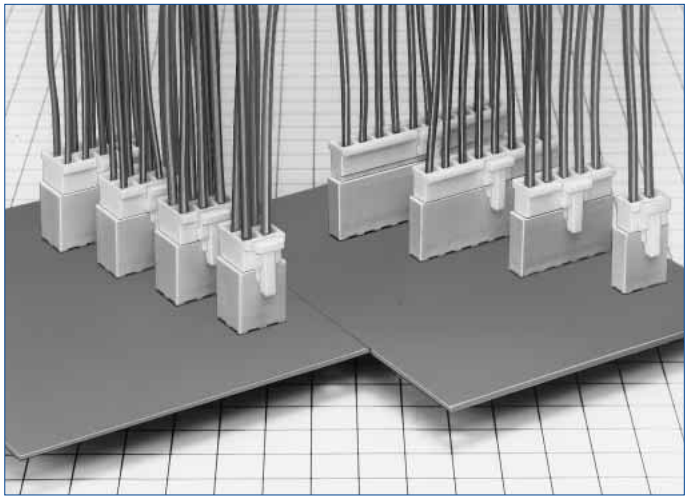
5mm Pitch Miniature Potting Connectors for Secondary Power Supply

DF5 Series



Single row type

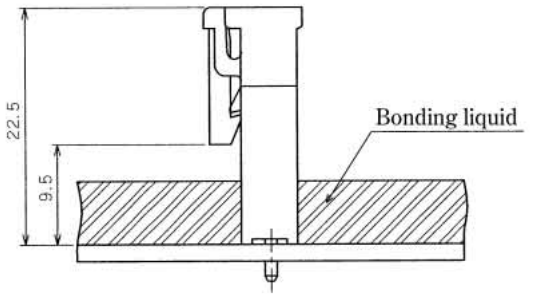


Fig.1-1

Double row type

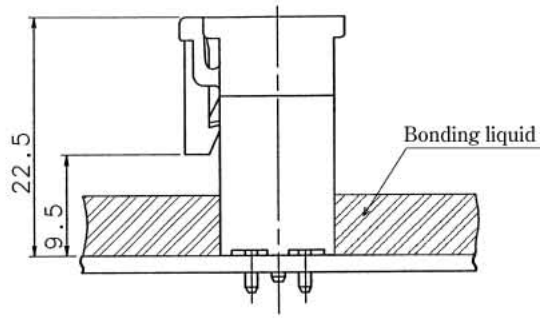


Fig.1-2

■Features

1. Potting Product

This connector is capable of potting 9mm maximum, and 22.5mm mounting height is a low profile. (Fig.1)

2. Prevent Mis-insertion

When the socket and pin header are mated, this connector is equipped with a mechanism to prevent reverse insertion or dissimilar contact insertion.

3. Means to Prevent Solder Cracks

The pin header employs glass enforced resin, and takes countermeasures to prevent solder cracks due to heat shrinkage.

4. Prevent Reverse Insertion in Printed Board

Boss is added to the pin header, and prevents reverse insertion in the printed board.

5. Full Lock Mechanism

The outer lock system employs full lock mechanism.

6. Current Capacity of 8A

Power can be supplied at 8A maximum. Specification will change according to applicable cable, number of contacts, number of rows. For further information, refer to product specifications as listed on next page.

7. UL and C-UL Certified

8. Glow Wire Compliance (Compliant with IEC 60695-2-11)

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■Product Specifications

Rating	Current rating	No. of rows	No. of contacts	18 AWG	20 AWG	22 AWG	Operating Temperature Range Operating Moisture Range	–35 to +85℃(Note 1) 40 to 80%
		Single row	2 to 10	8A	6A	5A		
		Double row	4					
			6					
			8	7A				
			10					
			12					
			14		5A	4A	Storage Temperature Range Storage Humidity Range	–10 to +60℃(Note 2) 40 to 70%(Note 2)
			16					
	Voltage rating	Specification	AC/DC 500V	UL/C-UL File No. and Recognition No. UL : E52653 C-UL : E52653				
		UL/C-UL	AC/DC 500V					

Item	Specification	Condition
1. Insulation Resistance	1000MΩ min.	500V DC
2. Withstanding voltage	No flashover or insulation breakdown.	1500V AC/1 minute
3. Contact Resistance	30mΩ max.	100mA
4. Single Insertion/ Extraction Force	0.3N (30gt) min., 4.5N (450gt) max.	Measured with 1.14±0.002mm steel pin
5. Vibration	No electrical discontinuity of 10μs or more	Frequency : 10 to 55 Hz, single amplitude of 0.75mm, 2 hours in each of the 3 directions.
6. Humidity (Steady state)	Contact resistance : 30mΩ max., Insulation resistance : 500M Ω min.	96 hours at temperature of 40℃ and humidity of 90% to 95%
7. Temperature Cycle	Contact resistance : 30mΩ max., Insulation resistance : 1000M Ω min.	(–55℃ : 30 minutes→15 to 35℃ : 10 minutes→85℃ : 30 minutes→5 to 35℃ : 10 minutes) 5 cycles
8. Durability (Mating/un-mating)	Contact resistance : 30mΩ max.	30 cycles
9.Resistance to Soldering heat	No deformation of components affecting performance.	Flow : 260℃ for 10 seconds
		Manual soldering : 350℃ 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.

■Materials / Finish

Product	Part	Material	Finish	Remarks
Crimping Socket	Insulator	Polyamide	White	UL94V-0
Crimping Contact for Socket	Contact	Phosphor bronze	Tin plated	————
Pin header	Insulator	Polyamide	Beige	UL94V-0
	Contact	Brass	Tin plated	————

■Product Number Structure

●Connector

DF5A - ＊ S - 5 C
❶ ❷ ❸ ❹ ❺

❶ Series Name : DF5A	❹ Contact Pitch : 5mm
❷ Number of contacts : Single row : 2 to 10 Double row : 4 to 16	❺ Contact type C : Crimping Socket DSA: Straight pin header
❸ Connector type S : Single row socket DS : Double row socket P : Single row header DP : Double row header	

●Contact

DF5A - 1822 SCF
❶ ❷ ❸

❶ Applicable cable type None : UL 1007 equivalent (jacket diameter 1.5 to 2.2mm) A: UL 1015 equivalent (jacket diameter 2.2 to 2.9mm)	❸ packaging type SCF : Socket contact / reel SC : Socket contact / pack
❷ Applicable cable size 1822 : 18 to 22 AWG	

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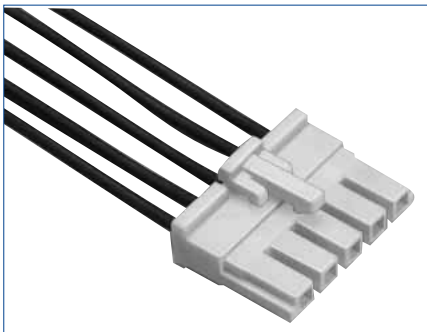
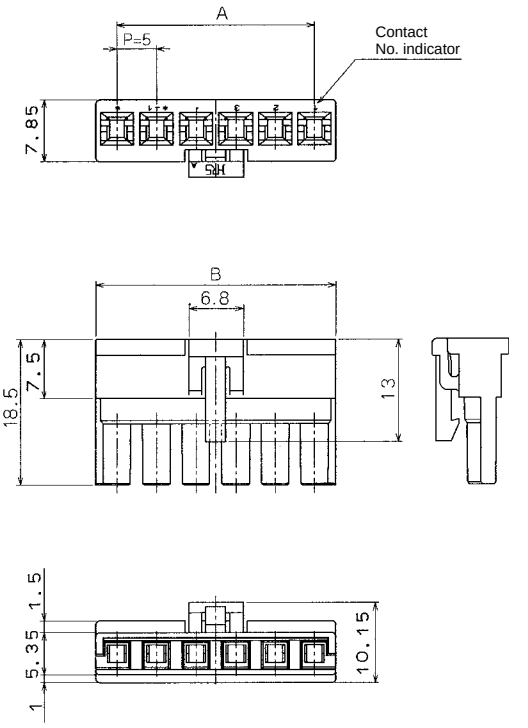
■Single Row Socket



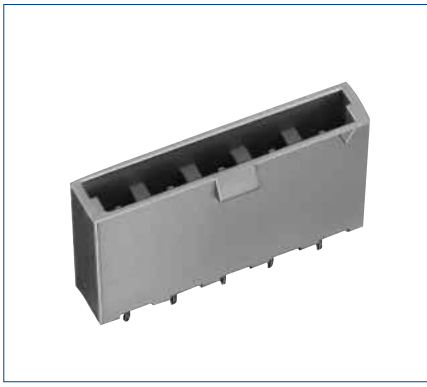
Contact Inserted

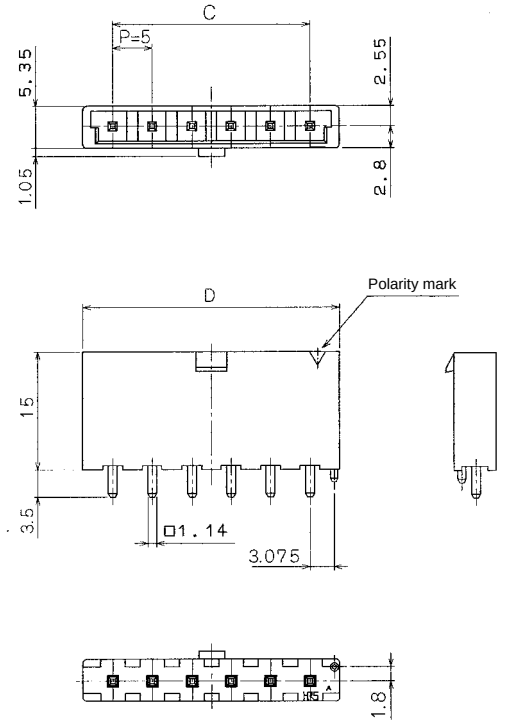


Part No.	HRS No.	No. of Contacts	A	B	RoHS
DF5A- 2S-5C	676-0007-8	2	5.0	10.5	YES
DF5A- 3S-5C	676-0008-0	3	10.0	15.5	
DF5A- 4S-5C	676-0009-3	4	15.0	20.5	
DF5A- 5S-5C	676-0010-2	5	20.0	25.5	
DF5A- 6S-5C	676-0011-5	6	25.0	30.5	
DF5A- 7S-5C	676-0012-8	7	30.0	35.5	
DF5A- 8S-5C	676-0013-0	8	35.0	40.5	
DF5A- 9S-5C	676-0014-3	9	40.0	45.5	
DF5A-10S-5C	676-0015-6	10	45.0	50.5	

Note : A packaging quantity is delivered by the bag unit (100 pcs.).

■Single Row Pin Header

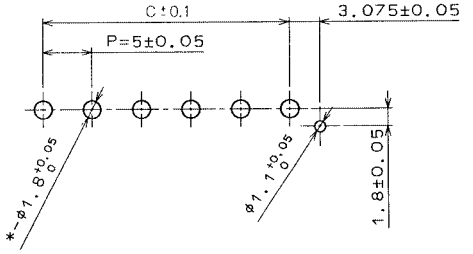




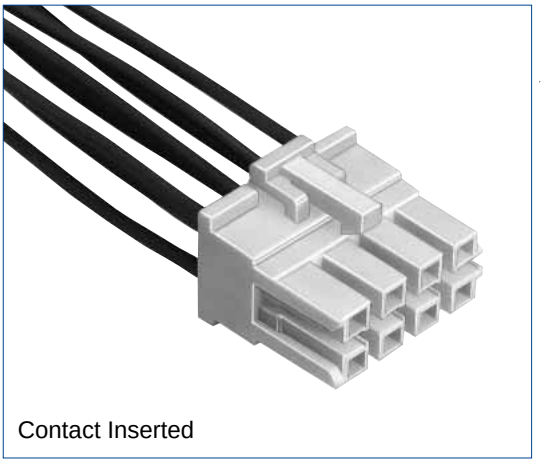
Part No.	HRS No.	No. of Contacts	C	D	RoHS
DF5A- 2P-5DSA(35)	676-0016-9 35	2	5.0	12.5	YES
DF5A- 3P-5DSA(35)	676-0017-1 35	3	10.0	17.5	
DF5A- 4P-5DSA(35)	676-0018-4 35	4	15.0	22.5	
DF5A- 5P-5DSA(35)	676-0019-7 35	5	20.0	27.5	
DF5A- 6P-5DSA(35)	676-0020-6 35	6	25.0	32.5	
DF5A- 7P-5DSA(35)	676-0021-9 35	7	30.0	37.5	
DF5A- 8P-5DSA(35)	676-0022-1 35	8	35.0	42.5	
DF5A- 9P-5DSA(35)	676-0023-4 35	9	40.0	47.5	
DF5A-10P-5DSA(35)	676-0024-7 35	10	45.0	52.5	

Note : A packaging quantity is delivered by the bag unit (100 pcs.).

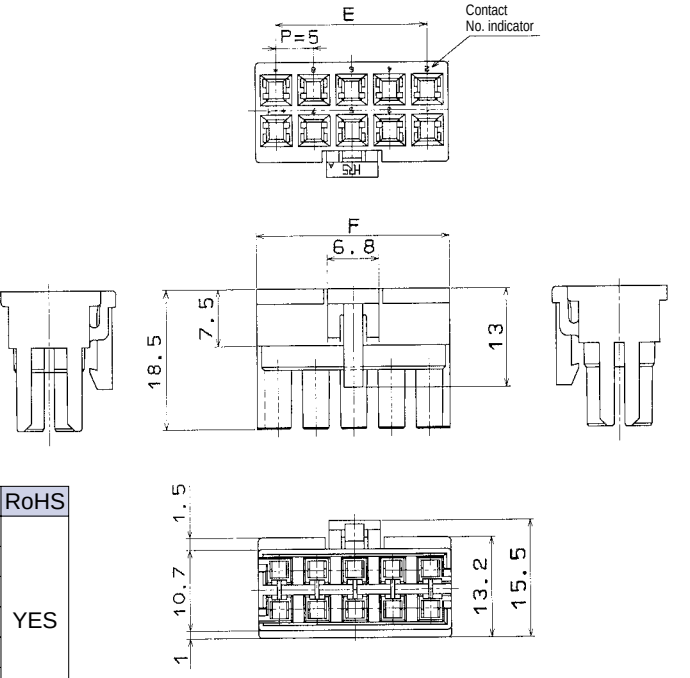
◆PCB mounting pattern (Board thickness = 1.6±0.1)



■Double Row Socket



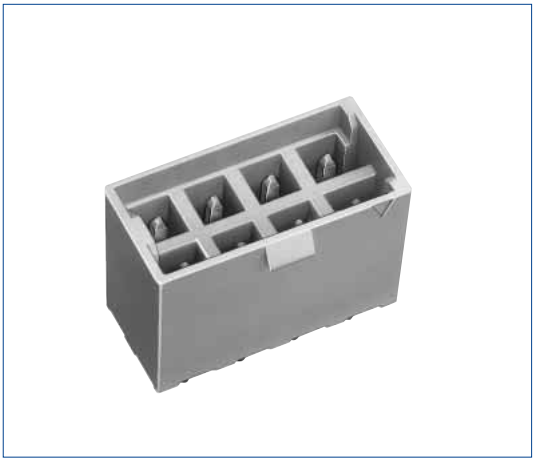
Contact Inserted

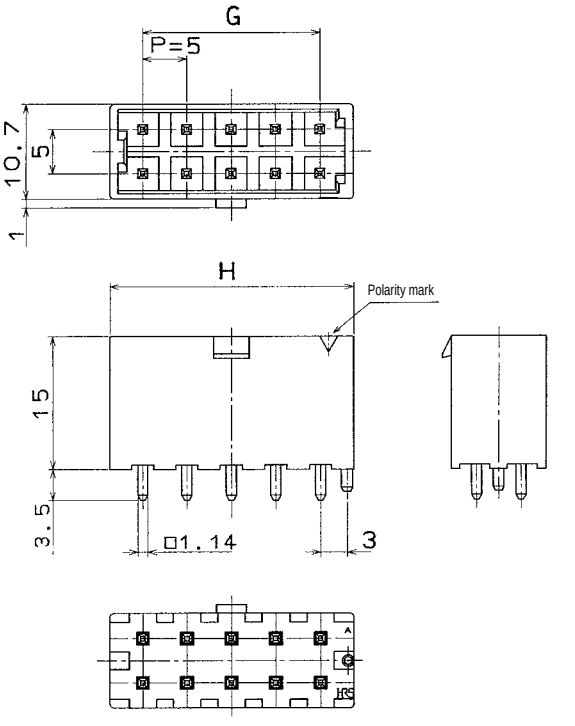


Part No.	HRS No.	No. of Contacts	E	F	RoHS
DF5A- 4DS-5C	676-0025-0	4	5.0	10.5	YES
DF5A- 6DS-5C	676-0026-2	6	10.0	15.5	
DF5A- 8DS-5C	676-0027-5	8	15.0	20.5	
DF5A-10DS-5C	676-0028-8	10	20.0	25.5	
DF5A-12DS-5C	676-0036-6	12	25.0	30.5	
DF5A-14DS-5C	676-0037-9	14	30.0	35.5	
DF5A-16DS-5C	676-0038-1	16	35.0	40.5	

Note : A packaging quantity is delivered by the bag unit (100 pcs.).

■Double Row Pin Header

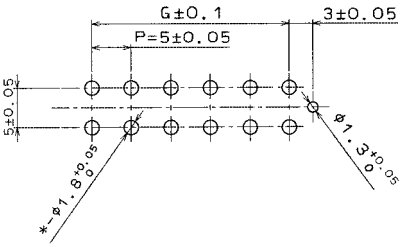




Part No.	HRS No.	No. of Contacts	G	H	RoHS
DF5A- 4DP-5DSA(35)	676-0029-0 35	4	5.0	12.5	YES
DF5A- 6DP-5DSA(35)	676-0030-0 35	6	10.0	17.5	
DF5A- 8DP-5DSA(35)	676-0031-2 35	8	15.0	22.5	
DF5A-10DP-5DSA(35)	676-0032-5 35	10	20.0	27.5	
DF5A-12DP-5DSA(35)	676-0033-8 35	12	25.0	32.5	
DF5A-14DP-5DSA(35)	676-0034-0 35	14	30.0	37.5	
DF5A-16DP-5DSA(35)	676-0035-3 35	16	35.0	42.5	

Note : A packaging quantity is delivered by the bag unit (100 pcs.).

◆PCB mounting pattern (Board thickness = 1.6±0.1)



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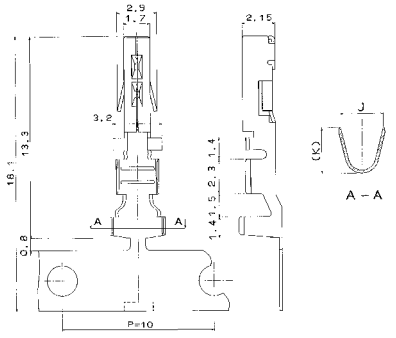
◆Socket Crimping Contact



Part No.	HRS No.	Applicable Cable				Packaging	J	K	RoHS
		ULStyle	Jacket Diameter	Wire Size	Stranded Wire Conductor				
DF5-1822SCF	676-0001-1	1007	ϕ1.5 to 2.2mm	18 AWG	43/0.18mm	5,000 / reel	2.8	3	Yes
				20 AWG	21/0.18mm				
				22 AWG	17/0.16mm				
DF5-1822SC	676-0002-4	1007	ϕ2.1mm	18 AWG	43/0.18mm	100 / pack			
			ϕ1.8mm	20 AWG	21/0.18mm				
			ϕ1.6mm	22 AWG	17/0.16mm				
DF5A-1822SCF	676-0003-7	1015	ϕ2.2 to 3.2mm	18 AWG	43/0.18mm	5,000 / reel	3.8	4	
				20 AWG	21/0.18mm				
				22 AWG	17/0.16mm				
DF5A-1822SC	676-0004-0	1015	ϕ2.9mm	18 AWG	43/0.18mm	100 / pack			
			ϕ2.6mm	20 AWG	21/0.18mm				
			ϕ2.4mm	22 AWG	17/0.16mm				

Note 1 : Applicable wire with tin plated solid soft conductor.

Note 2 : When using other than the recommended wire, contact your nearest Hirose representative.

Note 3 : Strip length : 3.0 to 4.0mm

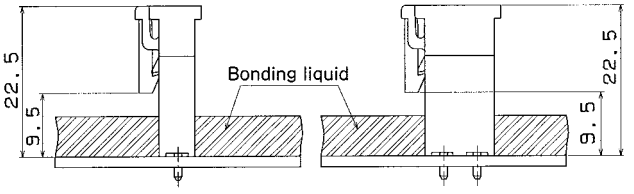
◆Applicable Crimping Tools

Type	Item	Part No.	HRS No.	Applicable Contact
Auto-matic	Press unit	CM-105C	901-0001-0	————————
	Applicator	AP105-DF5-1822S	901-4542-5	DF5-1822SCF
		AP105-DF5A-1822S	901-4546-6	DF5A-1822SCF
Manual	Manual crimping tool	DF5-1822/CR-HT	550-0264-0	DF5-1822SC
		DF5A-1822/CR-HT	550-0265-2	DF5A-1822SC
—	Extraction tool	RP13-PC-TP	150-0021-5	DF5/DF5A-1822SCF

Note 1 : If any trouble has been caused due to other tools, which are not designated by Hirose, Hirose won't guarantees any product.

Note 2 : For the crimping process, refer to "crimping quality standards" and "crimping condition".

◆Application Pattern



◆Precautions

1. Recommended soldering condition	Flow : 260℃ for 10 seconds Manual soldering : 350℃ for 3 seconds
2. Cleaning condition	Refer to the "Wire-to-Board Connector Use Hand book"
3. Connecting condition	Refer to the "Wire-to-Board Connector Use Hand book"
4. Cautions	■The color phase of this product may be slightly differ from that of the formed product according to the manufacturing lot, and consequent storage condition, however, the difference affects no performance.
5. Precautions	Refer to the "Wire-to-Board Connector Use Hand book"

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