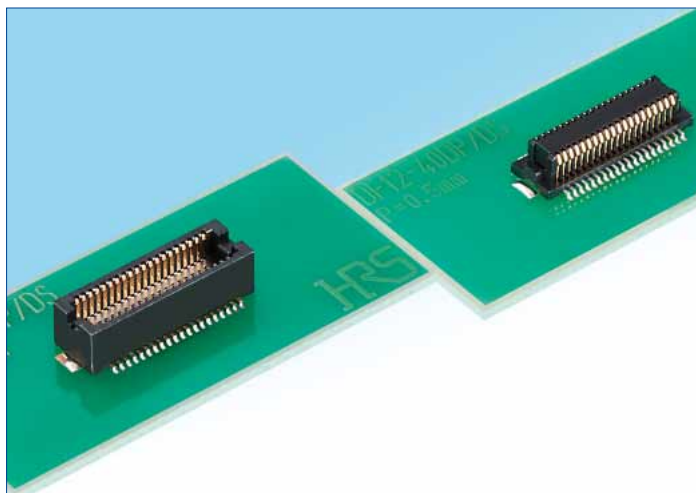


# 0.5mm Pitch SMT Board-to-Board Connectors

## DF12N Series



### Pick & Place Mounting

Vacuum Pick-up Area Available for Pick & Place Mounting Machines.

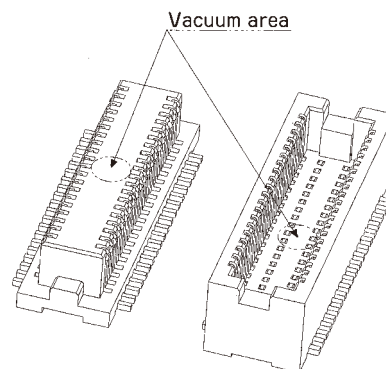
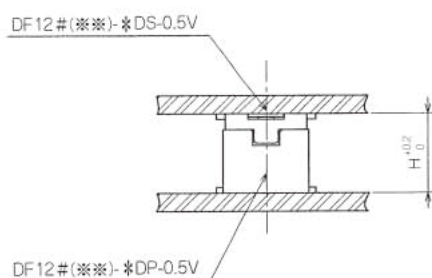


Fig.1

## Features

### 1. Wide Variety of Stacking Heights

Stacking heights of 3mm, 3.5mm 4mm and 5mm are provided in addition to the ultra-compact size of 0.5mm pitch.



| Header/Receptacle   | DF12#(3.0)-*DS-0.5V<br>Combination Stacking Height | DF12#-*DS-0.5V<br>Combination Stacking Height |
|---------------------|----------------------------------------------------|-----------------------------------------------|
| DF12#(3.0)-*DP-0.5V | 3.0                                                | —                                             |
| DF12#(3.5)-*DP-0.5V | —                                                  | 3.5                                           |
| DF12#(4.0)-*DP-0.5V | —                                                  | 4.0                                           |
| DF12#(5.0)-*DP-0.5V | —                                                  | 5.0                                           |

Note 1 : The (\*\*) after DF12# indicates the stacking height.

Note 2 : The stacking height does not include the soldering paste thickness.

### [Stacking Height Variations]

| Stacking Height |        | 3.0mm | 3.5mm | 4.0mm | 5.0mm |
|-----------------|--------|-------|-------|-------|-------|
| No. of Pos.     | 10pos. | ✓     | —     | —     | —     |
|                 | 14pos. | ✓     | —     | —     | —     |
|                 | 20pos. | ✓     | ✓     | ✓     | ✓     |
|                 | 30pos. | ✓     | ✓     | ✓     | ✓     |
|                 | 32pos. | ✓     | —     | ✓     | —     |
|                 | 36pos. | ✓     | ✓     | ✓     | ✓     |
|                 | 40pos. | ✓     | ✓     | ✓     | ✓     |
|                 | 50pos. | ✓     | ✓     | ✓     | ✓     |
|                 | 60pos. | ✓     | ✓     | ✓     | ✓     |
|                 | 80pos. | ✓     | —     | —     | —     |

### 2. Pick & Place Mounting

The connector has the vacuum pick-up area to enable automatic mounting with the embossed tape packaging. (Fig.1)

### 3. Solder Tabs on the Soldering Portion

In consideration of mounting on FPC, solder tabs are provided on the product in order to prevent solder peeling.

### 4. 5Gbps Transmission Speed

## Product Specifications

|         |                      |                                              |                                                 |
|---------|----------------------|----------------------------------------------|-------------------------------------------------|
| Ratings | Rated Current 0.3A   | Operating Temperature -55 to +125°C (Note 1) | Storage Temperature Range -10 to +60°C (Note 2) |
|         | Rated Voltage 50V AC | Operating Humidity Range 40 to 80%           | Storage Humidity Range 40 to 70% (Note 2)       |

| Items                           | Specifications                                                   | Conditions                                                                                   |
|---------------------------------|------------------------------------------------------------------|----------------------------------------------------------------------------------------------|
| 1. Insulation Resistance        | 500MΩ min.                                                       | 100V DC                                                                                      |
| 2. Withstanding Voltage         | No flashover or insulation breakdown.                            | 150V AC per min.                                                                             |
| 3. Contact Resistance           | 50mΩ max.                                                        | 20mV AC or less 1kHz, 1mA.                                                                   |
| 4. Vibration                    | No electrical discontinuity of 1μs or more                       | Frequency : 10 to 55 Hz, single amplitude of 0.75mm, 2 hours in each of the 3 directions.    |
| 5. Humidity (Steady State)      | Contact resistance : 50mΩ max. Insulation resistance : 500MΩ min | 96 hours at temperature of 40±2°C and humidity of 90% to 95%                                 |
| 6. Temperature Cycle            | Contact resistance : 50mΩ max. Insulation resistance : 500MΩ min | (-65°C : 30 minutes 5 to 35°C : 3 minutes 125°C : 30 minutes 5 to 35°C : 3 minutes) 5 cycles |
| 7. Mating Durability            | Contact resistance : 50mΩ max.                                   | 50 cycles                                                                                    |
| 8. Resistance to Soldering Heat | No deformation of components affecting performance.              | SMT Type Reflow : At the recommended temperature profile                                     |
|                                 |                                                                  | Manual soldering : 350°C for 3 seconds                                                       |

Note 1 : Includes temperature rise due to current flow. (105°C in automotive vibration environment)

Note 2 : 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.

## Materials / Finish

| Product           | Part       | Material        | Finish      | Remarks |
|-------------------|------------|-----------------|-------------|---------|
| Receptacle/Header | Insulator  | Polyamide       | Black       | UL94V-0 |
|                   | Contact    | Phosphor Copper | Gold Plated | —       |
|                   | Solder Tab | 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.

### Receptacle

**DF12 # (※※) - \* DS - 0.5 V (※※)**

① ② ③ ④ ⑤ ⑥ ⑦ ⑧

|                                                                                                                  |            |                                                           |            |                                     |   |    |   |                                                |  |                                                                       |  |
|------------------------------------------------------------------------------------------------------------------|------------|-----------------------------------------------------------|------------|-------------------------------------|---|----|---|------------------------------------------------|--|-----------------------------------------------------------------------|--|
| ① Series Name : DF12                                                                                             |            | ③ Stacking Height<br>3.0 : 3.0mm<br>Blank : 3.5 to 5.0mm  |            | ⑥ Contact Pitch : 0.5mm             |   |    |   |                                                |  |                                                                       |  |
| ② Type                                                                                                           |            | ④ No. of Pos. : 10, 14, 20, 30, 32, 36, 40,<br>50, 60, 80 |            | ⑦ Contact Style<br>V : Straight SMT |   |    |   |                                                |  |                                                                       |  |
| <table><tr><td></td><td>Solder Tab</td></tr><tr><td>NB</td><td>✓</td></tr><tr><td>NC</td><td>×</td></tr></table> |            |                                                           | Solder Tab | NB                                  | ✓ | NC | × | ⑤ Connector Type<br>DS : Double-row Receptacle |  | ⑧ Packaging Type<br>(51) : Embossed Tape Packaging<br>(1,000pcs/reel) |  |
|                                                                                                                  | Solder Tab |                                                           |            |                                     |   |    |   |                                                |  |                                                                       |  |
| NB                                                                                                               | ✓          |                                                           |            |                                     |   |    |   |                                                |  |                                                                       |  |
| NC                                                                                                               | ×          |                                                           |            |                                     |   |    |   |                                                |  |                                                                       |  |

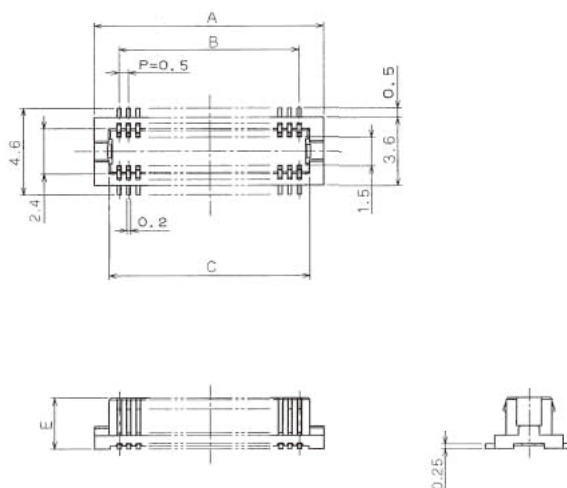
### Header

**DF12 # (※※) - \* DP - 0.5 V (※※)**

① ② ③ ④ ⑤ ⑥ ⑦ ⑧

| ① Series Name : DF12                                                                                             |                 | <div>③ Stacking Height</div> <table><tr><th>Indication</th><th>Stacking Height</th></tr><tr><td>3.0</td><td>3.0mm</td></tr><tr><td>3.5</td><td>3.5mm</td></tr><tr><td>4.0</td><td>4.0mm</td></tr><tr><td>5.0</td><td>5.0mm</td></tr></table> | Indication | Stacking Height | 3.0 | 3.0mm | 3.5 | 3.5mm                               | 4.0 | 4.0mm | 5.0 | 5.0mm | ⑤ Connector Type<br>DP : Double-row Pin Header |  |
|------------------------------------------------------------------------------------------------------------------|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-----------------|-----|-------|-----|-------------------------------------|-----|-------|-----|-------|------------------------------------------------|--|
| Indication                                                                                                       | Stacking Height |                                                                                                                                                                                                                                              |            |                 |     |       |     |                                     |     |       |     |       |                                                |  |
| 3.0                                                                                                              | 3.0mm           |                                                                                                                                                                                                                                              |            |                 |     |       |     |                                     |     |       |     |       |                                                |  |
| 3.5                                                                                                              | 3.5mm           |                                                                                                                                                                                                                                              |            |                 |     |       |     |                                     |     |       |     |       |                                                |  |
| 4.0                                                                                                              | 4.0mm           |                                                                                                                                                                                                                                              |            |                 |     |       |     |                                     |     |       |     |       |                                                |  |
| 5.0                                                                                                              | 5.0mm           |                                                                                                                                                                                                                                              |            |                 |     |       |     |                                     |     |       |     |       |                                                |  |
| ② Type                                                                                                           |                 | ⑥ Contact Pitch : 0.5mm                                                                                                                                                                                                                      |            |                 |     |       |     |                                     |     |       |     |       |                                                |  |
| <table><tr><td></td><td>Solder Tab</td></tr><tr><td>NB</td><td>✓</td></tr><tr><td>NC</td><td>×</td></tr></table> |                 |                                                                                                                                                                                                                                              | Solder Tab | NB              | ✓   | NC    | ×   | ⑦ Contact Style<br>V : Straight SMT |     |       |     |       |                                                |  |
|                                                                                                                  | Solder Tab      |                                                                                                                                                                                                                                              |            |                 |     |       |     |                                     |     |       |     |       |                                                |  |
| NB                                                                                                               | ✓               |                                                                                                                                                                                                                                              |            |                 |     |       |     |                                     |     |       |     |       |                                                |  |
| NC                                                                                                               | ×               |                                                                                                                                                                                                                                              |            |                 |     |       |     |                                     |     |       |     |       |                                                |  |
|                                                                                                                  |                 | ⑧ Packaging Type<br>(51) : Embossed Tape Packaging<br>(1,000pcs/reel)                                                                                                                                                                        |            |                 |     |       |     |                                     |     |       |     |       |                                                |  |
|                                                                                                                  |                 | ④ No. of Pos. : 10, 14, 20, 30, 32, 36, 40, 50, 60, 80                                                                                                                                                                                       |            |                 |     |       |     |                                     |     |       |     |       |                                                |  |

## Receptacle Without Solder Tab



### Stacking Height : 3mm Product

Unit : mm

| Part No.                  | HRS No.       | No. of Pos. | A    | B    | C    | E   | Remarks            | RoHS |
|---------------------------|---------------|-------------|------|------|------|-----|--------------------|------|
| DF12NC(3.0)-10DS-0.5V(51) | 537-0191-0 51 | 10          | 4.6  | 2.0  | 3.1  | 2.2 | Without Solder Tab | YES  |
| DF12NC(3.0)-14DS-0.5V(51) | 537-0192-0 51 | 14          | 5.6  | 3.0  | 4.1  |     |                    |      |
| DF12NC(3.0)-20DS-0.5V(51) | 537-0193-0 51 | 20          | 7.1  | 4.5  | 5.6  |     |                    |      |
| DF12NC(3.0)-30DS-0.5V(51) | 537-0194-0 51 | 30          | 9.6  | 7.0  | 8.1  |     |                    |      |
| DF12NC(3.0)-32DS-0.5V(51) | 537-0195-0 51 | 32          | 10.1 | 7.5  | 8.6  |     |                    |      |
| DF12NC(3.0)-36DS-0.5V(51) | 537-0196-0 51 | 36          | 11.1 | 8.5  | 9.6  |     |                    |      |
| DF12NC(3.0)-40DS-0.5V(51) | 537-0197-0 51 | 40          | 12.1 | 9.5  | 10.6 |     |                    |      |
| DF12NC(3.0)-50DS-0.5V(51) | 537-0198-0 51 | 50          | 14.6 | 12.0 | 13.1 |     |                    |      |
| DF12NC(3.0)-60DS-0.5V(51) | 537-0199-0 51 | 60          | 17.1 | 14.5 | 15.6 |     |                    |      |
| DF12NC(3.0)-80DS-0.5V(51) | 537-0285-0 51 | 80          | 22.1 | 19.5 | 20.6 |     |                    |      |

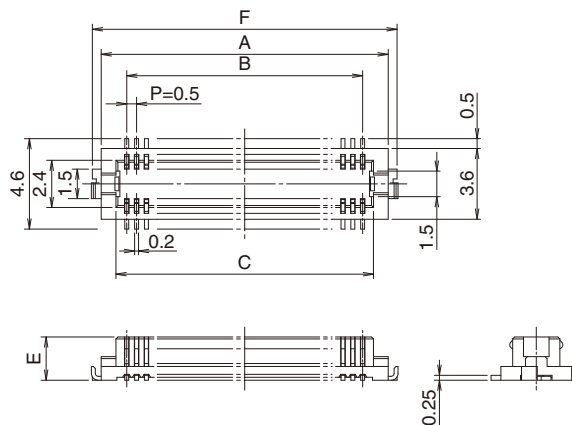
### Stacking Height : 3.5 to 5mm Product

Unit : mm

| Part No.             | HRS No.       | No. of Pos. | A    | B    | C    | E   | Remarks            | RoHS |
|----------------------|---------------|-------------|------|------|------|-----|--------------------|------|
| DF12NC-20DS-0.5V(51) | 537-0292-0 51 | 20          | 7.1  | 4.5  | 5.6  | 2.7 | Without Solder Tab | YES  |
| DF12NC-30DS-0.5V(51) | 537-0293-0 51 | 30          | 9.6  | 7.0  | 8.1  |     |                    |      |
| DF12NC-32DS-0.5V(51) | 537-0294-0 51 | 32          | 10.1 | 7.5  | 8.6  |     |                    |      |
| DF12NC-36DS-0.5V(51) | 537-0295-0 51 | 36          | 11.1 | 8.5  | 9.6  |     |                    |      |
| DF12NC-40DS-0.5V(51) | 537-0296-0 51 | 40          | 12.1 | 9.5  | 10.6 |     |                    |      |
| DF12NC-50DS-0.5V(51) | 537-0297-0 51 | 50          | 14.6 | 12.0 | 13.1 |     |                    |      |
| DF12NC-60DS-0.5V(51) | 537-0298-0 51 | 60          | 17.1 | 14.5 | 15.6 |     |                    |      |

Note : Please order the embossed tape packaging product per reel. (1,000pcs/reel)

## Receptacle With Solder Tab



### ● Stacking Height : 3mm Product

Unit : mm

| Part No.                  | HRS No.       | No. of Pos. | A    | B    | C    | E   | F    | Remarks         | RoHS |
|---------------------------|---------------|-------------|------|------|------|-----|------|-----------------|------|
| DF12NB(3.0)-10DS-0.5V(51) | 537-0097-0 51 | 10          | 4.6  | 2.0  | 3.1  | 2.2 | 5.6  | With Solder Tab | YES  |
| DF12NB(3.0)-14DS-0.5V(51) | 537-0098-0 51 | 14          | 5.6  | 3.0  | 4.1  |     | 6.6  |                 |      |
| DF12NB(3.0)-20DS-0.5V(51) | 537-0099-0 51 | 20          | 7.1  | 4.5  | 5.6  |     | 8.1  |                 |      |
| DF12NB(3.0)-30DS-0.5V(51) | 537-0185-0 51 | 30          | 9.6  | 7.0  | 8.1  |     | 10.6 |                 |      |
| DF12NB(3.0)-32DS-0.5V(51) | 537-0186-0 51 | 32          | 10.1 | 7.5  | 8.6  |     | 11.1 |                 |      |
| DF12NB(3.0)-36DS-0.5V(51) | 537-0187-0 51 | 36          | 11.1 | 8.5  | 9.6  |     | 12.1 |                 |      |
| DF12NB(3.0)-40DS-0.5V(51) | 537-0188-0 51 | 40          | 12.1 | 9.5  | 10.6 |     | 13.1 |                 |      |
| DF12NB(3.0)-50DS-0.5V(51) | 537-0189-0 51 | 50          | 14.6 | 12.0 | 13.1 |     | 15.6 |                 |      |
| DF12NB(3.0)-60DS-0.5V(51) | 537-0190-0 51 | 60          | 17.1 | 14.5 | 15.6 |     | 18.1 |                 |      |
| DF12NB(3.0)-80DS-0.5V(51) | 537-0095-0 51 | 80          | 22.1 | 19.5 | 20.6 |     | 23.1 |                 |      |

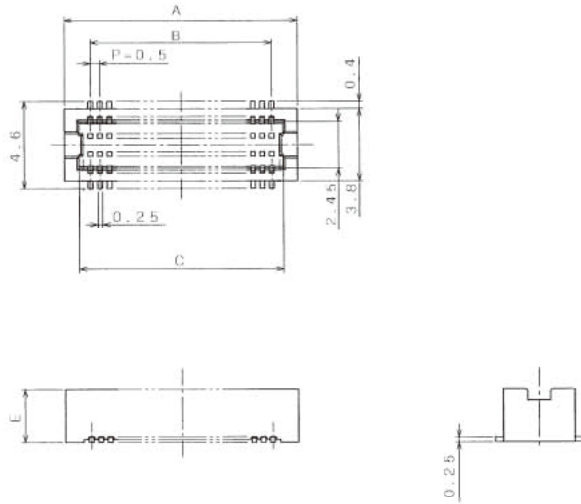
### ● Stacking Height : 3.5 to 5mm Product

Unit : mm

| Part No.             | HRS No.       | No. of Pos. | A    | B    | C    | E   | F    | Remarks         | RoHS |
|----------------------|---------------|-------------|------|------|------|-----|------|-----------------|------|
| DF12NB-20DS-0.5V(51) | 537-0286-0 51 | 20          | 7.1  | 4.5  | 5.6  | 2.7 | 8.1  | With Solder Tab | YES  |
| DF12NB-30DS-0.5V(51) | 537-0287-0 51 | 30          | 9.6  | 7.0  | 8.1  |     | 10.6 |                 |      |
| DF12NB-32DS-0.5V(51) | 537-0288-0 51 | 32          | 10.1 | 7.5  | 8.6  |     | 11.1 |                 |      |
| DF12NB-36DS-0.5V(51) | 537-0289-0 51 | 36          | 11.1 | 8.5  | 9.6  |     | 12.1 |                 |      |
| DF12NB-40DS-0.5V(51) | 537-0290-0 51 | 40          | 12.1 | 9.5  | 10.6 |     | 13.1 |                 |      |
| DF12NB-50DS-0.5V(51) | 537-0291-0 51 | 50          | 14.6 | 12.0 | 13.1 |     | 15.6 |                 |      |
| DF12NB-60DS-0.5V(51) | 537-0096-0 51 | 60          | 17.1 | 14.5 | 15.6 |     | 18.1 |                 |      |

Note : Please order the embossed tape packaging product per reel. (1,000pcs/reel)

## Header Without Solder Tab



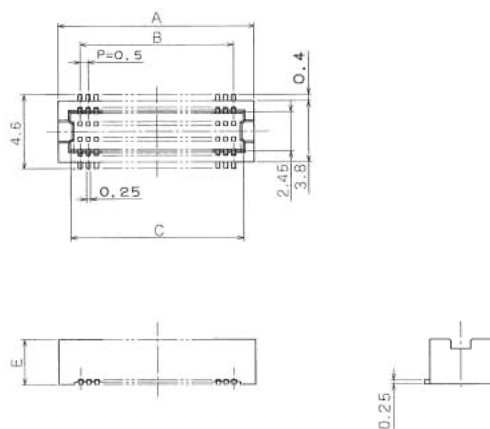
### Stacking Height : 3mm Product

Unit : mm

| Part No.                  | HRS No.       | No. of Pos. | A    | B    | C    | E   | Remarks            | RoHS |
|---------------------------|---------------|-------------|------|------|------|-----|--------------------|------|
| DF12NC(3.0)-10DP-0.5V(51) | 537-0396-0 51 | 10          | 4.7  | 2.0  | 3.2  | 2.3 | Without Solder Tab | YES  |
| DF12NC(3.0)-14DP-0.5V(51) | 537-0397-0 51 | 14          | 5.7  | 3.0  | 4.2  |     |                    |      |
| DF12NC(3.0)-20DP-0.5V(51) | 537-0398-0 51 | 20          | 7.2  | 4.5  | 5.7  |     |                    |      |
| DF12NC(3.0)-30DP-0.5V(51) | 537-0399-0 51 | 30          | 9.7  | 7.0  | 8.2  |     |                    |      |
| DF12NC(3.0)-32DP-0.5V(51) | 537-0487-0 51 | 32          | 10.2 | 7.5  | 8.7  |     |                    |      |
| DF12NC(3.0)-36DP-0.5V(51) | 537-0488-0 51 | 36          | 11.2 | 8.5  | 9.7  |     |                    |      |
| DF12NC(3.0)-40DP-0.5V(51) | 537-0489-0 51 | 40          | 12.2 | 9.5  | 10.7 |     |                    |      |
| DF12NC(3.0)-50DP-0.5V(51) | 537-0490-0 51 | 50          | 14.7 | 12.0 | 13.2 |     |                    |      |
| DF12NC(3.0)-60DP-0.5V(51) | 537-0491-0 51 | 60          | 17.2 | 14.5 | 15.7 |     |                    |      |
| DF12NC(3.0)-80DP-0.5V(51) | 537-0492-0 51 | 80          | 22.2 | 19.5 | 20.7 |     |                    |      |

Note : Please order the embossed tape packaging product per reel. (1,000pcs/reel)

## Header Without Solder Tab



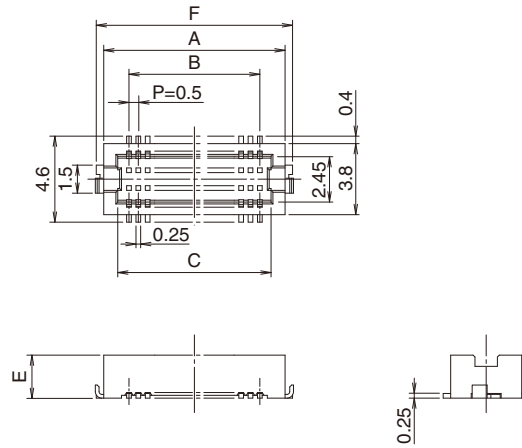
### Stacking Height : 3.5 to 5mm Product

Unit : mm

| Part No.                  | HRS No.       | No. of Pos. | A    | B    | C    | E   | Remarks               | RoHS |
|---------------------------|---------------|-------------|------|------|------|-----|-----------------------|------|
| DF12NC(3.5)-20DP-0.5V(51) | 537-0499-0 51 | 20          | 7.2  | 4.5  | 5.7  | 2.8 | Without<br>Solder Tab | YES  |
| DF12NC(3.5)-30DP-0.5V(51) | 537-0587-0 51 | 30          | 9.7  | 7.0  | 8.2  |     |                       |      |
| DF12NC(3.5)-36DP-0.5V(51) | 537-0588-0 51 | 36          | 11.2 | 8.5  | 9.7  |     |                       |      |
| DF12NC(3.5)-40DP-0.5V(51) | 537-0589-0 51 | 40          | 12.2 | 9.5  | 10.7 |     |                       |      |
| DF12NC(3.5)-50DP-0.5V(51) | 537-0590-0 51 | 50          | 14.7 | 12.0 | 13.2 |     |                       |      |
| DF12NC(3.5)-60DP-0.5V(51) | 537-0591-0 51 | 60          | 17.2 | 14.5 | 15.7 |     |                       |      |
| DF12NC(4.0)-20DP-0.5V(51) | 537-0599-0 51 | 20          | 7.2  | 4.5  | 5.7  | 3.3 |                       |      |
| DF12NC(4.0)-30DP-0.5V(51) | 537-0699-0 51 | 30          | 9.7  | 7.0  | 8.2  |     |                       |      |
| DF12NC(4.0)-32DP-0.5V(51) | 537-0872-0 51 | 32          | 10.2 | 7.5  | 8.7  |     |                       |      |
| DF12NC(4.0)-36DP-0.5V(51) | 537-0873-0 51 | 36          | 11.2 | 8.5  | 9.7  |     |                       |      |
| DF12NC(4.0)-40DP-0.5V(51) | 537-0874-0 51 | 40          | 12.2 | 9.5  | 10.7 |     |                       |      |
| DF12NC(4.0)-50DP-0.5V(51) | 537-0875-0 51 | 50          | 14.7 | 12.0 | 13.2 |     |                       |      |
| DF12NC(4.0)-60DP-0.5V(51) | 537-0876-0 51 | 60          | 17.2 | 14.5 | 15.7 | 4.3 |                       |      |
| DF12NC(5.0)-20DP-0.5V(51) | 537-0883-0 51 | 20          | 7.2  | 4.5  | 5.7  |     |                       |      |
| DF12NC(5.0)-30DP-0.5V(51) | 537-0884-0 51 | 30          | 9.7  | 7.0  | 8.2  |     |                       |      |
| DF12NC(5.0)-36DP-0.5V(51) | 537-0885-0 51 | 36          | 11.2 | 8.5  | 9.7  |     |                       |      |
| DF12NC(5.0)-40DP-0.5V(51) | 537-0886-0 51 | 40          | 12.2 | 9.5  | 10.7 |     |                       |      |
| DF12NC(5.0)-50DP-0.5V(51) | 537-0887-0 51 | 50          | 14.7 | 12.0 | 13.2 |     |                       |      |
| DF12NC(5.0)-60DP-0.5V(51) | 537-0888-0 51 | 60          | 17.2 | 14.5 | 15.7 |     |                       |      |

Note : Please order the embossed tape packaging product per reel. (1,000pcs/reel)

## Header With Solder Tab



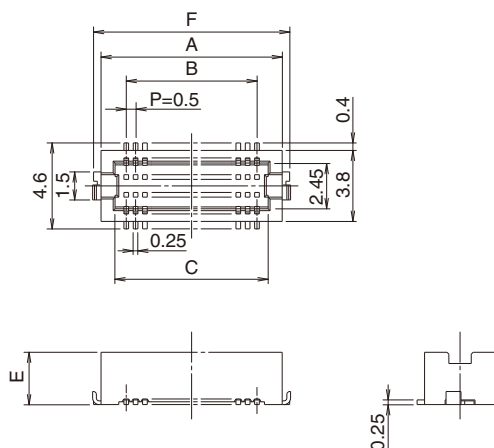
### Stacking Height : 3mm Product

Unit : mm

| Part No.                  | HRS No.       | No. of Pos. | A    | B    | C    | E   | F    | Remarks         | RoHS |
|---------------------------|---------------|-------------|------|------|------|-----|------|-----------------|------|
| DF12NB(3.0)-10DP-0.5V(51) | 537-0299-0 51 | 10          | 4.7  | 2.0  | 3.2  | 2.3 | 5.6  | With Solder Tab | YES  |
| DF12NB(3.0)-14DP-0.5V(51) | 537-0387-0 51 | 14          | 5.7  | 3.0  | 4.2  |     | 6.6  |                 |      |
| DF12NB(3.0)-20DP-0.5V(51) | 537-0388-0 51 | 20          | 7.2  | 4.5  | 5.7  |     | 8.1  |                 |      |
| DF12NB(3.0)-30DP-0.5V(51) | 537-0389-0 51 | 30          | 9.7  | 7.0  | 8.2  |     | 10.6 |                 |      |
| DF12NB(3.0)-32DP-0.5V(51) | 537-0390-0 51 | 32          | 10.2 | 7.5  | 8.7  |     | 11.1 |                 |      |
| DF12NB(3.0)-36DP-0.5V(51) | 537-0391-0 51 | 36          | 11.2 | 8.5  | 9.7  |     | 12.1 |                 |      |
| DF12NB(3.0)-40DP-0.5V(51) | 537-0392-0 51 | 40          | 12.2 | 9.5  | 10.7 |     | 13.1 |                 |      |
| DF12NB(3.0)-50DP-0.5V(51) | 537-0393-0 51 | 50          | 14.7 | 12.0 | 13.2 |     | 15.6 |                 |      |
| DF12NB(3.0)-60DP-0.5V(51) | 537-0394-0 51 | 60          | 17.2 | 14.5 | 15.7 |     | 18.1 |                 |      |
| DF12NB(3.0)-80DP-0.5V(51) | 537-0395-0 51 | 80          | 22.2 | 19.5 | 20.7 |     | 23.1 |                 |      |

Note : Please order the embossed tape packaging product per reel. (1,000pcs/reel)

## Header With Solder Tab



### Stacking Height : 3.5 to 5mm Product

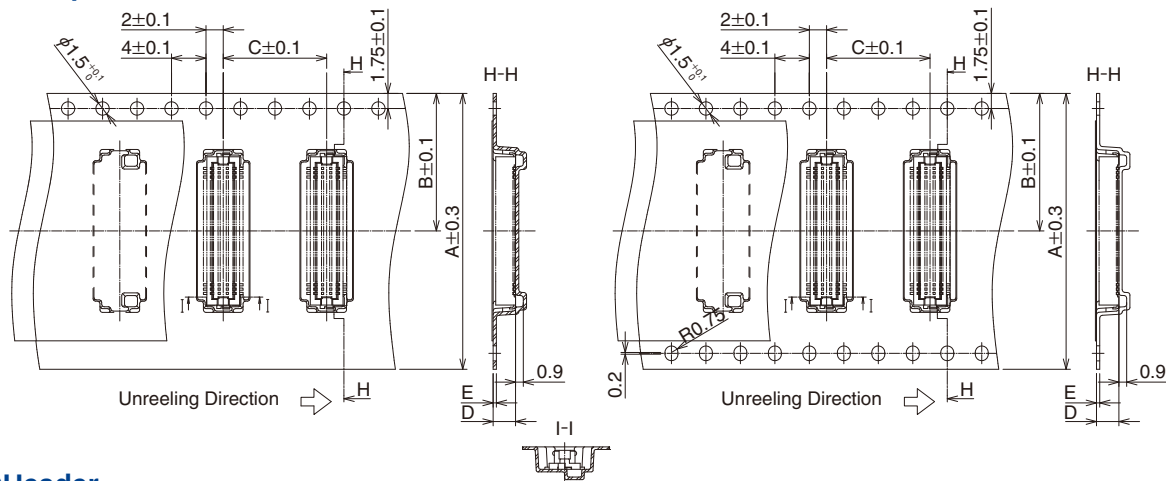
Unit : mm

| Part No.                  | HRS No.       | No. of Pos. | A    | B    | C    | E   | F    | Remarks         | RoHS |
|---------------------------|---------------|-------------|------|------|------|-----|------|-----------------|------|
| DF12NB(3.5)-20DP-0.5V(51) | 537-0493-0 51 | 20          | 7.2  | 4.5  | 5.7  | 2.8 | 8.1  | With Solder Tab | YES  |
| DF12NB(3.5)-30DP-0.5V(51) | 537-0494-0 51 | 30          | 9.7  | 7.0  | 8.2  |     | 10.6 |                 |      |
| DF12NB(3.5)-36DP-0.5V(51) | 537-0495-0 51 | 36          | 11.2 | 8.5  | 9.7  |     | 12.1 |                 |      |
| DF12NB(3.5)-40DP-0.5V(51) | 537-0496-0 51 | 40          | 12.2 | 9.5  | 10.7 |     | 13.1 |                 |      |
| DF12NB(3.5)-50DP-0.5V(51) | 537-0497-0 51 | 50          | 14.7 | 12.0 | 13.2 |     | 15.6 |                 |      |
| DF12NB(3.5)-60DP-0.5V(51) | 537-0498-0 51 | 60          | 17.2 | 14.5 | 15.7 |     | 18.1 |                 |      |
| DF12NB(4.0)-20DP-0.5V(51) | 537-0592-0 51 | 20          | 7.2  | 4.5  | 5.7  | 3.3 | 8.1  |                 |      |
| DF12NB(4.0)-30DP-0.5V(51) | 537-0593-0 51 | 30          | 9.7  | 7.0  | 8.2  |     | 10.6 |                 |      |
| DF12NB(4.0)-32DP-0.5V(51) | 537-0594-0 51 | 32          | 10.2 | 7.5  | 8.7  |     | 11.1 |                 |      |
| DF12NB(4.0)-36DP-0.5V(51) | 537-0595-0 51 | 36          | 11.2 | 8.5  | 9.7  |     | 12.1 |                 |      |
| DF12NB(4.0)-40DP-0.5V(51) | 537-0596-0 51 | 40          | 12.2 | 9.5  | 10.7 |     | 13.1 |                 |      |
| DF12NB(4.0)-50DP-0.5V(51) | 537-0597-0 51 | 50          | 14.7 | 12.0 | 13.2 |     | 15.6 |                 |      |
| DF12NB(4.0)-60DP-0.5V(51) | 537-0598-0 51 | 60          | 17.2 | 14.5 | 15.7 |     | 18.1 |                 |      |
| DF12NB(5.0)-20DP-0.5V(51) | 537-0877-0 51 | 20          | 7.2  | 4.5  | 5.7  | 4.3 | 8.1  |                 |      |
| DF12NB(5.0)-30DP-0.5V(51) | 537-0878-0 51 | 30          | 9.7  | 7.0  | 8.2  |     | 10.6 |                 |      |
| DF12NB(5.0)-36DP-0.5V(51) | 537-0879-0 51 | 36          | 11.2 | 8.5  | 9.7  |     | 12.1 |                 |      |
| DF12NB(5.0)-40DP-0.5V(51) | 537-0880-0 51 | 40          | 12.2 | 9.5  | 10.7 |     | 13.1 |                 |      |
| DF12NB(5.0)-50DP-0.5V(51) | 537-0881-0 51 | 50          | 14.7 | 12.0 | 13.2 |     | 15.6 |                 |      |
| DF12NB(5.0)-60DP-0.5V(51) | 537-0882-0 51 | 60          | 17.2 | 14.5 | 15.7 |     | 18.1 |                 |      |

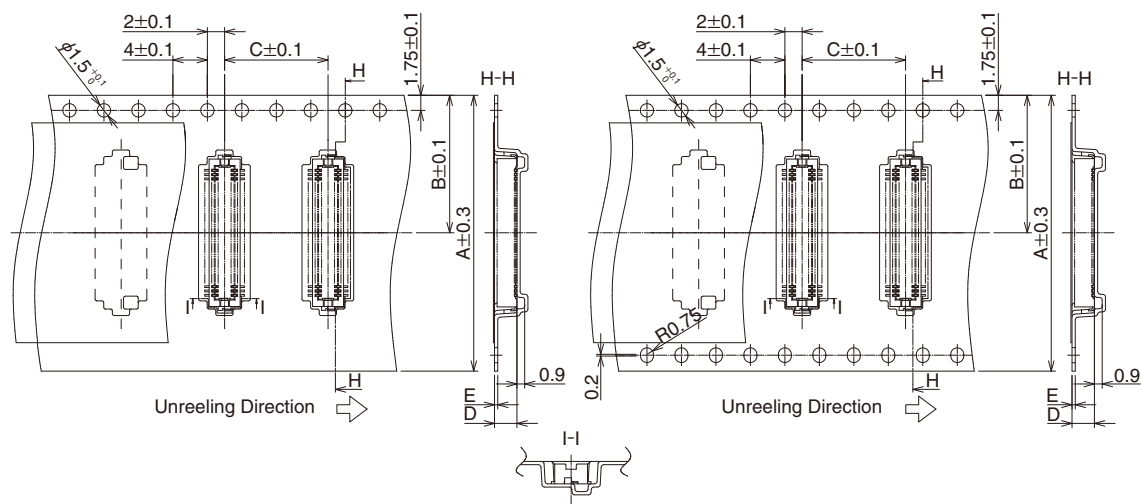
Note : Please order the embossed tape packaging product per reel. (1,000pcs/reel)

◆ Embossed Carrier Tape Dimensions

● Receptacle

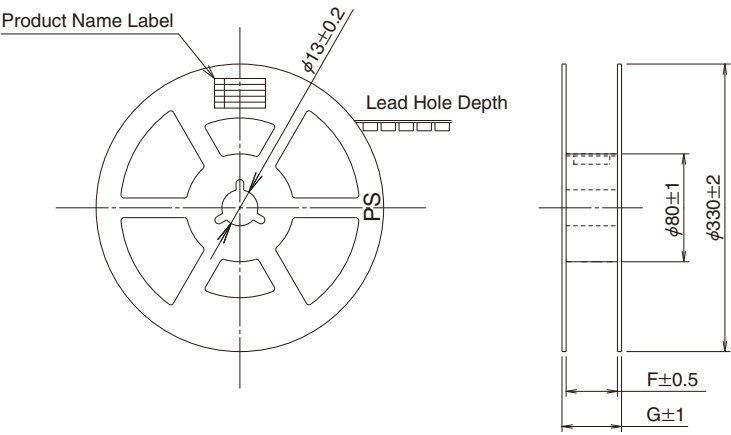


● Header



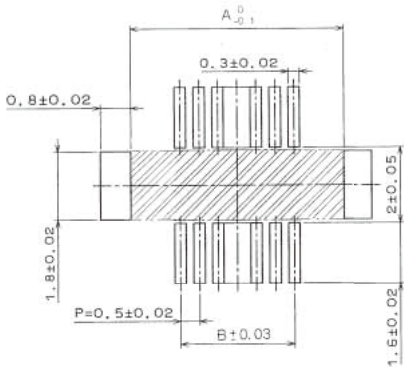
| Connector            | A                    | B                    | C  | D    | E    | F                    | G                    | Connector            | A    | B                    | C    | D                    | E                    | F    | G    |                      |                      |                      |                      |      |      |                      |                      |                      |                      |                      |      |      |      |      |      |
|----------------------|----------------------|----------------------|----|------|------|----------------------|----------------------|----------------------|------|----------------------|------|----------------------|----------------------|------|------|----------------------|----------------------|----------------------|----------------------|------|------|----------------------|----------------------|----------------------|----------------------|----------------------|------|------|------|------|------|
| DF12#(3.0)-10DS-0.5V | 16                   | 7.5                  | 12 | 2.6  | 0.30 | 17.5                 | 21.5                 | DF12#(3.5)-20DP-0.5V | 16   | 7.5                  | 12   | 3.1                  | 0.38                 | 17.5 | 21.5 |                      |                      |                      |                      |      |      |                      |                      |                      |                      |                      |      |      |      |      |      |
| DF12#(3.0)-14DS-0.5V |                      |                      |    |      | 24   |                      |                      | 11.5                 | 0.38 | 25.5                 |      |                      |                      |      |      | 29.5                 | DF12#(3.5)-30DP-0.5V | 24                   | 11.5                 | 8    | 12   | 0.30                 | 25.5                 | 29.5                 |                      |                      |      |      |      |      |      |
| DF12#(3.0)-20DS-0.5V |                      |                      |    |      |      |                      |                      |                      |      |                      |      |                      |                      |      |      |                      | DF12#(3.5)-36DP-0.5V |                      |                      |      |      |                      |                      |                      | 32                   | 14.2                 | 16   | 7.5  | 12   | 0.30 | 33.5 |
| DF12#(3.0)-30DS-0.5V | DF12#(3.5)-40DP-0.5V | DF12#(3.5)-50DP-0.5V |    |      |      | DF12#(4.0)-20DP-0.5V | DF12#(4.0)-30DP-0.5V |                      |      |                      | 24   | 11.5                 | 8                    | 12   | 0.30 |                      | 25.5                 |                      |                      |      |      |                      |                      |                      |                      |                      |      |      |      |      |      |
| DF12#(3.0)-32DS-0.5V | 32                   |                      |    |      | 14.2 |                      |                      | 16                   | 7.5  | 12                   |      |                      |                      |      |      | 0.30                 |                      | 33.5                 | 37.5                 |      |      |                      |                      |                      |                      |                      |      |      |      |      |      |
| DF12#(3.0)-36DS-0.5V |                      |                      |    |      |      |                      |                      |                      |      |                      |      |                      |                      |      |      |                      |                      |                      |                      | 44   | 20.2 | 33.5                 | 37.5                 | DF12#(4.0)-32DP-0.5V | 24                   | 11.5                 | 8    | 12   | 0.30 | 25.5 | 29.5 |
| DF12#(3.0)-40DS-0.5V |                      | 32                   |    |      |      | 14.2                 | 45.5                 |                      |      |                      | 49.5 | DF12#(4.0)-36DP-0.5V | 32                   | 14.2 | 12   |                      | 3.6                  |                      |                      |      |      |                      |                      |                      |                      |                      |      |      |      |      |      |
| DF12#(3.0)-50DS-0.5V | 44                   |                      |    |      | 20.2 |                      |                      | 0.30                 | 17.5 | 21.5                 |      |                      |                      |      |      | DF12#(4.0)-40DP-0.5V |                      | DF12#(4.0)-50DP-0.5V | DF12#(4.0)-60DP-0.5V |      |      |                      |                      |                      |                      |                      |      |      |      |      |      |
| DF12#(3.0)-60DS-0.5V |                      |                      |    |      |      |                      |                      |                      |      |                      |      |                      |                      |      |      |                      |                      |                      |                      | 16   | 7.5  | 0.30                 | 17.5                 | 21.5                 | DF12#(4.0)-50DP-0.5V | DF12#(4.0)-60DP-0.5V | 32   | 14.2 | 12   | 4.6  | 0.38 |
| DF12#(3.0)-80DS-0.5V |                      | 32                   |    |      |      | 14.2                 | 45.5                 |                      |      |                      | 49.5 | DF12#(5.0)-20DP-0.5V | 16                   | 7.5  | 24   |                      | 11.5                 |                      |                      |      |      |                      |                      |                      |                      |                      |      |      |      |      |      |
| DF12#(3.0)-10DP-0.5V | 44                   |                      |    |      | 20.2 |                      |                      | 0.30                 | 25.5 | 29.5                 |      |                      |                      |      |      | DF12#(5.0)-30DP-0.5V |                      | DF12#(5.0)-36DP-0.5V | DF12#(5.0)-40DP-0.5V |      |      |                      |                      |                      |                      |                      |      |      |      |      |      |
| DF12#(3.0)-14DP-0.5V |                      |                      |    |      |      |                      |                      |                      |      |                      |      |                      |                      |      |      |                      |                      |                      |                      | 16   | 7.5  | 0.38                 | 25.5                 | 29.5                 | DF12#(5.0)-40DP-0.5V | DF12#(5.0)-50DP-0.5V | 32   | 14.2 | 12   | 4.6  | 0.38 |
| DF12#(3.0)-20DP-0.5V |                      | 24                   |    |      |      | 11.5                 | 0.38                 |                      |      |                      | 25.5 | 29.5                 | DF12#(5.0)-50DP-0.5V | 32   | 14.2 |                      | 12                   |                      |                      |      |      |                      |                      |                      |                      |                      |      |      |      |      |      |
| DF12#(3.0)-30DP-0.5V | 32                   |                      |    |      | 14.2 |                      |                      | 45.5                 | 49.5 | DF12#(5.0)-60DP-0.5V |      |                      |                      |      |      | 32                   |                      | 14.2                 | 12                   |      |      |                      |                      |                      |                      |                      |      |      |      |      |      |
| DF12#(3.0)-32DP-0.5V |                      |                      |    |      |      |                      |                      |                      |      |                      |      |                      |                      |      |      |                      |                      |                      |                      | 44   | 20.2 | 0.30                 | 25.5                 | 29.5                 | DF12#(5.0)-60DP-0.5V | 32                   | 14.2 | 12   | 4.6  | 0.38 | 33.5 |
| DF12#(3.0)-36DP-0.5V |                      | 16                   |    |      |      | 7.5                  | 0.30                 |                      |      |                      | 25.5 | 29.5                 | DF12#(5.0)-60DP-0.5V | 32   | 14.2 |                      | 12                   |                      |                      |      |      |                      |                      |                      |                      |                      |      |      |      |      |      |
| DF12#(3.0)-40DP-0.5V | 24                   |                      |    |      | 11.5 |                      |                      | 0.38                 | 25.5 | 29.5                 |      |                      |                      |      |      | DF12#(5.0)-60DP-0.5V |                      | 32                   | 14.2                 |      |      |                      |                      |                      |                      |                      |      |      |      |      |      |
| DF12#(3.0)-50DP-0.5V |                      |                      |    |      |      |                      |                      |                      |      |                      |      |                      |                      |      |      |                      |                      |                      |                      | 32   | 14.2 | 45.5                 | 49.5                 | DF12#(5.0)-60DP-0.5V | 32                   | 14.2                 | 12   | 4.6  | 0.38 | 33.5 | 37.5 |
| DF12#(3.0)-60DP-0.5V |                      | 44                   |    |      |      | 20.2                 | 0.30                 |                      |      |                      | 25.5 | 29.5                 | DF12#(5.0)-60DP-0.5V | 32   | 14.2 |                      | 12                   |                      |                      |      |      |                      |                      |                      |                      |                      |      |      |      |      |      |
| DF12#(3.0)-80DP-0.5V | 16                   |                      |    |      | 7.5  |                      |                      | 0.30                 | 25.5 | 29.5                 |      |                      |                      |      |      | DF12#(5.0)-60DP-0.5V |                      | 32                   | 14.2                 |      |      |                      |                      |                      |                      |                      |      |      |      |      |      |
| DF12#-20DS-0.5V      |                      |                      | 24 | 11.5 |      |                      |                      |                      |      |                      |      |                      |                      |      |      |                      |                      |                      |                      | 0.30 | 25.5 | 29.5                 | DF12#(5.0)-60DP-0.5V | 32                   | 14.2                 | 12                   | 4.6  | 0.38 | 33.5 | 37.5 |      |
| DF12#-30DS-0.5V      |                      | 32                   |    |      |      | 14.2                 | 45.5                 |                      |      |                      | 49.5 | DF12#(5.0)-60DP-0.5V | 32                   | 14.2 | 12   |                      | 4.6                  |                      |                      |      |      |                      |                      |                      |                      |                      |      |      |      |      | 0.38 |
| DF12#-32DS-0.5V      | 44                   |                      |    |      | 20.2 |                      |                      | 0.30                 | 25.5 | 29.5                 |      |                      |                      |      |      | DF12#(5.0)-60DP-0.5V |                      | 32                   | 14.2                 |      |      |                      |                      |                      |                      |                      |      |      |      |      |      |
| DF12#-36DS-0.5V      |                      |                      | 16 | 7.5  |      |                      |                      |                      |      |                      |      |                      |                      |      |      |                      |                      |                      |                      | 0.30 | 25.5 | 29.5                 | DF12#(5.0)-60DP-0.5V | 32                   | 14.2                 | 12                   | 4.6  | 0.38 | 33.5 | 37.5 |      |
| DF12#-40DS-0.5V      |                      | 24                   |    |      |      | 11.5                 | 0.30                 |                      |      |                      | 25.5 | 29.5                 | DF12#(5.0)-60DP-0.5V | 32   | 14.2 |                      | 12                   |                      |                      |      |      |                      |                      |                      |                      |                      |      |      |      |      | 4.6  |
| DF12#-50DS-0.5V      | 32                   |                      |    |      | 14.2 |                      |                      | 45.5                 | 49.5 | DF12#(5.0)-60DP-0.5V |      |                      |                      |      |      | 32                   |                      | 14.2                 | 12                   |      |      |                      |                      |                      |                      |                      |      |      |      |      |      |
| DF12#-60DS-0.5V      |                      |                      | 44 | 20.2 |      |                      |                      |                      |      |                      |      |                      |                      |      |      |                      |                      |                      |                      | 0.30 | 25.5 | 29.5                 | DF12#(5.0)-60DP-0.5V | 32                   | 14.2                 | 12                   | 4.6  | 0.38 | 33.5 | 37.5 |      |
|                      |                      | 16                   |    |      |      | 7.5                  | 0.30                 |                      |      |                      | 25.5 | 29.5                 | DF12#(5.0)-60DP-0.5V | 32   | 14.2 |                      | 12                   |                      |                      |      |      |                      |                      |                      |                      |                      |      |      |      |      | 4.6  |
|                      | 24                   |                      |    |      | 11.5 |                      |                      | 0.30                 | 25.5 | 29.5                 |      |                      |                      |      |      | DF12#(5.0)-60DP-0.5V |                      | 32                   | 14.2                 |      |      |                      |                      |                      |                      |                      |      |      |      |      |      |
|                      |                      |                      | 32 | 14.2 |      |                      |                      |                      |      |                      |      |                      |                      |      |      |                      |                      |                      |                      | 45.5 | 49.5 | DF12#(5.0)-60DP-0.5V | 32                   | 14.2                 | 12                   | 4.6                  | 0.38 | 33.5 | 37.5 |      |      |
|                      |                      | 44                   |    |      |      | 20.2                 | 0.30                 |                      |      |                      | 25.5 | 29.5                 | DF12#(5.0)-60DP-0.5V | 32   | 14.2 |                      | 12                   |                      |                      |      |      |                      |                      |                      |                      |                      |      |      |      | 4.6  | 0.38 |
|                      | 16                   |                      |    |      | 7.5  |                      |                      | 0.30                 | 25.5 | 29.5                 |      |                      |                      |      |      | DF12#(5.0)-60DP-0.5V |                      | 32                   | 14.2                 |      |      |                      |                      |                      |                      |                      |      |      |      |      |      |
|                      |                      |                      | 24 | 11.5 |      |                      |                      |                      |      |                      |      |                      |                      |      |      |                      |                      |                      |                      | 0.30 | 25.5 | 29.5                 | DF12#(5.0)-60DP-0.5V | 32                   | 14.2                 | 12                   | 4.6  | 0.38 | 33.5 |      |      |
|                      |                      | 32                   |    |      |      | 14.2                 | 45.5                 |                      |      |                      | 49.5 | DF12#(5.0)-60DP-0.5V | 32                   | 14.2 | 12   |                      | 4.6                  |                      |                      |      |      |                      |                      |                      |                      |                      |      |      |      | 0.38 | 33.5 |
|                      | 44                   |                      |    |      | 20.2 |                      |                      | 0.30                 | 25.5 | 29.5                 |      |                      |                      |      |      | DF12#(5.0)-60DP-0.5V |                      | 32                   | 14.2                 |      |      |                      |                      |                      |                      |                      |      |      |      |      |      |
|                      |                      |                      | 16 | 7.5  |      |                      |                      |                      |      |                      |      |                      |                      |      |      |                      |                      |                      |                      | 0.30 | 25.5 | 29.5                 | DF12#(5.0)-60DP-0.5V | 32                   | 14.2                 | 12                   | 4.6  | 0.38 | 33.5 |      |      |
|                      |                      | 24                   |    |      |      | 11.5                 | 0.30                 |                      |      |                      | 25.5 | 29.5                 | DF12#(5.0)-60DP-0.5V | 32   | 14.2 |                      | 12                   |                      |                      |      |      |                      |                      |                      |                      |                      |      |      |      | 4.6  | 0.38 |
|                      | 32                   |                      |    |      | 14.2 |                      |                      | 45.5                 | 49.5 | DF12#(5.0)-60DP-0.5V |      |                      |                      |      |      | 32                   |                      | 14.2                 | 12                   |      |      |                      |                      |                      |                      |                      |      |      |      |      |      |
|                      |                      |                      | 44 | 20.2 |      |                      |                      |                      |      |                      |      |                      |                      |      |      |                      |                      |                      |                      | 0.30 | 25.5 | 29.5                 | DF12#(5.0)-60DP-0.5V | 32                   | 14.2                 | 12                   | 4.6  | 0.38 | 33.5 |      |      |
|                      |                      | 16                   |    |      |      | 7.5                  | 0.30                 |                      |      |                      | 25.5 | 29.5                 | DF12#(5.0)-60DP-0.5V | 32   | 14.2 |                      | 12                   |                      |                      |      |      |                      |                      |                      |                      |                      |      |      |      | 4.6  | 0.38 |
|                      | 24                   |                      |    |      | 11.5 |                      |                      | 0.30                 | 25.5 | 29.5                 |      |                      |                      |      |      | DF12#(5.0)-60DP-0.5V |                      | 32                   | 14.2                 |      |      |                      |                      |                      |                      |                      |      |      |      |      |      |
|                      |                      |                      | 32 | 14.2 |      |                      |                      |                      |      |                      |      |                      |                      |      |      |                      |                      |                      |                      | 45.5 | 49.5 | DF12#(5.0)-60DP-0.5V | 32                   | 14.2                 | 12                   | 4.6                  | 0.38 | 33.5 | 37.5 |      |      |
|                      |                      | 44                   |    |      |      | 20.2                 | 0.30                 |                      |      |                      | 25.5 | 29.5                 | DF12#(5.0)-60DP-0.5V | 32   | 14.2 |                      | 12                   |                      |                      |      |      |                      |                      |                      |                      |                      |      |      |      | 4.6  | 0.38 |
|                      | 16                   |                      |    |      | 7.5  |                      |                      | 0.30                 | 25.5 | 29.5                 |      |                      |                      |      |      | DF12#(5.0)-60DP-0.5V |                      | 32                   | 14.2                 |      |      |                      |                      |                      |                      |                      |      |      |      |      |      |
|                      |                      |                      | 24 | 11.5 |      |                      |                      |                      |      |                      |      |                      |                      |      |      |                      |                      |                      |                      | 0.30 | 25.5 | 29.5                 | DF12#(5.0)-60DP-0.5V | 32                   | 14.2                 | 12                   | 4.6  | 0.38 | 33.5 |      |      |
|                      |                      | 32                   |    |      |      | 14.2                 | 45.5                 |                      |      |                      | 49.5 | DF12#(5.0)-60DP-0.5V | 32                   | 14.2 | 12   |                      | 4.6                  |                      |                      |      |      |                      |                      |                      |                      |                      |      |      |      | 0.38 | 33.5 |
|                      | 44                   |                      |    |      | 20.2 |                      |                      | 0.30                 | 25.5 | 29.5                 |      |                      |                      |      |      | DF12#(5.0)-60DP-0.5V |                      | 32                   | 14.2                 |      |      |                      |                      |                      |                      |                      |      |      |      |      |      |
|                      |                      |                      | 16 | 7.5  |      |                      |                      |                      |      |                      |      |                      |                      |      |      |                      |                      |                      |                      | 0.30 | 25.5 | 29.5                 | DF12#(5.0)-60DP-0.5V | 32                   | 14.2                 | 12                   | 4.6  | 0.38 | 33.5 |      |      |
|                      |                      | 24                   |    |      |      | 11.5                 | 0.30                 |                      |      |                      | 25.5 | 29.5                 | DF12#(5.0)-60DP-0.5V | 32   | 14.2 |                      | 12                   |                      |                      |      |      |                      |                      |                      |                      |                      |      |      |      | 4.6  | 0.38 |
|                      | 32                   |                      |    |      | 14.2 |                      |                      | 45.5                 | 49.5 | DF12#(5.0)-60DP-0.5V |      |                      |                      |      |      | 32                   |                      | 14.2                 | 12                   |      |      |                      |                      |                      |                      |                      |      |      |      |      |      |
|                      |                      |                      | 44 | 20.2 |      |                      |                      |                      |      |                      |      |                      |                      |      |      |                      |                      |                      |                      | 0.30 | 25.5 | 29.5                 | DF12#(5.0)-60DP-0.5V | 32                   | 14.2                 | 12                   | 4.6  | 0.38 | 33.5 |      |      |
|                      |                      | 16                   |    |      |      | 7.5                  | 0.30                 |                      |      |                      | 25.5 | 29.5                 | DF12#(5.0)-60DP-0.5V | 32   | 14.2 |                      | 12                   |                      |                      |      |      |                      |                      |                      |                      |                      |      |      |      | 4.6  | 0.38 |
|                      | 24                   |                      |    |      | 11.5 |                      |                      | 0.30                 | 25.5 | 29.5                 |      |                      |                      |      |      | DF12#(5.0)-60DP-0.5V |                      | 32                   | 14.2                 |      |      |                      |                      |                      |                      |                      |      |      |      |      |      |
|                      |                      |                      | 32 | 14.2 |      |                      |                      |                      |      |                      |      |                      |                      |      |      |                      |                      |                      |                      | 45.5 | 49.5 | DF12#(5.0)-60DP-0.5V | 32                   | 14.2                 | 12                   | 4.6                  | 0.38 | 33.5 | 37.5 |      |      |
|                      |                      | 44                   |    |      |      | 20.2                 | 0.30                 |                      |      |                      | 25.5 | 29.5                 | DF12#(5.0)-60DP-0.5V | 32   | 14.2 |                      | 12                   |                      |                      |      |      |                      |                      |                      |                      |                      |      |      |      | 4.6  | 0.38 |
|                      | 16                   |                      |    |      | 7.5  |                      |                      | 0.30                 | 25.5 | 29.5                 |      |                      |                      |      |      | DF12#(5.0)-60DP-0.5V |                      | 32                   | 14.2                 |      |      |                      |                      |                      |                      |                      |      |      |      |      |      |
|                      |                      |                      | 24 | 11.5 |      |                      |                      |                      |      |                      |      |                      |                      |      |      |                      |                      |                      |                      | 0.30 | 25.5 | 29.5                 | DF12#(5.0)-60DP-0.5V | 32                   | 14.2                 | 12                   | 4.6  | 0.38 | 33.5 |      |      |
|                      |                      | 32                   |    |      |      | 14.2                 | 45.5                 |                      |      |                      | 49.5 | DF12#(5.0)-60DP-0.5V | 32                   | 14.2 | 12   |                      | 4.6                  |                      |                      |      |      |                      |                      |                      |                      |                      |      |      |      | 0.38 | 33.5 |
|                      | 44                   |                      |    |      | 20.2 |                      |                      | 0.30                 | 25.5 | 29.5                 |      |                      |                      |      |      | DF12#(5.0)-60DP-0.5V |                      | 32                   | 14.2                 |      |      |                      |                      |                      |                      |                      |      |      |      |      |      |
|                      |                      |                      | 16 | 7.5  |      |                      |                      |                      |      |                      |      |                      |                      |      |      |                      |                      |                      |                      | 0.30 | 25.5 | 29.5                 | DF12#(5.0)-60DP-0.5V | 32                   | 14.2                 | 12                   | 4.6  | 0.38 | 33.5 |      |      |
|                      |                      | 24                   |    |      |      | 11.5                 | 0.30                 |                      |      |                      | 25.5 | 29.5                 | DF12#(5.0)-60DP-0.5V | 32   | 14.2 |                      | 12                   |                      |                      |      |      |                      |                      |                      |                      |                      |      |      |      | 4.6  | 0.38 |
|                      | 32                   |                      |    |      | 14.2 |                      |                      | 45.5                 | 49.5 | DF12#(5.0)-60DP-0.5V |      |                      |                      |      |      | 32                   |                      | 14.2                 | 12                   |      |      |                      |                      |                      |                      |                      |      |      |      |      |      |
|                      |                      |                      | 44 | 20.2 |      |                      |                      |                      |      |                      |      |                      |                      |      |      |                      |                      |                      |                      | 0.30 | 25.5 | 29.5                 | DF12#(5.0)-60DP-0.5V | 32                   | 14.2                 | 12                   | 4.6  | 0.38 | 33.5 |      |      |
|                      |                      | 16                   |    |      |      | 7.5                  | 0.30                 |                      |      |                      | 25.5 | 29.5                 | DF12#(5.0)-60DP-0.5V | 32   | 14.2 |                      | 12                   |                      |                      |      |      |                      |                      |                      |                      |                      |      |      |      | 4.6  | 0.38 |
|                      | 24                   |                      |    |      | 11.5 |                      |                      | 0.30                 | 25.5 | 29.5                 |      |                      |                      |      |      | DF12#(5.0)-60DP-0.5V |                      | 32                   | 14.2                 |      |      |                      |                      |                      |                      |                      |      |      |      |      |      |
|                      |                      |                      | 32 | 14.2 |      |                      |                      |                      |      |                      |      |                      |                      |      |      |                      |                      |                      |                      | 45.5 | 49.5 | DF12#(5.0)-60DP-0.5V | 32                   | 14.2                 | 12                   | 4.6                  | 0.38 | 33.5 | 37.5 |      |      |
|                      |                      | 44                   |    |      |      | 20.2                 | 0.30                 |                      |      |                      | 25.5 | 29.5                 | DF12#(5.0)-60DP-0.5V | 32   | 14.2 |                      | 12                   |                      |                      |      |      |                      |                      |                      |                      |                      |      |      |      | 4.6  | 0.38 |
|                      | 16                   |                      |    |      | 7.5  |                      |                      | 0.30                 | 25.5 | 29.5                 |      |                      |                      |      |      | DF12#(5.0)-60DP-0.5V |                      | 32                   | 14.2                 |      |      |                      |                      |                      |                      |                      |      |      |      |      |      |
|                      |                      |                      | 24 | 11.5 |      |                      |                      |                      |      |                      |      |                      |                      |      |      |                      |                      |                      |                      | 0.30 | 25.5 | 29.5                 | DF12#(5.0)-60DP-0.5V | 32                   | 14.2                 | 12                   | 4.6  | 0.38 | 33.5 |      |      |
|                      |                      | 32                   |    |      |      | 14.2                 | 45.5                 |                      |      |                      | 49.5 | DF12#(5.0)-60DP-0.5V | 32                   | 14.2 | 12   |                      | 4.6                  |                      |                      |      |      |                      |                      |                      |                      |                      |      |      |      | 0.38 | 33.5 |
|                      | 44                   |                      |    |      | 20.2 |                      |                      | 0.30                 | 25.5 | 29.5                 |      |                      |                      |      |      | DF12#(5.0)-60DP-0.5V |                      | 32</                 |                      |      |      |                      |                      |                      |                      |                      |      |      |      |      |      |

●Reel Dimensions

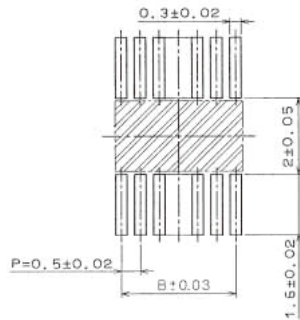


◆Recommended PCB mounting pattern

■DF12N with Solder Tab



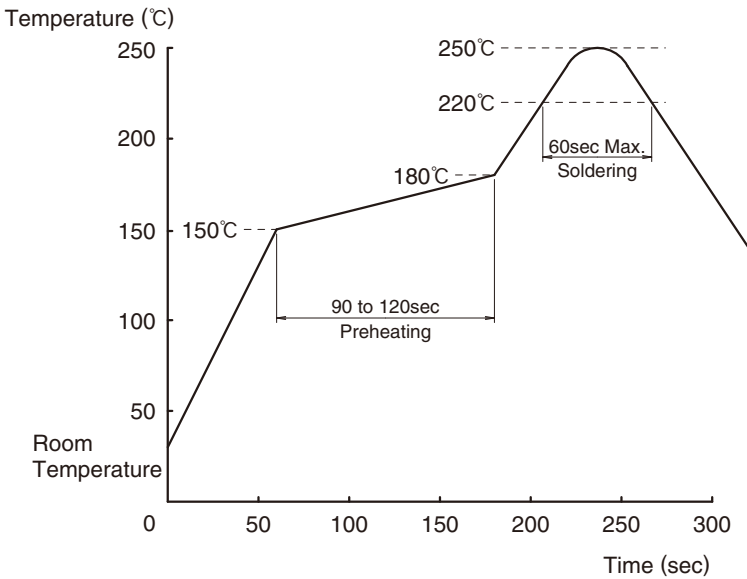
■DF12N without Solder Tab



Note 1 : Refer to 3 to 8 for dimensions A and B.

Note 2 :  If there is a pattern on the shaded area and no resist is applied, it may come into contact with the connector contact.

## ◆Precautions for Use

|                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.Recommended Temperature Profile (SMT)                                |  <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 temperature of the surface of the connector lead.</p>                                                                                                                                                                                                                                                                                                                                                                             |
| 2.Recommended Manual Soldering Condition (SMT)                         | Soldering iron temperature : 350°C, Soldering time : Within 3 seconds                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 3.Recommended Screen Thickness and Open Area Ratio(Pattern Area Ratio) | 0.12mm<br>Open area ratio : 70%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 4.Board Warp(SMT)                                                      | Maximum 0.02mm in the connector center area, based on both connector edges                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 5.Cleaning Condition                                                   | Refer to "Nylon Connector Use Handbook".                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 6.Cautions                                                             | <ul style="list-style-type: none"> <li>■ The receptacle is designed with the contacts exposed. Touching the contacts with bare hands may cause contact failure or damage to the device due to static electricity.</li> <li>■ Insertion/extraction when not mounted to the board may result in damage or contact deformation.</li> <li>■ Avoid securing the board only with the connector. Please use other methods to secure the board.</li> <li>■ Excessive prying during insertion and extraction may result in damage.</li> <li>■ Do not apply flux that will result in flux rise during manual soldering.</li> <li>■ The color of the mold may differ slightly depending on the production lot however this does not affect the performance.</li> </ul> |

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