF11CZ-18DP-2V(27) | 0543-2054-0-27 | DF11C-18DP-2V(57) | 0543-0689-0-57 | 18 | 16.0 | 22.5 | 22.7 |
| DF11CZ-20DP-2V(27) | 0543-2055-2-27 | DF11C-20DP-2V(57) | 0543-0690-0-57 | 20 | 18.0 | 24.5 | 24.7 |
| DF11CZ-22DP-2V(27) | 0543-2056-5-27 | DF11C-22DP-2V(57) | 0543-0691-2-57 | 22 | 20.0 | 26.5 | 26.7 |
| DF11CZ-24DP-2V(27) | 0543-2057-8-27 | DF11C-24DP-2V(57) | 0543-0692-5-57 | 24 | 22.0 | 28.5 | 28.7 |
| DF11CZ-26DP-2V(27) | 0543-2058-0-27 | DF11C-26DP-2V(57) | 0543-0693-8-57 | 26 | 24.0 | 30.5 | 30.7 |
| DF11CZ-28DP-2V(27) | 0543-2059-3-27 | DF11C-28DP-2V(57) | 0543-0694-0-57 | 28 | 26.0 | 32.5 | 32.7 |
| DF11CZ-30DP-2V(27) | 0543-2060-2-27 | DF11C-30DP-2V(57) | 0543-0695-3-57 | 30 | 28.0 | 34.5 | 34.7 |
| DF11CZ-32DP-2V(27) | 0543-2061-5-27 | DF11C-32DP-2V(57) | 0543-0696-6-57 | 32 | 30.0 | 36.5 | 36.7 |
| DF11CZ-40DP-2V(27) | 0543-2062-8-27 | DF11C-40DP-2V(57) | 0543-0697-9-57 | 40 | 38.0 | 44.5 | 44.7 Note2 |

Note1: Tape and reel packaging(500 pieces/reel). Order by number of reels.
Note2: The 40 contacts connector is merchandized in combination with the SMT product.
Note3: Embossed packaging products have the reel wrapped in polyethylene and include a desiccant.

## ■PCB mounting pattern




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

## ■In-line Plug

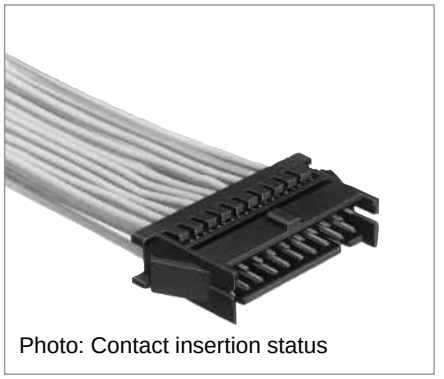
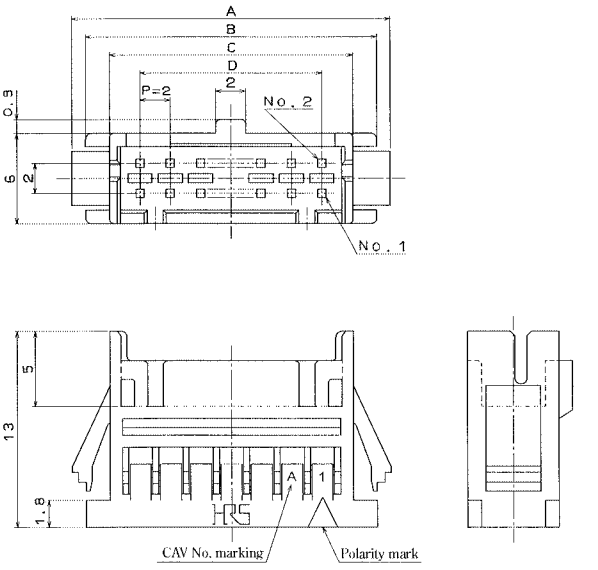
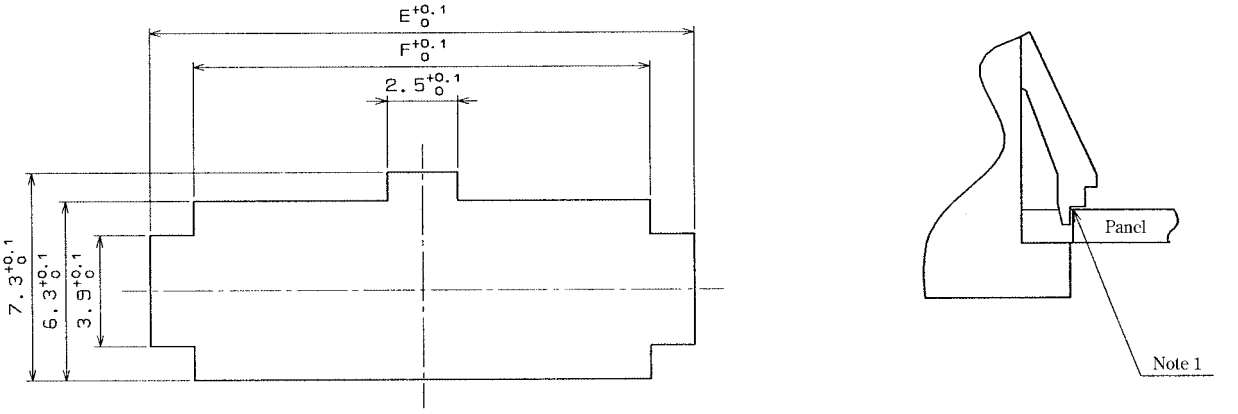


Photo: Contact insertion status




## ■In-line Plug Panel Cutouts



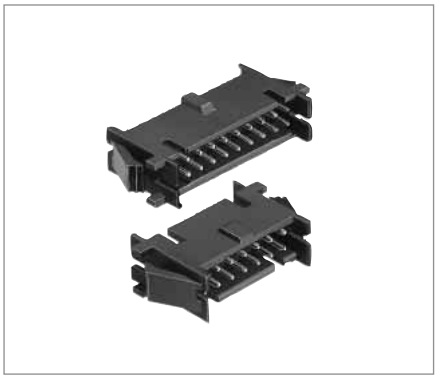

Note1: Please use the non-radius side for the panel hooking area.
Note2: Applicable panel thicknessing is 1.6 to 1.0mm (A slight deviation will occur for the thickness except for 1.6 and 1.2mm.)

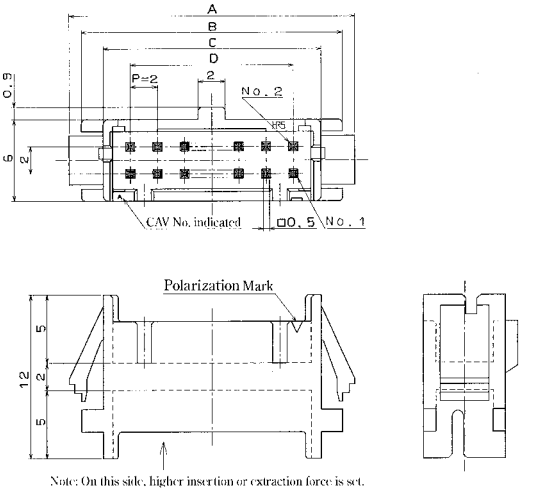
Unit: mm

| Part Number | CL No. | Number of Contacts | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|
| DF11- 4DEP-2C | 543-0619-5 | 4 | 11.0 | 9.2 | 6.0 | 2.0 | 9.4 | 6.3 |
| DF11- 6DEP-2C | 543-0620-4 | 6 | 13.0 | 11.2 | 8.0 | 4.0 | 11.4 | 8.3 |
| DF11- 8DEP-2C | 543-0621-7 | 8 | 15.0 | 13.2 | 10.0 | 6.0 | 13.4 | 10.3 |
| DF11-10DEP-2C | 543-0622-0 | 10 | 17.0 | 15.2 | 12.0 | 8.0 | 15.4 | 12.3 |
| DF11-12DEP-2C | 543-0623-2 | 12 | 19.0 | 17.2 | 14.0 | 10.0 | 17.4 | 14.3 |
| DF11-14DEP-2C | 543-0624-5 | 14 | 21.0 | 19.2 | 16.0 | 12.0 | 19.4 | 16.3 |
| DF11-16DEP-2C | 543-0625-8 | 16 | 23.0 | 21.2 | 18.0 | 14.0 | 21.4 | 18.3 |
| DF11-18DEP-2C | 543-0626-0 | 18 | 25.0 | 23.2 | 20.0 | 16.0 | 23.4 | 20.3 |
| DF11-20DEP-2C | 543-0627-3 | 20 | 27.0 | 25.2 | 22.0 | 18.0 | 25.4 | 22.3 |
| DF11-22DEP-2C | 543-0628-6 | 22 | 29.0 | 27.2 | 24.0 | 20.0 | 27.4 | 24.3 |
| DF11-24DEP-2C | 543-0629-9 | 24 | 31.0 | 29.2 | 26.0 | 22.0 | 29.4 | 26.3 |
| DF11-26DEP-2C | 543-0630-8 | 26 | 33.0 | 31.2 | 28.0 | 24.0 | 31.4 | 28.3 |
| DF11-28DEP-2C | 543-0631-0 | 28 | 35.0 | 33.2 | 30.0 | 26.0 | 33.4 | 30.3 |
| DF11-30DEP-2C | 543-0632-3 | 30 | 37.0 | 35.2 | 32.0 | 28.0 | 35.4 | 32.3 |
| DF11-32DEP-2C | 543-0633-6 | 32 | 39.0 | 37.2 | 34.0 | 30.0 | 37.4 | 34.3 |

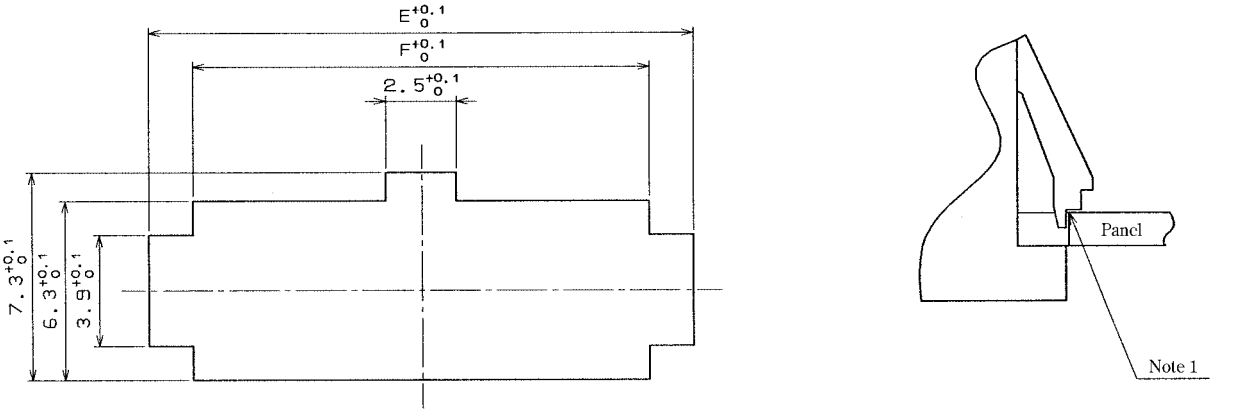
Note1: Delivered per bag unit (100 pcs.). Please order products per bag unit.

## ■In-line Adaptor






## ■In-line Adaptor Panel Cutouts



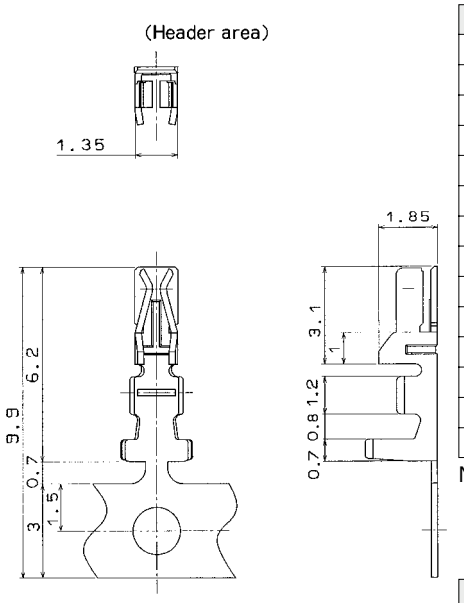

Note1: Please use the non-radius surface in the panel hooking area.
Note2: Applicable panel thickness is 1.6 to 1.0mm (A slight backlash will occur in the thickness other than 1.6 and 1.2mm.)

Unit: mm

| Part Number | CL No. | Number of Contacts | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|
| DF11- 4DEP-2A | 543-0698-1 | 4 | 11.0 | 9.2 | 6.0 | 2.0 | 9.4 | 6.3 |
| DF11- 6DEP-2A | 543-0699-4 | 6 | 13.0 | 11.2 | 8.0 | 4.0 | 11.4 | 8.3 |
| DF11- 8DEP-2A | 543-0700-1 | 8 | 15.0 | 13.2 | 10.0 | 6.0 | 13.4 | 10.3 |
| DF11-10DEP-2A | 543-0701-4 | 10 | 17.0 | 15.2 | 12.0 | 8.0 | 15.4 | 12.3 |
| DF11-12DEP-2A | 543-0702-7 | 12 | 19.0 | 17.2 | 14.0 | 10.0 | 17.4 | 14.3 |
| DF11-14DEP-2A | 543-0703-0 | 14 | 21.0 | 19.2 | 16.0 | 12.0 | 19.4 | 16.3 |
| DF11-16DEP-2A | 543-0704-2 | 16 | 23.0 | 21.2 | 18.0 | 14.0 | 21.4 | 18.3 |
| DF11-18DEP-2A | 543-0705-5 | 18 | 25.0 | 23.2 | 20.0 | 16.0 | 23.4 | 20.3 |
| DF11-20DEP-2A | 543-0706-8 | 20 | 27.0 | 25.2 | 22.0 | 18.0 | 25.4 | 22.3 |
| DF11-22DEP-2A | 543-0707-0 | 22 | 29.0 | 27.2 | 24.0 | 20.0 | 27.4 | 24.3 |
| DF11-24DEP-2A | 543-0708-3 | 24 | 31.0 | 29.2 | 26.0 | 22.0 | 29.4 | 26.3 |
| DF11-26DEP-2A | 543-0709-6 | 26 | 33.0 | 31.2 | 28.0 | 24.0 | 31.4 | 28.3 |
| DF11-28DEP-2A | 543-0710-5 | 28 | 35.0 | 33.2 | 30.0 | 26.0 | 33.4 | 30.3 |
| DF11-30DEP-2A | 543-0711-8 | 30 | 37.0 | 35.2 | 32.0 | 28.0 | 35.4 | 32.3 |
| DF11-32DEP-2A | 543-0712-0 | 32 | 39.0 | 37.2 | 34.0 | 30.0 | 37.4 | 34.3 |

Note1: Delivered per bag unit (100 pcs.). Please order products per bag unit.

## ■Crimping Contact for Socket




| Part Number | CL No. | Type | Quantity | | Finish |
|---|---|---|---|---|---|
| DF11-22SCF | 543-0601-0 | Reel contact | 10000 pcs. | per reel | Tin plated |
| DF11-22SC | 543-0602-2 | Bulk contact | 100 pcs. | per bag | |
| DF11-2428SCF | 543-0500-2 | Reel contact | 10000 pcs. | per reel | |
| DF11-2428SC | 543-0501-5 | Bulk contact | 100 pcs. | per bag | |
| DF11A-2428SCF | 543-0634-9 | Reel contact | 10000 pcs. | per reel | |
| DF11A-2428SC | 543-0635-1 | Bulk contact | 100 pcs. | per bag | |
| DF11-30SCF | 543-0605-0 | Reel contact | 10000 pcs. | per reel | |
| DF11-30SC | 543-0606-3 | Bulk contact | 100 pcs. | per bag | |
| DF11-22SCFA(04) | 543-0603-5-04 | Reel contact | 10000 pcs. | per reel | Gold plated |
| DF11-22SCA | 543-0604-8 | Bulk contact | 100 pcs. | per bag | |
| DF11-2428SCFA(04) | 543-0550-0-04 | Reel contact | 10000 pcs. | per reel | |
| DF11-2428SCA | 543-0551-3 | Bulk contact | 100 pcs. | per bag | |
| DF11-30SCFA(04) | 543-0607-6-04 | Reel contact | 10000 pcs. | per reel | |
| DF11-30SCA | 543-0608-9 | Bulk contact | 100 pcs. | per bag | |

Note1: DF11A-2428SCF/SC is of tin plated low insertion/extraction type.

### ●Applicable Wire (Tin Plated Annealed Copper Wire)

| Conductor Size (Wire Structure) | Jacket Diameter |
|---|---|
| AWG 22 (17pcs./0.16mm) | $\phi$1.2 to $\phi$1.45mm |
| AWG 24 (11pcs./0.16mm) | $\phi$0.9 to $\phi$1.45mm |
| AWG 26 (7pcs./0.16mm) | |
| AWG 28 (7pcs./0.127mm) | |
| AWG 30 (7pcs./0.1mm) | $\phi$0.75 to $\phi$1.2mm |

### ●Recommended Wire

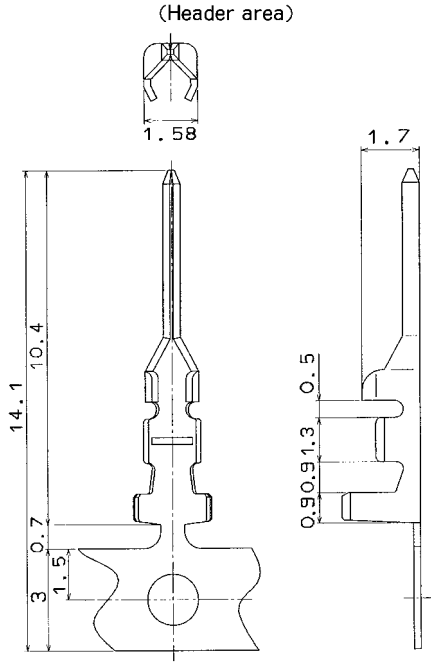
UL1061, UL1007 (Note 2.)

### ●Strip Length

1.7 to 2.3mm

Note1: If other wires are used than the applicable wire, consult the HRS sales department.
Note2: DF11-22SCF/SC/SCFA/SCA is for UL1061.

## ■Crimping Contact for In-line Plug




| Part Number | CL No. | Type | Quantity | | Finish |
|---|---|---|---|---|---|
| DF11EP2428PCF | 543-0615-4 | Reel contact | 10000 pcs. | per reel | Tin plated |
| DF11EP2428PC | 543-0616-7 | Bulk contact | 100 pcs. | per bag | |
| DF11EP2428PCFA | 543-0617-0 | Reel contact | 10000 pcs. | per reel | Gold plated |
| DF11-EP2428PCA | 543-0618-2 | Bulk contact | 100 pcs. | per bag | |

### ●Applicable Wire (Tin Plated Annealed Copper Wire)

| Conductor Size (Contact Wire Structure) | Jacket Diameter |
|---|---|
| AWG 24 (11pcs./0.16mm) | $\phi$0.9 to $\phi$1.45mm |
| AWG 26 (7pcs./0.16mm) | |
| AWG 28 (7pcs./0.127mm) | |

### ●Recommended Wire

UL1061, UL1007

### ●Strip Length

1.9 to 2.3mm

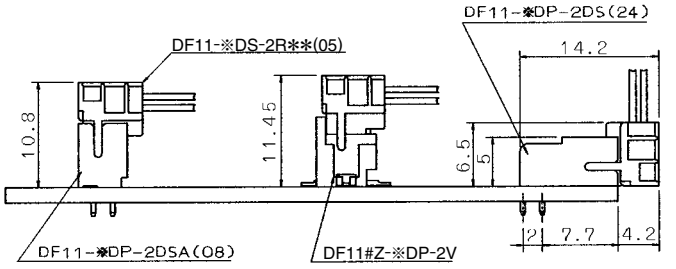
Note1: If other wires are used than the applicable wire, consult the HRS sales department.

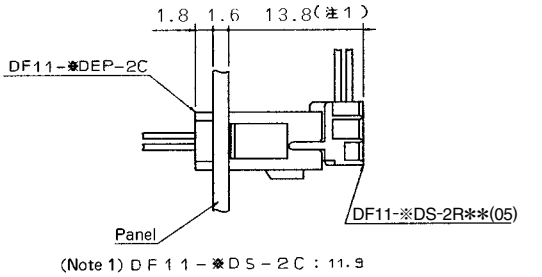
## ■Applicable Crimping Tool

| Type | Part Number | CL No. | Applicable Contact |
|---|---|---|---|
| Applicator | AP105-DF11-22S | 901-4529-7 | DF11 -22SCF/SCFA(04) |
| | AP105-DF11-2428S | 901-4511-1 | DF11 -2428SCF/SCFA(04)<br>DF11A-2428SCF |
| | AP105-DF11-30S | 901-4532-1 | DF11 -30SCF/SCFA(04) |
| | AP105-DF11-EP2428P | 901-4528-4 | DF11 -EP2428PCF/PCFA |
| Press Unit | CM-105 | 901-0005-4 | ——————— |
| Hand Crimping Tool | DF11-TA22HC | 550-0228-6 | DF11 -22SC/SCA |
| | DF11-TA2428HC | 550-0197-4 | DF11 -2428SC/SCA<br>DF11A-2428SC |
| | DF11-TA30HC | 550-0230-8 | DF11 -30SC/SCA |
| | DF11EP-TA2428HC | 550-0227-3 | DF11 -EP2428PC/PCA |
| Extraction Tool | DF-C-PO(B) | 550-0179-2 | DF11 -✻✻✻✻SCF<br>DF11 -EP✻✻✻✻PCF |

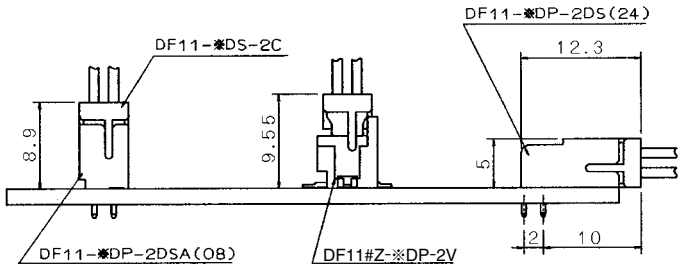
Note: If any trouble has occurred due to tools other than the designated tool, Hirose bears no respoisibility for any trouble.

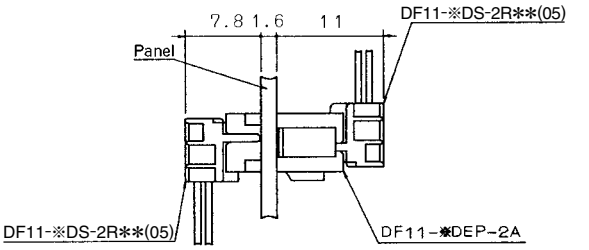
# ■Application Pattern

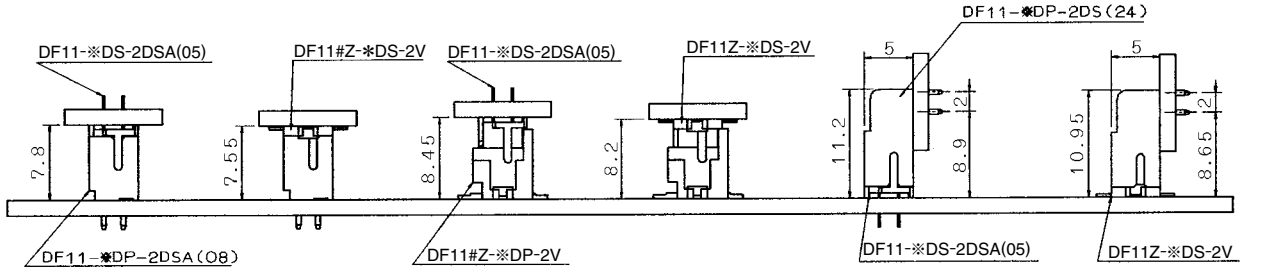



(Note 1) DF11-※DS-2C : 11.9

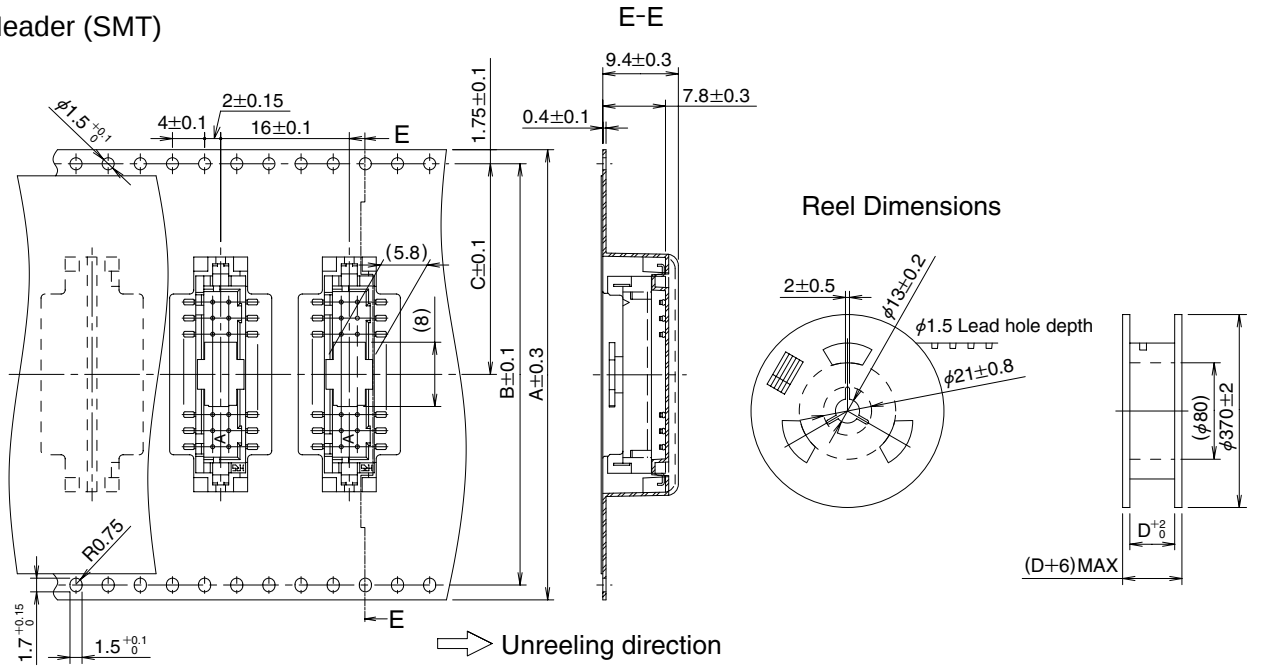


# ■Embossed Carrier tape Dimensions

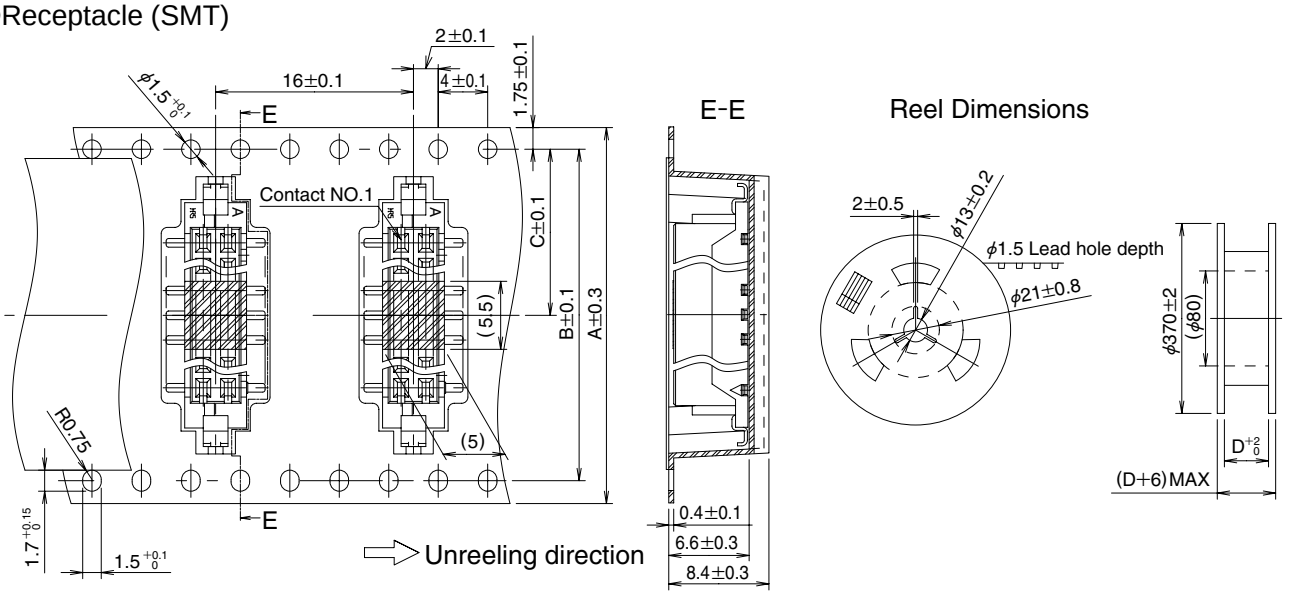
●Header (SMT)




Unit: mm

| Product Type / Size | Number of Contacts | A | B | C | D |
|---|---|---|---|---|---|
| DF11CZ-**DP-2V(27)<br>DF11C-**DP-2V(57) | 4～8 | 24.0 | ———— | 11.5 | 24.4 |
| | 10～12 | 32.0 | 28.4 | 14.2 | 32.4 |
| | 14～22 | 44.0 | 40.4 | 20.2 | 44.4 |
| | 24～32 | 56.0 | 52.4 | 26.2 | 56.4 |
| | 40 | 72.0 | 68.4 | 34.2 | 72.4 |

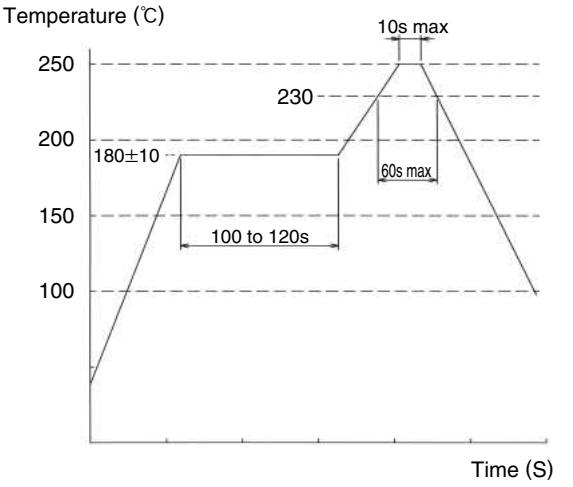
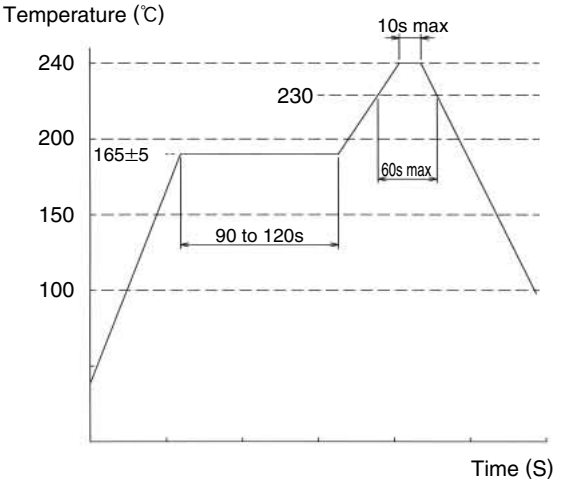
●Receptacle (SMT)




Unit: mm

| Product Type / Size | Number of Contacts | A | B | C | D |
|---|---|---|---|---|---|
| DF11CZ-**DS-2V | 4～8 | 24.0 | ———— | 11.5 | 24.4 |
| | 10～12 | 32.0 | 28.4 | 14.2 | 32.4 |
| | 14～18 | 44.0 | 40.4 | 20.2 | 44.4 |
| | 20 | 56.0 | 52.4 | 26.2 | 56.4 |
| | 22 | 44.0 | 40.4 | 20.2 | 44.4 |
| | 24～32 | 56.0 | 52.4 | 26.2 | 56.4 |
| | 40 | 72.0 | 68.4 | 34.2 | 72.4 |

## ■Precautions

| | |
|---|---|
| 1. Recommended Temperature Profile (SMT) | <br>Note1: 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<br>Note2: The temperature profile indicates the board surface temperature at the point of contacts with the connector terminals.<br>Note3: This reflow profile is for the connectors packaged in embossed tape(reel), with desiccant in the package.<br><br>Note4: Reflow temperature for SMT connectors in another package is 240℃, 10 sec.max. |
| 2. Recommended Manual Soldering Condition (SMT) | Soldering iron temperature: 290±10℃, Soldering time: Within 2 seconds |
| 3. Recommended Screen Thickness (SMT) | 0.15 to 0.2mm |
| 4. Board Warp age (SMT) | Based on the both connector edges, 0.03mm max. is allowed in the connector center area. |
| 5. Recommended Soldering Condition(Through hole) | Flow: 250℃ for 10 seconds<br>Manual soldering: 290℃ for 2 seconds |
| 6. Cleaning Condition | Refer to the "Nylon Connector Use Hand book". |
| 7. Connection Condition | Refer to the "Nylon Connector Use Hand book". |

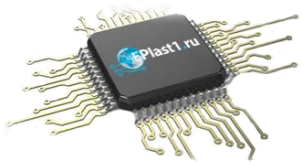
Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits,General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.




**Как с нами связаться**

**Телефон:** 8 (812) 309 58 32 (многоканальный)
**Факс:** 8 (812) 320-02-42
**Электронная почта:** org@eplast1.ru
**Адрес:** 198099, г. Санкт-Петербург, ул. Калинина, дом 2, корпус 4, литера А.