

# 1.25mm Pitch Miniature Crimping Connector (UL Listed)

## DF13 Series



	Type	Mounting Type	Mounting Height(h)
Straight Type	DIP		5.3mm
	SMT		5.8mm
Right Angle Type	DIP		3.6mm
	SMT		

### ■ Features

#### 1. Miniature Size

Designed in the low profile at mounting height 5.8mm.  
(SMT mounting straight type)  
(For DIP type, the mounting height is to 5.3mm to the straight and 3.6mm at the right angle)

#### 2. Multi-contact

The double row type achieves the multi-contact up to 40 contacts, and secures 30% higher density in the mounting area, compared with the single row type.

#### 3. Correspond to Automatic Mounting

The header provides the grade with the vacuum absorption area, and secures automatic mounting by the embossed tape packaging.

In addition, the tube packaging can be selected. (Fig.1)

#### 4. Integral Basic Function Despite Miniature Size

The header is designed in a scoop-proof box structure, and completely prevents mis-insertion.

In addition, the surface mounting (SMT) header is equipped with the metal fitting to prevent solder peeling. (Fig.1)

#### 5. UL Certified

#### 6. Glow wire compliance (Compliant with IEC 60695-2-11)

### ■ Applications

Note PC, mobile terminal, miniature type business equipment, and other various consumer equipment, including video camera

Correspond to Automatic Mounting  
Secure the automatic plain area for the absorption type automatic mounting machine.

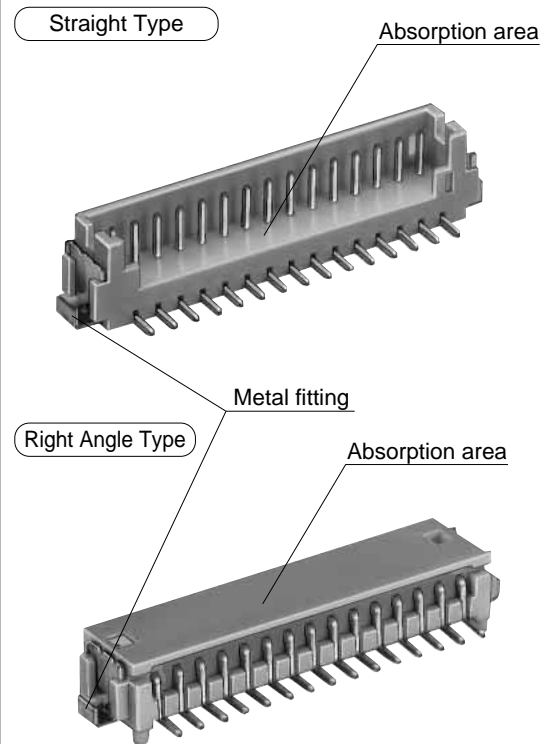


Fig.1

## Product Specifications

Rating	Current rating	Specification UL	1A	Operating Temperature Range : -35 to +85°C (Note 1) Operating Moisture Range : 20 to 80% (Note 3)	Storage Temperature Range : -10 to +60°C (Note 2) Storage Moisture Range : 40 to 70% (Note 2)
	Voltage rating	Specification UL			

Item	Specification	Condition
1. Insulation Resistance	500MΩ min.	100V DC
2. Withstanding voltage	No flashover or insulation breakdown.	500V AC/1 minute
3. Contact Resistance	30mΩ max.	100mA
4. Single Insertion/Extraction Force	0.3N (30gf) min., 3N (300gf) max.	Measured at the square steel pin of 0.35±0.002mm
5. Vibration	No electrical discontinuity of 1μs or more	Frequency : 10 to 55 Hz, single amplitude of 0.75 mm, 2 hours in each of the 3 directions.
6. Humidity (Steady state)	Contact resistance : 30mΩ max. Insulation resistance : 500MΩ min.	96 hours at temperature of 40°C and humidity of 90% to 95%
7. Temperature Cycle	Contact resistance : 30mΩ max. Insulation resistance : 500MΩ min.	(-55°C : 30 minutes → 5 to 35°C : 10 minutes → 85°C : 30 minutes → 5 to 35°C : 10 minutes) 5 cycles
8. Durability (Mating/un-mating)	Contact resistance : 30mΩ max.	Tin plating : 30 cycles Gold plating : 50 cycles
9. Resistance to Soldering heat	No deformation of components affecting performance.	Flow : 250°C for 10 seconds
		Manual soldering : 300°C for 3 seconds
		Reflow : At the recommended temperature profile
		Manual soldering : 300°C for 3 seconds

Note 1 : Includes temperature rise caused by current flow.

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.

Note 3 : Use without condensation on parts.

■ UL File No. and Recognition No. UL : E52653

## Materials/Finish

Product	Part	Material	Finish	Remarks
Crimping Socket	Insulator	Polyamide	Beige	UL94V-0
Crimping Contact for Socket	Contact	Phosphor copper	Tin plated or gold plated	———
Pin Header (Through hole)	Insulator	Polyamide	Beige	UL94V-0
	Contact	Brass	Tin plated	———
Pin Header (SMT Single row)	Insulator	Polyamide	Beige	UL94V-0
	Contact	Brass	Tin plated or gold plated	———
	Metal Fitting	Phosphor copper	Tin plated	———
Pin Header (SMT Double row)	Insulator	Polyamide	Beige	UL94V-0
	Contact	Brass	Tin-copper plated or gold plated	———
	Metal Fitting	Phosphor copper	Tin plated	———

## Product Number Structure

Refer to the chart below when determining the product specifications from the product number.

Please select from the product numbers listed in this catalog when placing orders.

### Connector

**DF13** **#** - **\*** **S** - **1.25** **C**

①      ②      ③ ④      ⑤      ⑥

① Series Name : DF13	③ Number of Contacts Single row : 2 to 12, 14, 15 Double row : 10, 20, 30, 40	⑤ Contact Pitch: 1.25mm
② Style Symbol : Blank : With boss ( A : Without boss C : Without boss	④ Connector Type S : Single row socket / P : Single row pin header DS : Double row socket / DP : Double row pin header	⑥ Connection Form / Contact Style. C : Crimping socket / DSA : Straight through hole DS : Right angle through hole / V : Straight SMT H : Right angle SMT

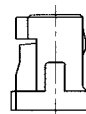
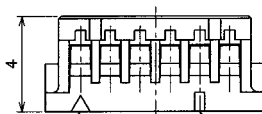
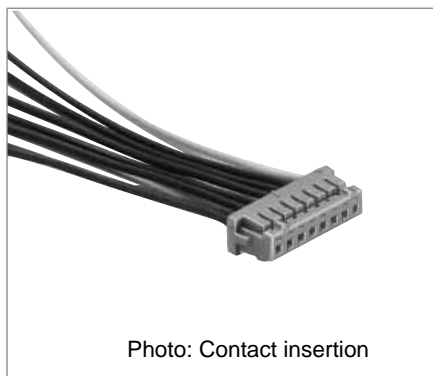
### Contact

**DF13** **#** - **2630** **SCF** **A**

①      ②      ③      ④

① Style Symbol Blank: Standard G: Low insertion / extraction	③ Packaging Type SCF : Socket Contact/Reel
② Applicable Cable Size 2630 : 26 to 30 AWG 3032 : 30 to 32 AWG	④ Plating Type Blank : Tin plated A : Gold plated

## ■Single Row Socket



Contact No.1 mark

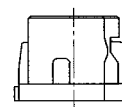
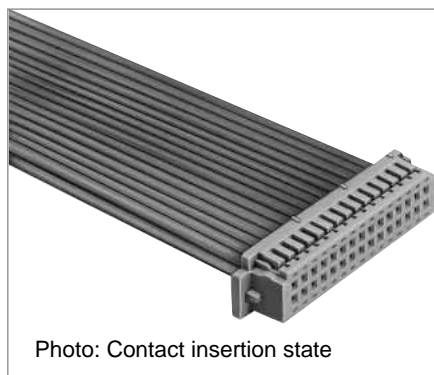
Marking per 5 contacts

Unit : mm

Part No.	HRS No.	No. of Contacts	A	B	RoHS	Part No.	HRS No.	No. of Contacts	A	B	RoHS
DF13-2S-1.25C	536-0001-4	2	1.25	4.15	Yes	DF13- 9S-1.25C	536-0008-3	9	10.00	12.90	Yes
DF13-3S-1.25C	536-0002-7	3	2.50	5.40		DF13-10S-1.25C	536-0009-6	10	11.25	14.15	
DF13-4S-1.25C	536-0003-0	4	3.75	6.65		DF13-11S-1.25C	536-0010-5	11	12.50	15.40	
DF13-5S-1.25C	536-0004-2	5	5.00	7.90		DF13-12S-1.25C	536-0011-8	12	13.75	16.65	
DF13-6S-1.25C	536-0005-5	6	6.25	9.15		DF13-13S-1.25C	536-0012-0	13	15.00	17.90	
DF13-7S-1.25C	536-0006-8	7	7.50	10.40		DF13-14S-1.25C	536-0013-3	14	16.25	19.15	
DF13-8S-1.25C	536-0007-0	8	8.75	11.65		DF13-15S-1.25C	536-0014-6	15	17.50	20.40	

Note 1. The quantity is delivered per bag (100 pcs.). If needed, please select and order the products per bag.

## ■Double Row Socket



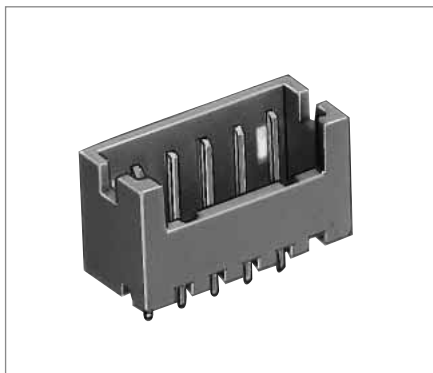
Contact No.1 mark

Unit : mm

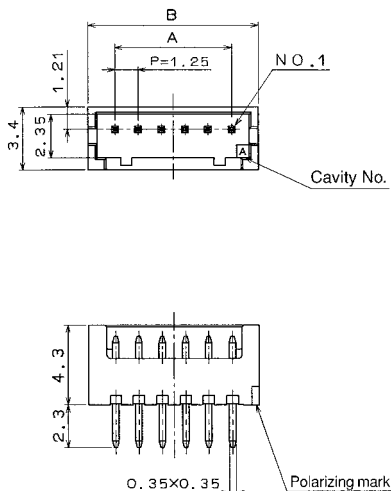
Part No.	HRS No.	No. of Contacts	A	B	RoHS
DF13-10DS-1.25C	536-0550-2	10	10.40	5.00	Yes
DF13-20DS-1.25C	536-0555-6	20	16.65	11.25	
DF13-30DS-1.25C	536-0560-6	30	22.90	17.50	
DF13-40DS-1.25C	536-0565-0	40	29.15	23.75	

Note : The quantity is delivered per bag (100pcs). If needed, please select and order the products per bag.

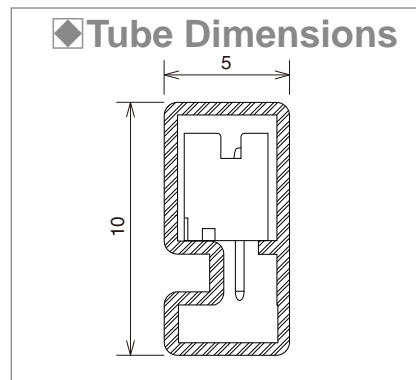
### Single Row Straight Pin Header (Through hole)



●Board Through-hole Diameter:  $\phi 0.6 \pm 0.03$



[Specific No.] (\*\*), \*\*  
Blank : Tin plated  
(20) : Tin plated, tube packaging



Unit: mm

Part No.	HRS No.	No. of Contacts	A	B	Tube Packaging Quantity	RoHS	Part No.	HRS No.	No. of Contacts	A	B	Tube Packaging Quantity	RoHS
DF13-2P-1.25DSA(**)	536-0101-9 **	2	1.25	4.15	115	Yes	DF13- 9P-1.25DSA(**)	536-0108-8 **	9	10.00	12.90	37	Yes
DF13-3P-1.25DSA(**)	536-0102-1 **	3	2.50	5.40	89		DF13-10P-1.25DSA(**)	536-0109-0 **	10	11.25	14.15	34	
DF13-4P-1.25DSA(**)	536-0103-4 **	4	3.75	6.65	72		DF13-11P-1.25DSA(**)	536-0110-0 **	11	12.50	15.40	31	
DF13-5P-1.25DSA(**)	536-0104-7 **	5	5.00	7.90	61		DF13-12P-1.25DSA(**)	536-0111-2 **	12	13.75	16.65	29	
DF13-6P-1.25DSA(**)	536-0105-0 **	6	6.25	9.15	52		DF13-13P-1.25DSA(**)	536-0112-5 **	13	15.00	17.90	27	
DF13-7P-1.25DSA(**)	536-0106-2 **	7	7.50	10.40	46		DF13-14P-1.25DSA(**)	536-0113-8 **	14	16.25	19.15	25	
DF13-8P-1.25DSA(**)	536-0107-5 **	8	8.75	11.65	41		DF13-15P-1.25DSA(**)	536-0114-0 **	15	17.50	20.40	23	

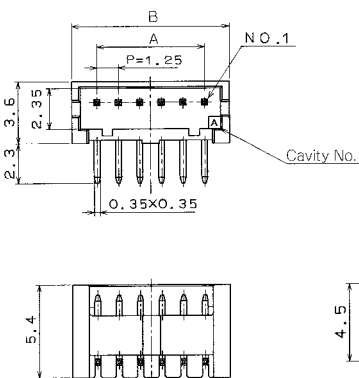
Note 1. The quantity at the specific No. "None" is delivered per bag (100 pcs.). If needed, please select and order the products per bag.

Note 2. Order the tube packaging product, multiplying the tube packaging quantity.

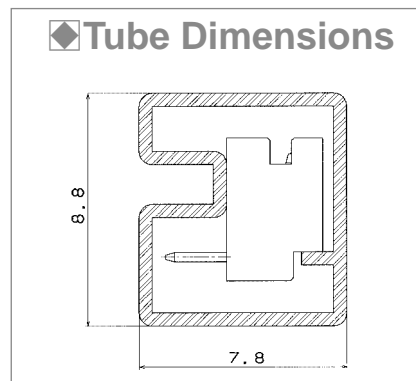
### Single Row Right Angle Pin Header (Through hole)



●Board Through-hole Diameter:  $\phi 0.6 \pm 0.03$



[Specific No.] (\*\*), \*\*  
(20) : Tin plated tube packaging



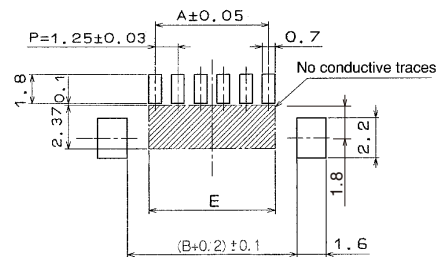
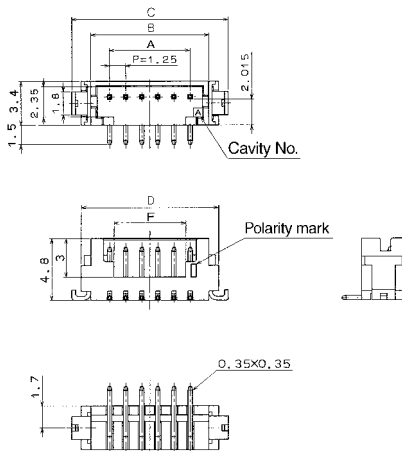
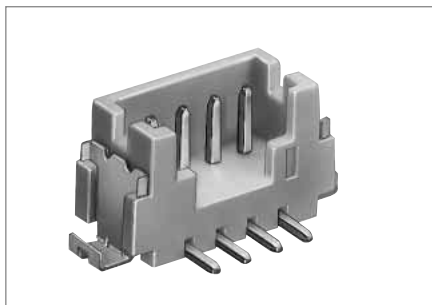
Unit : mm

Part No.	HRS No.	No. of Contacts	A	B	Tube Packaging Quantity	RoHS	Part No.	HRS No.	No. of Contacts	A	B	Tube Packaging Quantity	RoHS
DF13-2P-1.25DS(20)	536-0151-7 20	2	1.25	4.15	115	Yes	DF13- 9P-1.25DS(20)	536-0158-6 20	9	10.00	12.90	37	Yes
DF13-3P-1.25DS(20)	536-0152-0 20	3	2.50	5.40	89		DF13-10P-1.25DS(20)	536-0159-9 20	10	11.25	14.15	34	
DF13-4P-1.25DS(20)	536-0153-2 20	4	3.75	6.65	72		DF13-11P-1.25DS(20)	536-0160-8 20	11	12.50	15.40	31	
DF13-5P-1.25DS(20)	536-0154-5 20	5	5.00	7.90	61		DF13-12P-1.25DS(20)	536-0161-0 20	12	13.75	16.65	29	
DF13-6P-1.25DS(20)	536-0155-8 20	6	6.25	9.15	52		DF13-14P-1.25DS(20)	536-0163-6 20	14	16.25	19.15	25	
DF13-7P-1.25DS(20)	536-0156-0 20	7	7.50	10.40	46		DF13-15P-1.25DS(20)	536-0164-9 20	15	17.50	20.40	23	
DF13-8P-1.25DS(20)	536-0157-3 20	8	8.75	11.65	41								

Note 1. Order the tube packaging product, multiplying the tube packaging quantity.

## ■Single Row Straight Pin Header (SMT) (Three-Wall/Correspond to Vacuum Absorption)

### ◆PCB mounting pattern



Note 1. Shaded area must be free of any electrically conductive traces to avoid contact with soldered pin header terminations.

This pin header is a three-wall type, header has sufficiently large flat areas to allow pick-up with vacuum nozzles of automatic placement equipment.

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

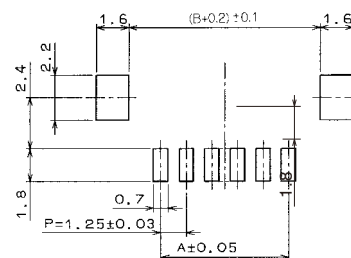
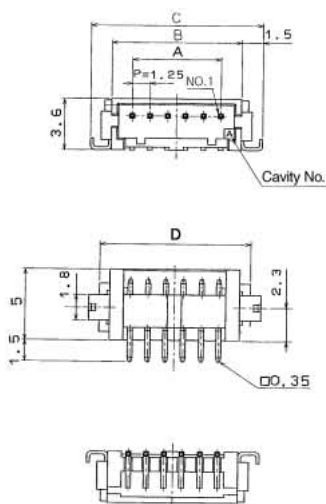
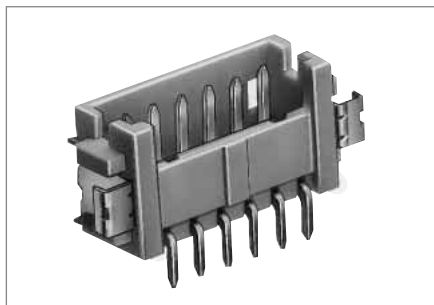
Unit : mm

Part No.	HRS No.	No. of Contacts	A	B	C	D	E	F	Emboss Width	RoHS
DF13C- 2P-1.25V(**)	536-0401-2 **	2	1.25	4.15	7.15	5.65	1.95	2.20	16	Yes
DF13C- 3P-1.25V(**)	536-0402-5 **	3	2.50	5.40	8.40	6.90	3.20	3.45	16	
DF13C- 4P-1.25V(**)	536-0403-8 **	4	3.75	6.65	9.65	8.15	4.45	3.10	24	
DF13C- 5P-1.25V(**)	536-0404-0 **	5	5.00	7.90	10.90	9.40	5.70	4.35	24	
DF13C- 6P-1.25V(**)	536-0405-3 **	6	6.25	9.15	12.15	10.65	6.95	5.60	24	
DF13C- 7P-1.25V(**)	536-0406-6 **	7	7.50	10.40	13.40	11.90	8.20	6.85	24	
DF13C- 8P-1.25V(**)	536-0407-9 **	8	8.75	11.65	14.65	13.15	9.45	8.10	24	
DF13C- 9P-1.25V(**)	536-0408-1 **	9	10.00	12.90	15.90	14.40	10.70	9.35	24	
DF13C-10P-1.25V(**)	536-0409-4 **	10	11.25	14.15	17.15	15.65	11.95	10.60	24	
DF13C-11P-1.25V(**)	536-0410-3 **	11	12.50	15.40	18.40	16.90	13.20	11.85	32	
DF13C-12P-1.25V(**)	536-0411-6 **	12	13.75	16.65	19.65	18.15	14.45	13.10	32	
DF13C-14P-1.25V(**)	536-0413-1 **	14	16.25	19.15	22.15	20.65	16.95	15.60	32	
DF13C-15P-1.25V(**)	536-0414-4 **	15	17.50	20.40	23.40	21.90	18.20	16.85	44	

Note 1. Please order the embossed tape packaging product according to reel number. (1000pcs/reel)

## ■ Single Row Right Angle Pin Header (SMT) (Four-Wall/Correspond to Vacuum Absorption)

### ◆ PCB mounting pattern



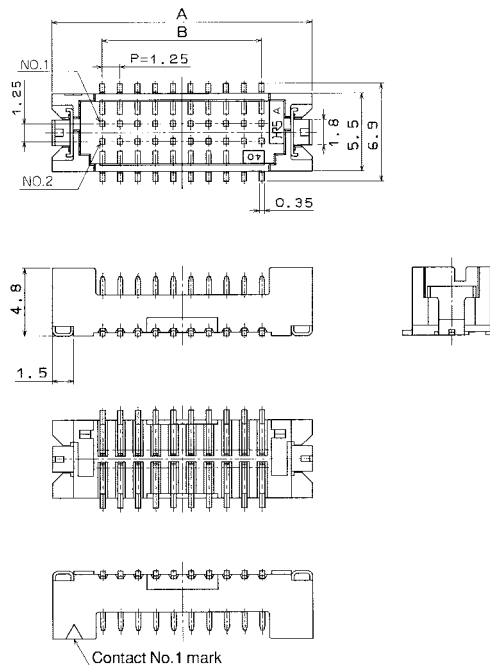
[Specific No.] (\*\*), \*\*  
(21) : Tin plated embossed tape packaging  
(51) : Gold plated embossed tape packaging

Unit : mm

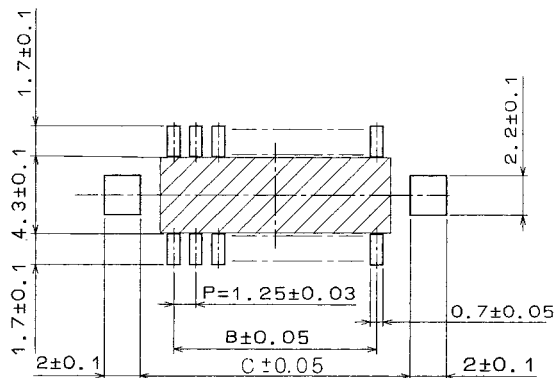
Part No.	HRS No.	No. of Contacts	A	B	C	D	Emboss Width	RoHS
DF13A- 2P-1.25H(**)	536-0301-8 **	2	1.25	4.15	7.15	5.65	16	Yes
DF13A- 3P-1.25H(**)	536-0302-0 **	3	2.50	5.40	8.40	6.90	16	
DF13A- 4P-1.25H(**)	536-0303-3 **	4	3.75	6.65	9.65	8.15	24	
DF13A- 5P-1.25H(**)	536-0304-6 **	5	5.00	7.90	10.90	9.40	24	
DF13A- 6P-1.25H(**)	536-0305-9 **	6	6.25	9.15	12.15	10.65	24	
DF13A- 7P-1.25H(**)	536-0306-1 **	7	7.50	10.40	13.40	11.90	24	
DF13A- 8P-1.25H(**)	536-0307-4 **	8	8.75	11.65	14.65	13.15	24	
DF13A- 9P-1.25H(**)	536-0308-7 **	9	10.00	12.90	15.90	14.40	24	
DF13A-10P-1.25H(**)	536-0309-0 **	10	11.25	14.15	17.15	15.65	24	
DF13A-11P-1.25H(**)	536-0310-9 **	11	12.50	15.40	18.40	16.90	32	
DF13A-12P-1.25H(**)	536-0311-1 **	12	13.75	16.65	19.65	18.15	32	
DF13A-14P-1.25H(**)	536-0313-7 **	14	16.25	19.15	22.15	20.65	32	
DF13A-15P-1.25H(**)	536-0314-0 **	15	17.50	20.40	23.40	21.90	44	

Note 1. Please order the embossed tape packaging product according to reel number. (1000pcs/reel)

## ■Double Row Straight Pin Header (SMT) (Four-Wall/Correspond to Vacuum Absorption)



### ◆PCB mounting pattern



Note 1. Shaded area must be free of any electrically conductive traces to avoid contact with soldered pin header terminations.

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

Unit: mm

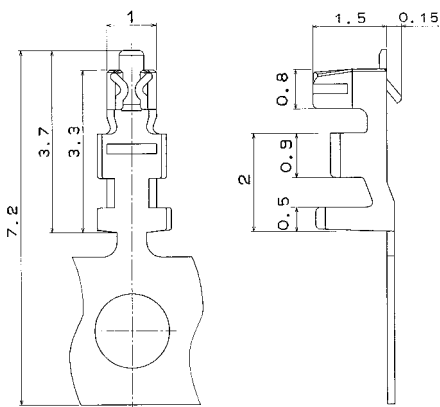
Part No.	HRS No.	No. of Contacts	A	B	C	Spec No. (21)	Spec No. (51)	Emboss Width	RoHS
DF13EA-10DP-1.25V(**)	536-0570-0	10	12.10	5.00	8.70	✓	✓	24	Yes
DF13EA-20DP-1.25V(**)	536-0571-0	20	18.35	11.25	14.95	✓	✓	32	
DF13EA-30DP-1.25V(**)	536-0572-0	30	24.60	17.50	21.20	✓	✓	44	
DF13EA-40DP-1.25V(**)	536-0573-0	40	30.85	23.75	27.45	-	✓	44	

Note 1. Please order the embossed tape packaging product according to reel number. (1000pcs/reel)

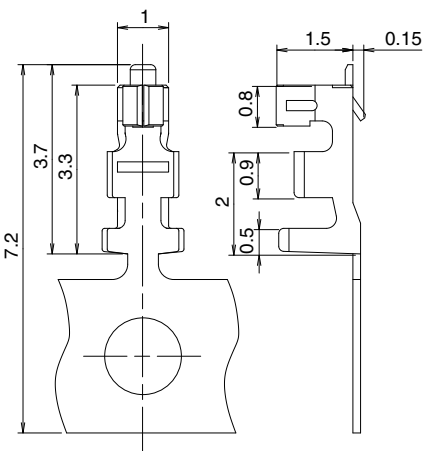
Note 2. The absorption cap is attached to the embossed tape packaging product.

## ■ Crimping Contact

### ● DF13



### ● DF13G



Part No.	HRS No.	Recommended wire				Packaging	Finish	RoHS
		UL style	Wire size	Wire conductor	Jacket diameter			
DF13-2630SCF	536-0300-5	1061	26AWG	7pieces/ 0.16mm	0.56 to 1.0mm	10,000pcs/reel	Tin plating	Yes
		1571	28AWG	7pieces/ 0.127mm				
			30AWG	7pieces/ 0.1mm				
DF13-3032SCF	536-0299-8	1061	30AWG	7pieces/ 0.1mm	0.52 to 0.8mm	10,000pcs/reel	Gold plating	Yes
		1571	32AWG	7pieces/ 0.08mm				
DF13-2630SCFA(04)	536-0298-5 04	1061	26AWG	7pieces/ 0.16mm	0.56 to 1.0mm	10,000pcs/reel	Gold plating	Yes
		1571	28AWG	7pieces/ 0.127mm				
			30AWG	7pieces/ 0.1mm				
DF13-3032SCFA	536-0641-6 00	1061	30AWG	7pieces/ 0.1mm	0.52 to 0.8mm	10,000pcs/reel (Low insertion/extraction)	Gold plating	Yes
		1571	32AWG	7pieces/ 0.08mm				
DF13G-2630SCF	536-0643-1	1061	26AWG	7pieces/ 0.16mm	0.56 to 1.0mm	10,000pcs/reel	Tin plating	Yes
		1571	28AWG	7pieces/ 0.127mm				
			30AWG	7pieces/ 0.1mm				
DF13G-2630SCFA	536-0642-9	1061	26AWG	7pieces/ 0.16mm	0.56 to 1.0mm	10,000pcs/reel	Gold plating	Yes
		1571	28AWG	7pieces/ 0.127mm				
			30AWG	7pieces/ 0.1mm				

Note 1. Contact extraction tool : DF-C-PO(B)

Note 2. Material used as a conductor of recommended wire is annealed tinned copper wire.

Note 3. Please contact your local Hirose sales REP if you plan on using wires other than those listed above.

## ◆ Applicable Crimping Tool

Type	Part No.	HRS No.	Applicable Contact
Applicator	AP105-DF13-2630S	901-4531-9	DF13-2630SCF/SCFA
	AP105-DF13-3032S	901-4552-9	DF13-3032SCF/SCFA
Press Main Unit	CM-105C	901-0001-0	—
Manual Crimping Tool	DF13-TB2630HC	550-0256-1	DF13-2630SCF
Extraction Tool	DF-C-PO(B)	550-0179-2	DF13-2630SCF/SCFA
			DF13G-2630SCF/SCFA
			DF13-3032SCF/SCFA

Note 1. If a trouble has occurred due to other tools, which are not designated by Hirose, Hirose won't guarantee any product.

Note 2. The manual crimping tool is used to sequentially cut the reel contact with carrier.

Note 3. Please conduct crimping work according to the "Crimping quality standard" and "Crimping condition table".

## ◆ Application Pattern

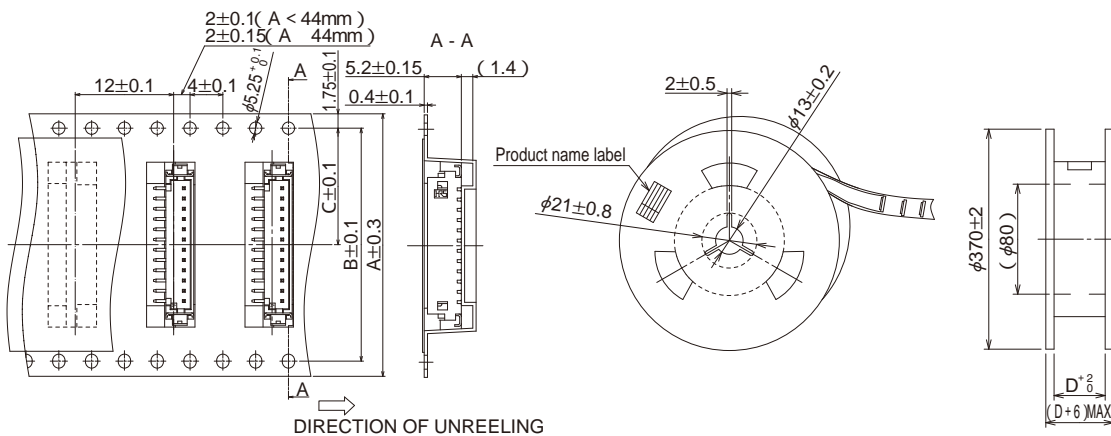
	SMT (Single Row Product)	Through hole (Single Row Product)	SMT (Double Row Product)
Right Angle	<p>DF13-*S-1.25C (6) (3.6) DF13(A)-*P-1.25H</p>	<p>DF13-*S-1.25C (6.4) (3.6) DF13-*P-1.25DS</p>	
Straight	<p>DF13-*S-1.25C (5.6) (3.4) DF13(C)-*P-1.25V</p>	<p>DF13-*S-1.25C (5.3) (3.4) DF13-*P-1.25DSA</p>	<p>DF13-*S-1.25C (5.8) (5.5) DF13E(A)-*DP-1.25V</p>



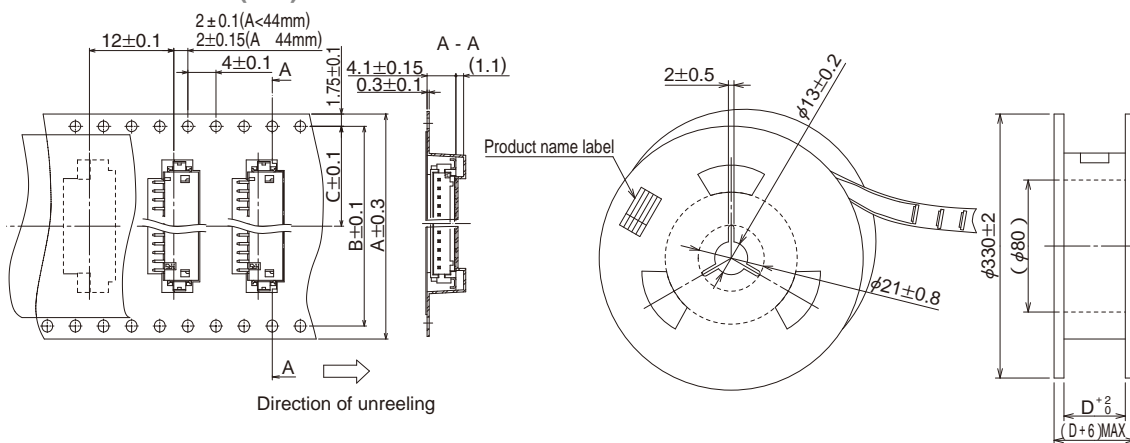


## ◆ Embossed Carrier Tape Dimensions

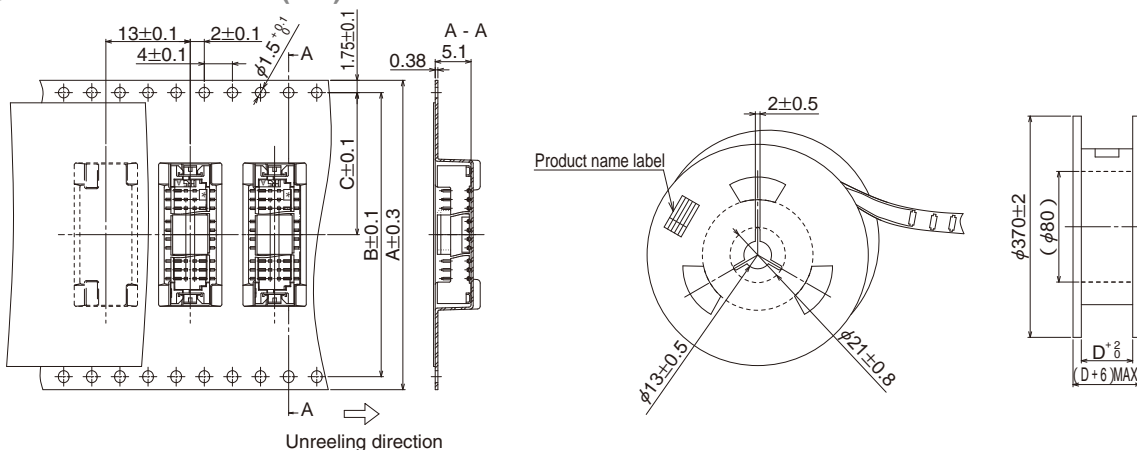
### ● DF13C-*\*P*-1.25V (\*\*)



### ● DF13A-*\*P*-1.25H (\*\*)



### ● DF13EA-*\*DP*-1.25V (\*\*)



Unit: mm

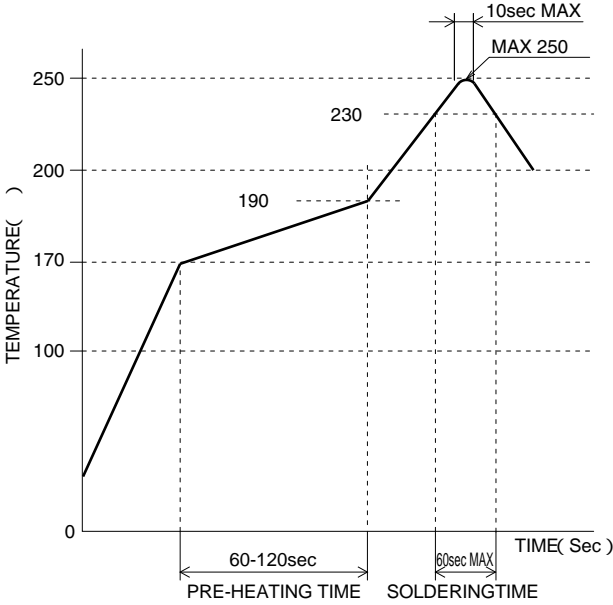
Product Type	Size	No. of Contacts	A	B	C	D
DF13C- <i>*P</i> -1.25V (**)		2, 3	16	—	7.5	16.4
		4 to 10	24	—	11.5	24.4
DF13A- <i>*P</i> -1.25H (**)		11 to 14	32	28.4	14.2	32.4
		15	44	40.4	20.2	44.4

Note : The 13 contacts is not serialized.

Unit: mm

Product Type	Size	No. of Contacts	A	B	C	D
DF13EA- <i>*DP</i> -1.25V (**)		10	24	—	11.5	24.4
		20	32	28.4	14.2	32.4
		30 to 40	44	40.4	20.2	44.4

## ◆Precautions

<p>1. Recommended Temperature Profile (SMT)</p>	 <p>[Applicable Conditions]</p> <ol style="list-style-type: none"> <li>1. Peak temperature : 250 max.</li> <li>2. Heating area : 230 min. for less than 60 seconds</li> <li>3. Preheating area : 170 to 190 for 60 to 120 seconds</li> <li>4. Number of times : no more than 2 times</li> </ol> <p>* Measurement is conducted at the contact lead part</p> <p>Soldering results may change depending on conditions such as solder paste type, manufacturer, PCB size, and other soldering materials. Please determine all mounting conditions before use.</p> <p>Note 1. This temperature profile is a recommended value. Note 2. 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. Note 3. The temperature profile indicates the board surface temperature at the point of contacts with the connector terminals. Note 4. Slight variations in color of the plastic compounds do not affect form, fit or function of the connector.</p>
<p>2. Recommended Soldering Condition (SMT)</p>	<p>Manual soldering : 290±10°C for 2 seconds max.</p>
<p>3. Recommended Screen Thickness (SMT)</p>	<p>0.15 to 0.2mm</p>
<p>4. Board Warpage (SMT)</p>	<p>Max 0.03mm in the connector center area, based on both connector edges</p>
<p>5. Recommended Soldering Condition (Through hole)</p>	<p>Flow : 250±5°C for 3 seconds Manual soldering : 290±10°C for 2 seconds</p>
<p>6. Cleaning Condition</p>	<p>Refer to Wire to board connector Use Hand book. IPA cleaning is allowed. (Cleaning is not recommended because cleaning may change the mating/withdrawal feeling etc. Please contact us when you use other cleaning agents.)</p>
<p>7. Connection Condition</p>	<p>Refer to Wire to board connector Use Hand book. ■Carefully carry out the crimping operation according to "Crimping Condition Sheet" and "Crimping Quality Standard", because the crimping contact is an extremely small style.</p>
<p>8. Cautions</p>	<p>■Be careful for the excessive scoop insertion/extraction, which will cause damage to the product.</p>
<p>9. Precautions</p>	<p>Refer to Wire to board connector Use Hand book.</p>

## ◆ Precautions

### <Precautions at Time of Insertion>

Align with the connector form and press down continue pressing until there is a tactile click.

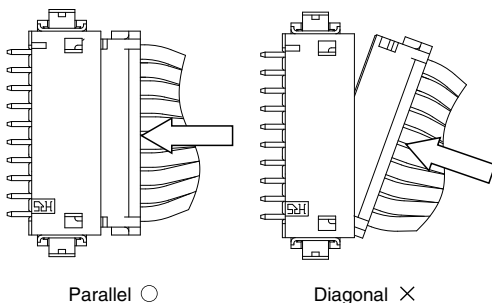
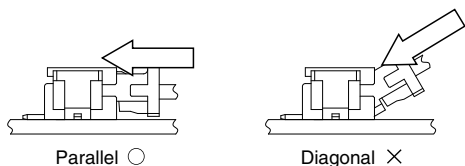
#### Handing

Method: Lightly grasping the base the cable, press the connector with your finger and insert it.

#### Insertion Angle

Caution: Do not insert at an angle of 30° or greater. Doing so will cause contact deformation or case damage.

Method: Insert with the connector parallel.



### <Precautions at Time of Disconnection>

Align with the connector form and press down continue pressing until there is a tactile click.

#### Handing

Method: Grasp the cable so that the entire cable is pulled evenly and it out.

#### Angle of Removal

Caution: Do not remove at an angle of 30° or greater. Doing so will cause contact deformation or case damage.

Method: Remove with the connector parallel.

