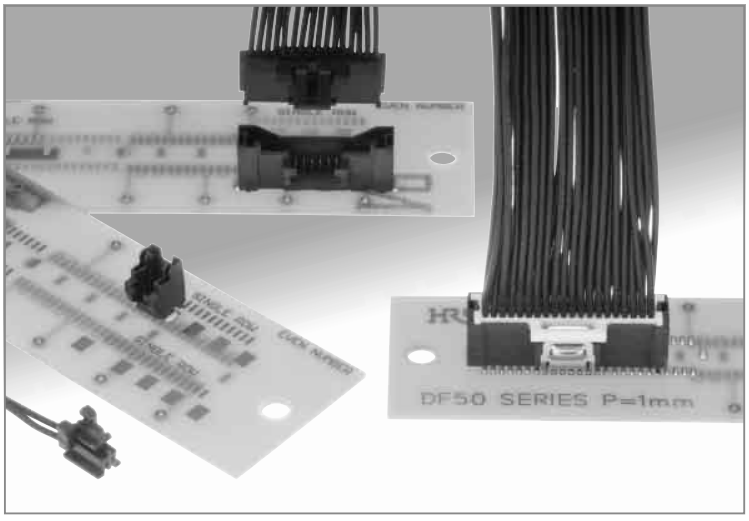
NEW

1 mm Pitch, WtoB, Positive Lock Connector

DF50 Series



■Features

1.Positive lock provides clear tactile click and secure mating

Thanks to the structure at the base of the terminal contacting at the same time as the lock engages, there is a clear tactile click engagement, which enables secure mating.(fig1)

2.Resistant to wrenching forces

The thick and durable housing offers enhanced strength against wall breakage. The deep mating and housings pressed against each other also enhance the strength of the structure against stress.

3.Robust and reliable lance structure

The crimping terminal receiving the lance on both surfaces helps enhance the lance strength.

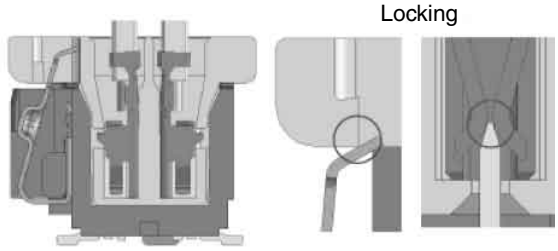
4.The adsorption area is secured and no need for any adsorption cap

Although compact in size, a sufficient adsorption area is secured and automatic implementation is possible without an adsorption cap.
(* Adsorption cap specification is also available on request)

5.Available for coating external diameter 0.9mm, AWG#28

Although a 1mm pitch, it's also compatible with 0.9mm, UL1061-AWG#28 cable (ϕ0.127×7)

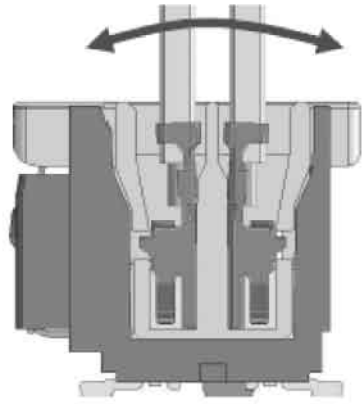
Clear tactile click and secure mating



A clear click engagement generated when locking starts, matching that of the terminal which comes into contact.

(fig1)

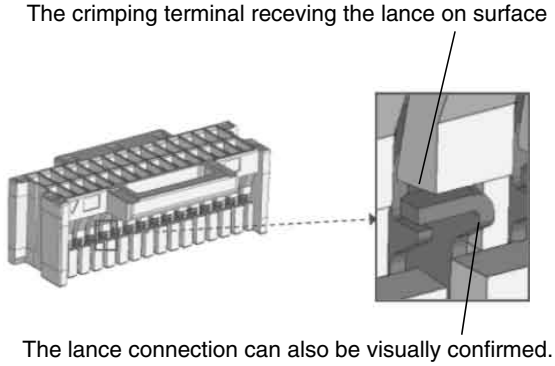
Resistant to wrenching forces



A structure that withstands stresses with deep mating.
The thick external wall enhances strength against wall breakage.

(fig.2)

Robust and reliable lance structure



(fig.3)

■Specifications

Ratings	Current rating	1A	Operating temperature range: Operating humidity range:	-35 to +85°C (Note 1) RH 20% to 80%
	Voltage rating 30 Vrms AC	100V AC /DC	Storage temperature range: Storage humidity range:	-10 to +60°C (Note 2) RH 40% to 70% (Note 2)

Item	Specification	Conditions
1.Insulation resistance	500MΩ min.	100 V DC
2.Withstanding voltage	No flashover or insulation breakdown	300 Vrms AC / 1 minute
3.Contact resistance	30mΩ max	20 mV,(DC or 1,000Hz)
4.Vibration	No electrical discontinuity of 1 μs or longer	Frequency: 10 to 55 Hz, single amplitude of 0.75mm, 10 cycles in each of the 3 directions.
5.Shock	No electrical discontinuity of 1 μs or longer	490m/s^2 duration of pulse 11ms at 3 times for 3 directions.
6.Humidity	Contact resistance 50 mΩ max. Insulation resistance: 100 MΩ min.	96 hours at of 40 ±2°C, and humidity of 90 to 95%
7.Temperature cycle	Contact resistance 50 mΩ max. Insulation resistance: 500 MΩ min.	-55°C → 5 to 35°C → 85°C → 5 to 35°C Time: 30 min. → 2 to 3 min. → 30 min. → 2 to 3 min. 5 cycles
8.Durability	Contact resistance 50 mΩ max.	30 cycles
9.Resistance to soldering heat	No deformation of affecting performance	Reflow: At the recommended temperature profile Manual soldering: 350°C for 3 to 4 seconds

Note 1. Includes temperature rise caused by current flow.
Note 2. The term "storage" refers to products stored for a long period prior to mounting and use.
The operating temperature and humidity range covers the non-conducting condition of installed connectors in storage, shipment or during transportation after board mounting.
Note 3. Information contained in this catalog represents general requirements for this Series.
Contact us for the drawings and specifications for a specific part number shown.

■Materials

Product	Part	Material	Finish	Remarks
Header	Insulator	LCP	Color:Black	UL94V-0
	Contact	Brass	Gold plated	———
	Metal fittings	Phosphor bronze (DF50A)	Tin plated	———
		Brass(DF50)	Tin plated	———
	Lock Metal	Stainless	———	———
Socket	Insulator	PBT	Color:Black(DF50A)	UL94V-0
			Color:White(DF50)	
Crimping contact	Contact	Phosphor bronze	Gold plated	———

■Ordering information

●Connector

DF50 – ＊ DP – 1 V ＊＊

❶ ❷ ❸ ❹ ❺ ❻

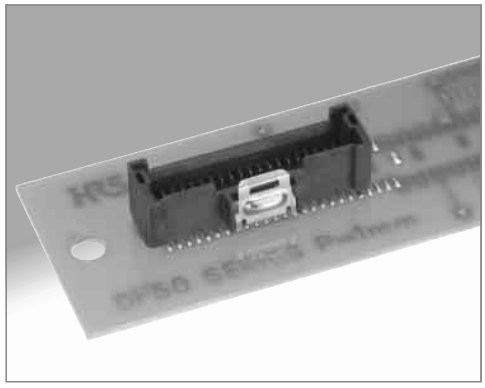
●Crimp contact

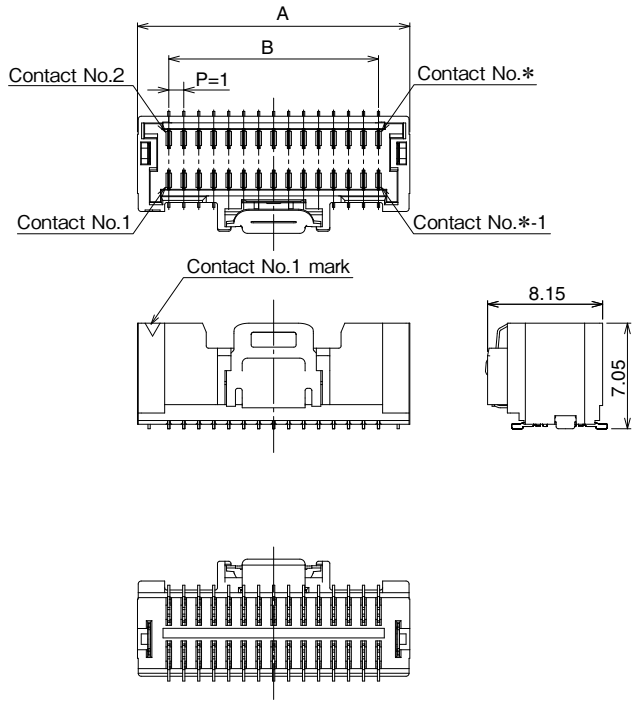
DF50 – 2830 SCF A

❶ ❼ ❽ ❾

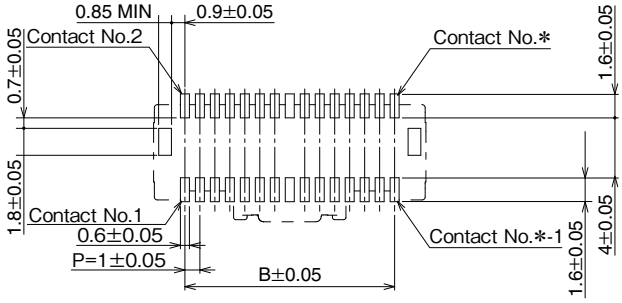
❶ Series name : DF50(double-row) DF50A(single-row)	❻ Specifications (51):SMT Embossed tape packaging (52):SMT Embossed tape packaging (with vacuum pick-up cap)
❷ Number of positions : 20, 30, 40, 50(double-row) : 2 to 16(single-row)	
❸ Connector type DP : Double-row header DS : Double-row socket P : Single-row header S : Single-row socket	❼ Applicable Conductor 2830 : AWG 28 to AWG 30 3032 : AWG 30 to AWG 32(under development)
	❽ Plating specification A:gold plating
❹ Contact pitch:1.0mm	
❺ Type of housing C : Crimp socket V: Straight SMT H: Right angle SMT(under development)	

■Double row straight pin header





■Recommended PCB mounting pattern



∗∗ : Number of contacts

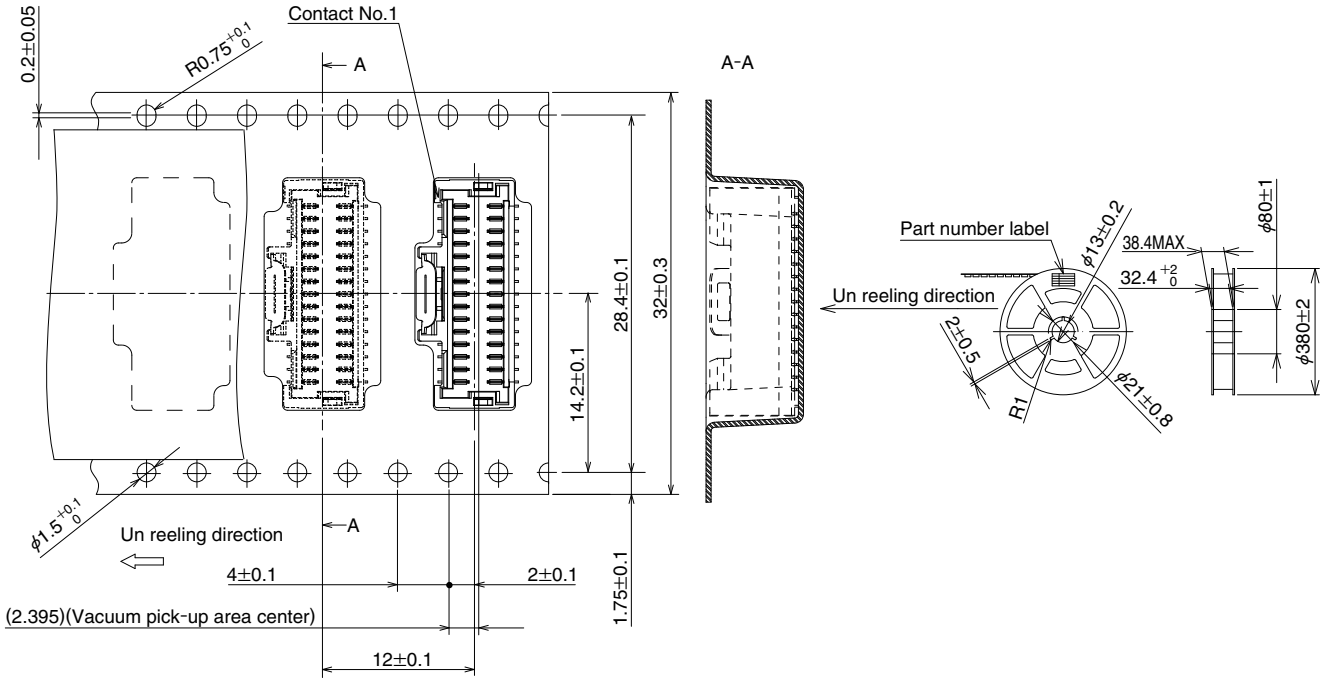
[Specifications number] - * *, (* *)
(51) : Embossed tape packaging
(52) : SMT Embossed tape packaging
(with vacuum pick-up cap)

Unit : mm

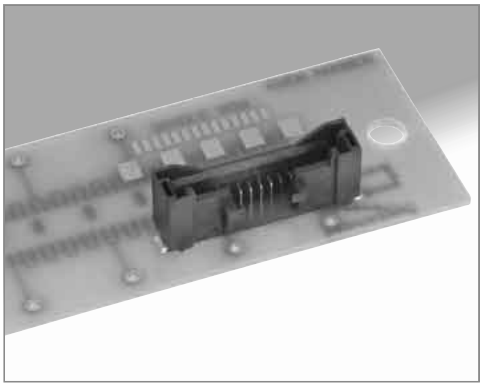
Part Number	CL No.	Number of contacts	A	B
DF50-20DP-1V (∗∗)	Under development	20	13.18	9
DF50-30DP-1V (∗∗)	665-0001-8-∗∗	30	18.18	14
DF50-40DP-1V (∗∗)	665-0005-9-∗∗	40	23.18	19
DF50-50DP-1V (∗∗)	Under development	50	28.18	24

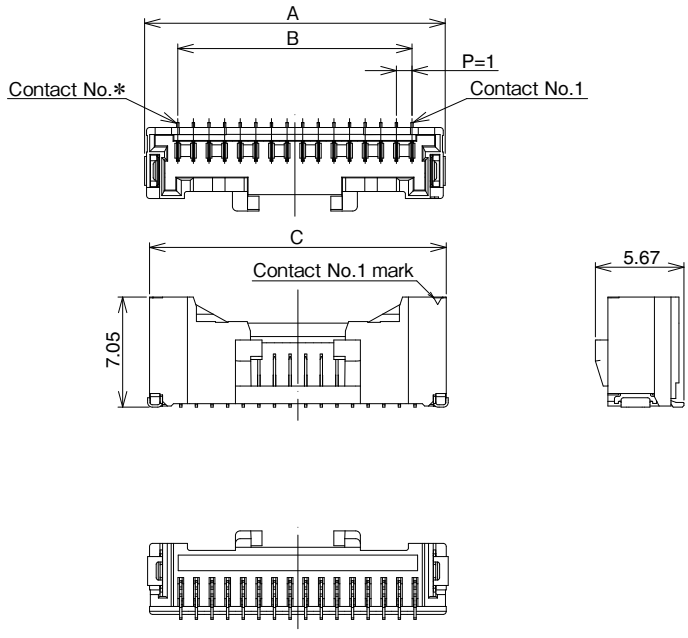
Note 1: Tape and reel packaging (1,000 pieces/reel). Order by number of reels.

■Packaging Specification

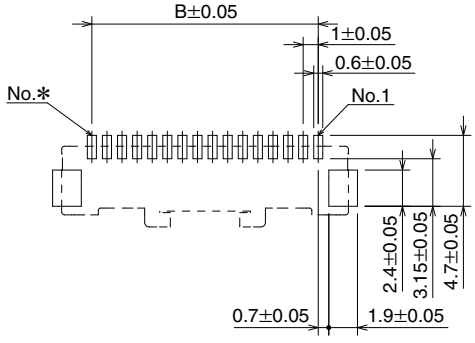


■Single row straight pin header





■Recommended PCB mounting pattern



∗∗ : Number of contacts

[Specifications number] - * *, (* *)
(51) : Embossed tape packaging

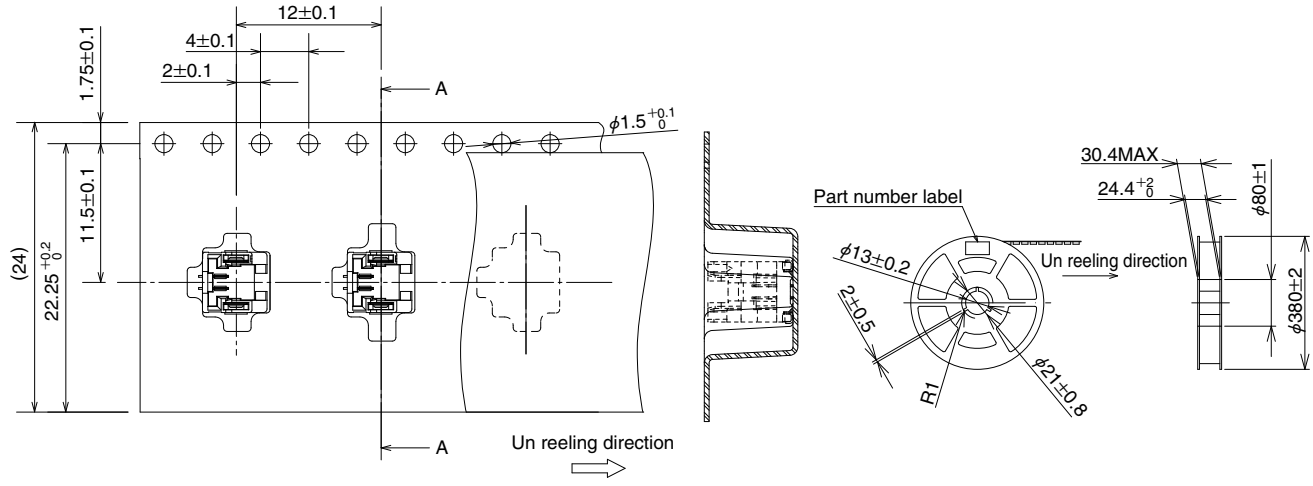
Unit : mm

Part Number	CL No.	Number of contacts	A	B	C
DF50A-2P-1V (∗∗)	665-1001-3-∗∗	2	5.25	1	5
DF50A-3P-1V (∗∗)	665-1004-1-∗∗	3	6.25	2	6
DF50A-4P-1V (∗∗)	665-1006-7-∗∗	4	7.25	3	7
DF50A-5P-1V (∗∗)	665-1008-2-∗∗	5	8.25	4	8
DF50A-6P-1V (∗∗)	665-1010-4-∗∗	6	9.25	5	9
DF50A-7P-1V (∗∗)	665-1012-0-∗∗	7	10.25	6	10
DF50A-8P-1V (∗∗)	665-1014-5-∗∗	8	11.25	7	11
DF50A-9P-1V (∗∗)	665-1016-0-∗∗	9	12.25	8	12
DF50A-10P-1V (∗∗)	665-1017-3-∗∗	10	13.25	9	13
DF50A-11P-1V (∗∗)	665-1019-9-∗∗	11	14.25	10	14
DF50A-12P-1V (∗∗)	665-1021-0-∗∗	12	15.25	11	15
DF50A-13P-1V (∗∗)	665-1023-6-∗∗	13	16.25	12	16
DF50A-14P-1V (∗∗)	665-1025-1-∗∗	14	17.25	13	17
DF50A-15P-1V (∗∗)	665-1027-7-∗∗	15	18.25	14	18
DF50A-16P-1V (∗∗)	665-1029-2-∗∗	16	19.25	15	19

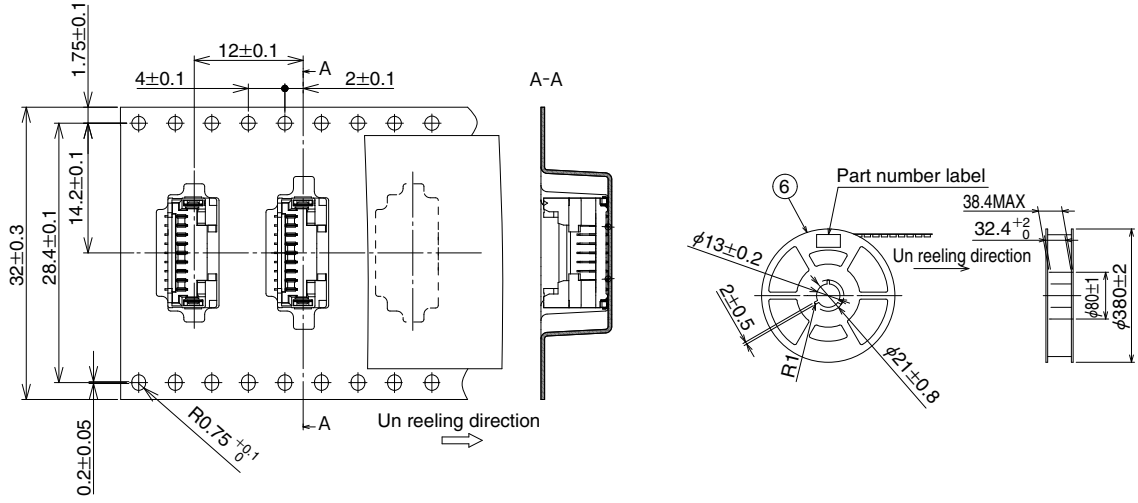
Note 1: Tape and reel packaging (1,000 pieces/reel). Order by number of reels.

■Packaging Specification

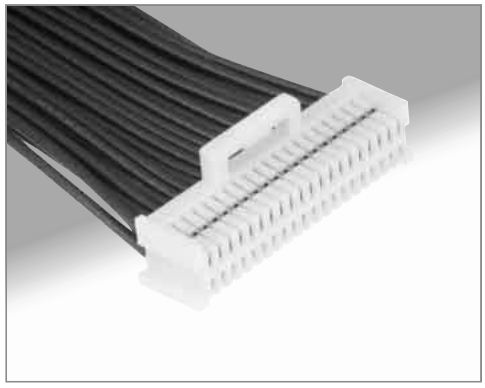
●DF50A-2P-1V～DF50A-8P-1V(No. of contacts 2 to 8)

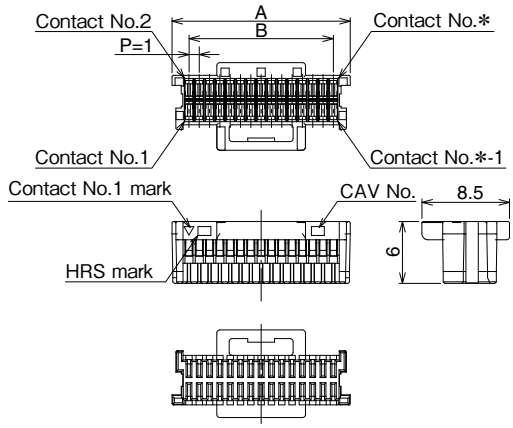


●DF50A-9P-1V～DF50A-16P-1V(No. of contacts 9 to 16)



■Double row socket



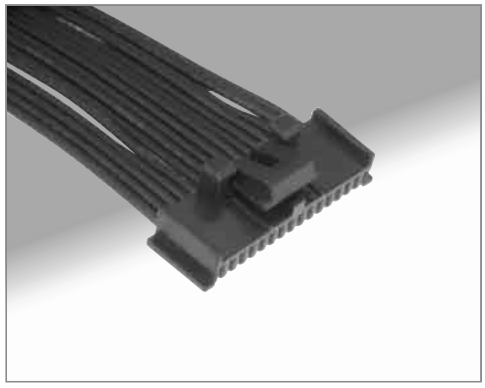


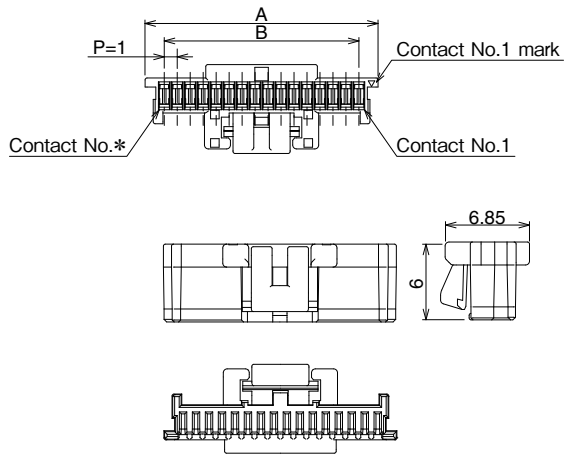
Unit : mm

Part Number	CL No.	Number of contacts	A	B
DF50-20DS-1C	Under development	20	12.28	9
DF50-30DS-1C	665-0003-3-00	30	17.28	14
DF50-40DS-1C	665-0006-1-00	40	22.28	19
DF50-50DS-1C	Under development	50	27.28	24

Note 1. The quantity is delivered per bag (1000 pcs.).
If needed, please select and order the products per bag.

■Single row socket



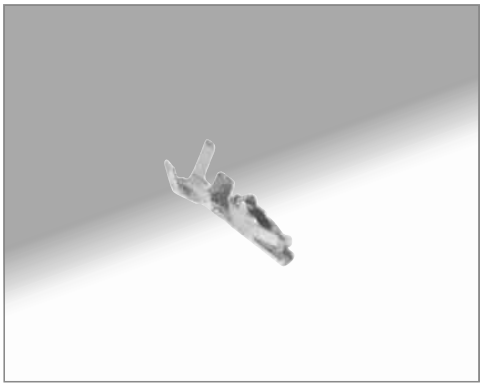


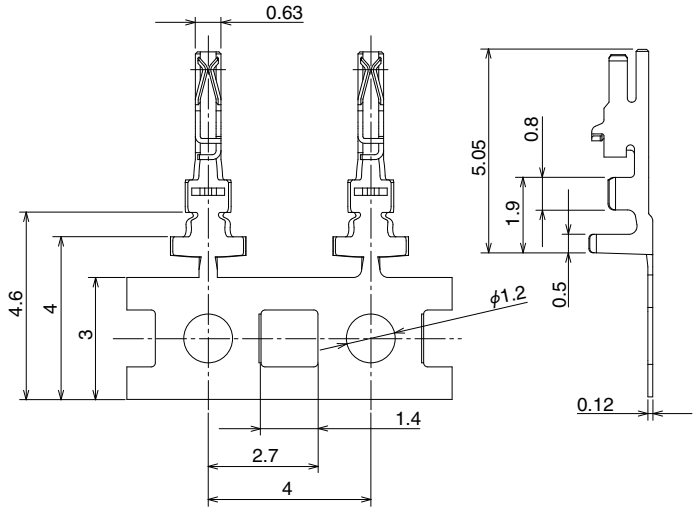
Unit : mm

Part Number	CL No.	Number of contacts	A	B
DF50A-2S-1C	665-1002-6-00	2	3.95	1
DF50A-3S-1C	665-1005-4-00	3	4.95	2
DF50A-4S-1C	665-1007-0-00	4	5.95	3
DF50A-5S-1C	665-1009-5-00	5	6.95	4
DF50A-6S-1C	665-1011-7-00	6	7.95	5
DF50A-7S-1C	665-1013-2-00	7	8.95	6
DF50A-8S-1C	665-1015-8-00	8	9.95	7
DF50A-9S-1C	665-1100-5-00	9	10.95	8
DF50A-10S-1C	665-1018-6-00	10	11.95	9
DF50A-11S-1C	665-1020-8-00	11	12.95	10
DF50A-12S-1C	665-1022-3-00	12	13.95	11
DF50A-13S-1C	665-1024-9-00	13	14.95	12
DF50A-14S-1C	665-1026-4-00	14	15.95	13
DF50A-15S-1C	665-1028-0-00	15	16.95	14
DF50A-16S-1C	665-1030-1-00	16	17.95	15

Note 1. The quantity is delivered per bag (1000 pcs.).
If needed, please select and order the products per bag.

■Crimping Contact





Unit : mm

Part Number	CL No.	Packaging type	Quantity	Finish
DF50-2830SCFA	665-0002-0-00	Reel	(30,000/Reel)	Gold plated
DF50-3032SCFA	Under development	–	–	–

Note 1: Tape and reel packaging (30,000 pieces/reel). Order by number of reels.

●Applicable Cable (Tin Plating Annealed Copper Wire)

Conductor Size (Wire construction)	Jacket diameter
AWG28 (7/φ0.127mm)	φ0.88mm
AWG30 (7/φ0.102mm)	φ0.80mm

Note : If other cables are used instead of the applicable cable, please contact the Hirose sales department.

●Recommended Cable

UL1061

●Strip Length

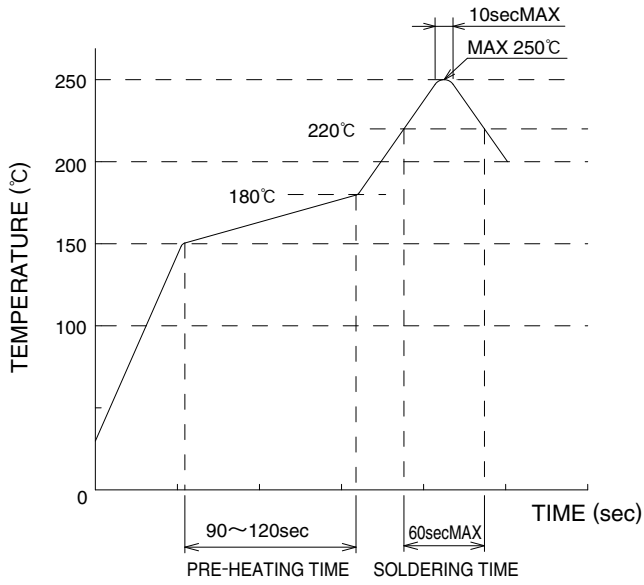
1.5～1.9mm

■Applicable Crimping Tool

Type	Part Number	CL No.	Applicable contact
Applicator	AP105-DF50-2830S	901-4616-0	DF50-2830SCFA
Press main unit	CM-105	901-0005-4	–
Manual crimping tool	HT305/DF50-2830HC	550	DF50-2830SCFA
Extraction tool	DF-C-PO (B)	550-0179-2	DF50-2830SCFA

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

■Usage Recommendations

1.Recommended temperature profile	 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. Note 2: The temperature profile indicates the board surface temperature at the point of contacts with the connector terminals.
2.Recommended manual soldering	Manual soldering: 350℃±10℃ for 3 to 4 seconds
3.Recommended screen thickness and open area ratio (Pattern area ratio)	Standard thickness 0.1mm Open area ratios:100%
4.Board warpage	Maximum of 0.02mm at the connector center, with both ends of the connector as reference points.
5.Cleaning conditions	Refer to “Nylon Connector Use Handbook”.
6.Precautions	■ Mating and un-mating of the connectors when not soldered on the boards is not recommended as this may cause deformation of the terminals, damage to the contacts or insulators. ■ When mating/un-mating do not twist or lift by the corners. Apply the forces evenly across the entire length and width of the connectors taking care NOT to damage or deform soldered terminations. ■ Slight discoloration on the insulating materials will not affect form, fit or function of the connectors.

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