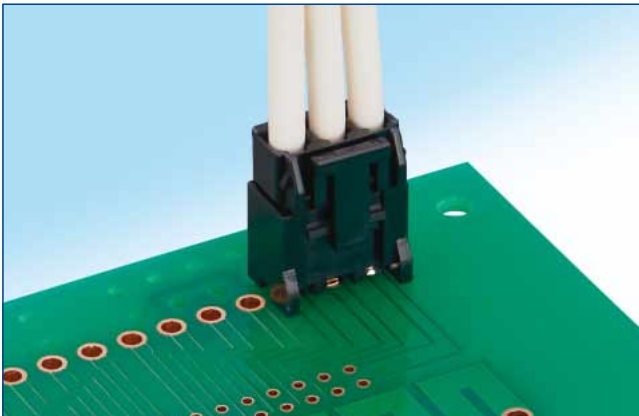


# 10 Amp, 3.96 mm pitch, Board to Wire Connector for Internal Power Supply

## DF63 Series



(UL, C-UL, TÜV, application pending)

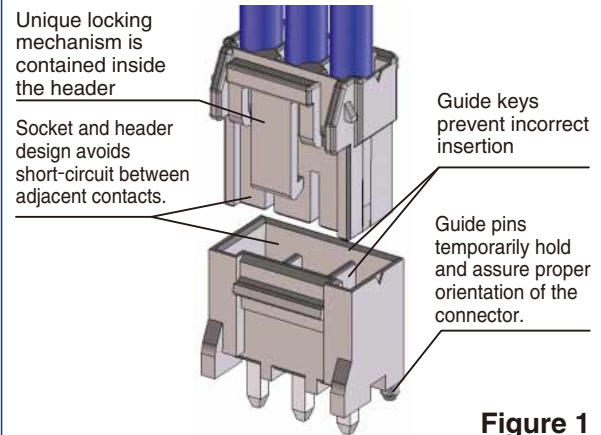


Figure 1

## ■ Features

### 1. Rated for up to 10 Amps max.

DF63 has the capacity to handle a maximum of 10 A when using 16 AWG wire

MAX 10A/pin	AWG # 16
7A	AWG # 18

### 2. A locking mechanism that ensures a secure and completed connection

The locking mechanism delivers a clear and tactile click the prevents incomplete mating (Please refer to Figure 2)

### 3. Prevents incomplete insertion of the crimp contact

A mechanism has been added to the structure to prevent incomplete insertion of the crimp contacts. (Please refer to Figure 3)

### 4. Prevents incorrect insertion

A mechanism has been added to prevent reverse insertion and incorrect insertion between different poles. (Please refer to Figure 4)

### 5. Reverse mounting prevention to PCB

The pin header is equipped with a guide post to prevent reverse insertion on the PCB. (Please refer to Figure 1)

### 6. Molded lance design

The lance is actually part of the housing instead of being a part of the terminal. This prevents tangled wires during assembly. The lance is a part of the housing instead of being a part of the terminal. This prevents the wires from becoming tangled during the assembly process.

### 7. Short-circuit prevention

The wall structure between the contacts helps to isolate the contacts and prevents short circuits between contacts. (Please refer to Figure 1)

### 8. Suitable for potting

Capable of being potted, up to 5 mm.

### 9. Solder Crack prevention

Glass-reinforced resin is used on the pin header to prevent solder cracks due to thermal contraction.

### \* Keying options were provided to prevent incorrect connections.

Keying options prevent incorrect connections due to the use of multiple connectors on the same board. When using identical pin counts, two versions are available with different keying options. (Please refer to Figure 4)

### \* Corresponds with 7.92 mm pitch

Also corresponds with 7.92 mm pitch with 2 or 3 pos. without pins  
(Note 1) \* means the product will be available upon request.  
Please contact our Sales Department.

### Lock structure

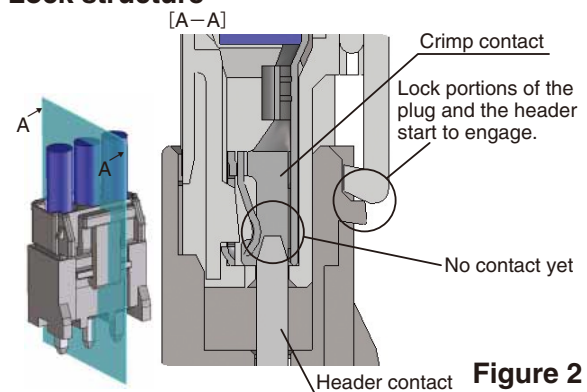


Figure 2

### Prevention of insufficient insertion of the crimp contact

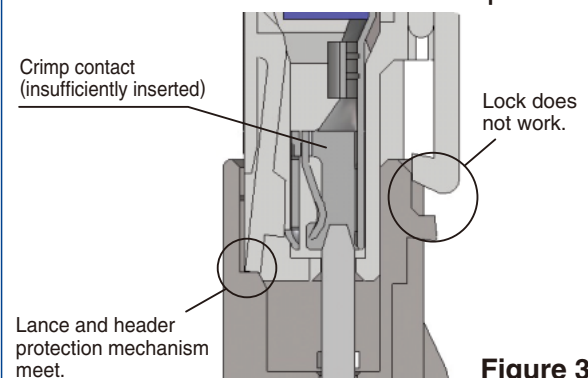


Figure 3

### Keying options are available to prevent incorrect connections due to the use of multiple connectors on the same board.

■ Standard type (color: black)



■ R-type (color: white)



Figure 4

## Product Specifications

Ratings	Current Rating	AWG#16 : 10 A/pin (Note 1) AWG#18 : 7 A/pin (Note 1)	Operating Temperature Range — 35~105°C (Note 2) Operating Humidity Range 20~80% (Note 3) Storage Temperature Range — 10~60°C (Note 4) Storage Humidity Range 40~70% (Note 4)
	Voltage Rating	AC/DC 630V	

Item	Specifications	Conditions
1. Insulation Resistance	No less than 1,000 MΩ	Measured at DC= 500V
2. Withstand Voltage	No flashover or breakdown	AC 1,500 V is applied for one minute.
3. Contact Resistance	No more than 10 mΩ	Measured at 1mA and no higher than 20 mV
4. Vibration Resistance	No electrical discontinuity of 1 μs or greater	Frequency 10-55 Hz, half amplitude 0.75 mm, 10 times in each of the three directions
5. Shock Resistance	No electrical discontinuity of 1 μs or greater	Accelerated velocity: 490 m/s <sup>2</sup> for 11 ms, half-sine wave in 3 directions, 3 times for each direction
6. Moisture-resistance	Contact resistance: no more than 20 mΩ; insulation resistance: no less than 500 MΩ	Temperature: 40 ±2°C; humidity: 90 to 95%, left as it is for 96 hours
7. Temperature cycles	Contact resistance: no more than 20 mΩ; insulation resistance: no less than 1,000 MΩ	-55°C: 30 minutes → 85°C: 30 minutes) 5 cycles
8. Durability	Contact resistance: no more than 20 mΩ	30 mating cycles
9. Solder heat resistance	The resin parts should withstand the temperature and resist melting.	Flow: 260°C, 10 sec Hand soldering: temperature of soldering iron at 350°C ±10°C for 5 seconds

(Note 1) This is the maximum current rating while all pins are powered or used as all power lines.

(Note 2) Includes the temperature rise of power lines.

(Note 3) Use without condensation on parts.

(Note 4) The storage condition refers to long-term storage of the product on the shelf before assembly. Please use the operating temperature for temporary storage such as pre-assembly and during shipping.

## Materials

Component	Part	Material	Finish	UL Specification
Header	Insulator	PBT (glass-reinforced)	Black	UL94V-0
	Contact	Brass	Tin-plating	—
Crimp socket	Insulator	PBT (glass-reinforced)	Black	UL94V-0
Crimp contact	Contact	Copper alloy	Tin-plating	—

## Product Number Structure

Refer to the nomenclature charts below for determining specific part number characteristics. Please select connectors listed in this catalog when placing orders.

### Connector

**DF 63 - \* P - 3.96 DSA**

① ② ③ ④ ⑤ ⑥

### Crimp contact

**DF 63 - 1618 SCF**

⑦ ⑧

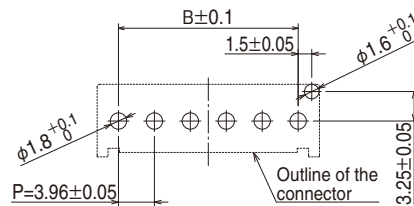
① Series Name : DF	⑥ Type of housing DSA : straight pin header DS : right angle pin header (under development) C : Crimp socket
② Series No. : 63	
③ Number of contacts : 1,2,3,4,5,6	
④ Connector type P : Pin header S : socket	⑦ Applicable wire size 1618 : AWG#16~18
⑤ Pitch : 3.96mm	⑧ Packaging styles SCF: Socket contact on reel

## ■Straight pin header

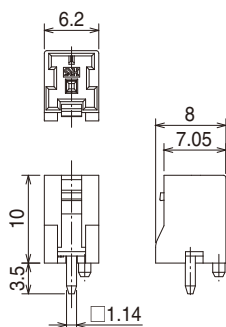


### ●PCB layout (Recommended circuit board thickness $t=1.6\pm0.1$ )

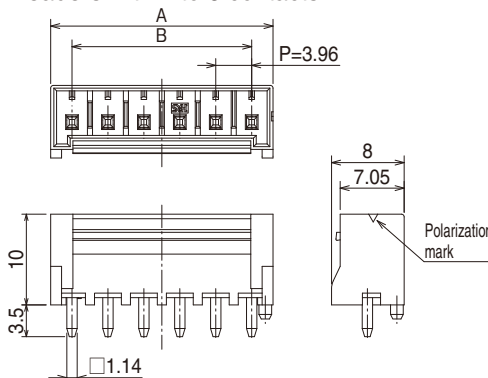
[1 to 6 pos.]



[Single contact]



Headers with 2 to 6 contacts



Unit: mm

Part Number	HRS No.	No. of Contacts	A	B
DF63-1P-3.96DSA	Under development	1	—	—
DF63-2P-3.96DSA	680-0504-4-00	2	8.66	3.96
DF63-3P-3.96DSA	680-0501-3-00	3	12.62	7.92
DF63-4P-3.96DSA	680-0505-4-00	4	16.58	11.88
DF63-5P-3.96DSA	Under development	5	20.54	15.84
DF63-6P-3.96DSA	Under development	6	24.50	19.80

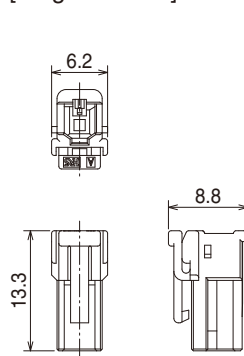
(Note 1) This product is sold in packages containing 100 pieces. Please place orders in full lot quantities.

## ■Crimp socket

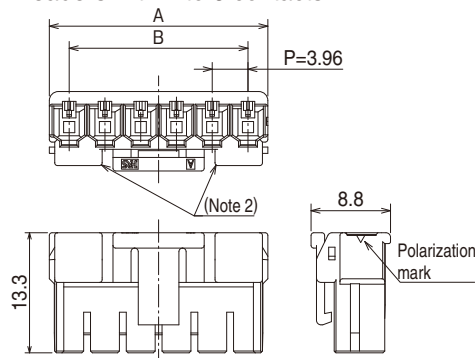


Shown with terminated wires inserted

[Single contact]



Headers with 2 to 6 contacts



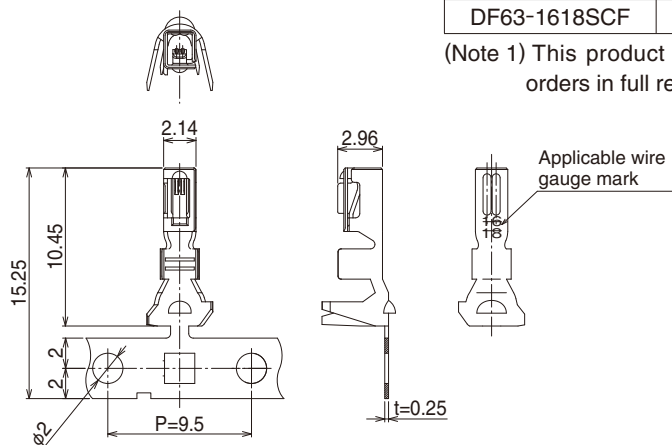
Unit: mm

Part Number	HRS No.	No. of Contacts	A	B
DF63-1S-3.96C	Under development	1	—	—
DF63-2S-3.96C	680-0509-5	2	8.36	3.96
DF63-3S-3.96C	680-0502-6	3	12.32	7.92
DF63-4S-3.96C	680-0510-4	4	16.28	11.88
DF63-5S-3.96C	Under development	5	20.24	15.84
DF63-6S-3.96C	Under development	6	24.20	19.80

(Note 1) This product is sold in packages containing 100 pieces. Please place orders in full lot quantities.

(Note 2) 1-and 2 contact position types have a differently shaped latch.

## ■Socket crimp contact



Part Number	HRS No.	Packing form	Quantity	Plating finish
DF63-1618SCF	680-0500-0	Reel contact	4000	Tin-plating

(Note 1) This product is sold by the reel containing 4,000 pieces. Please place orders in full reel quantities.

### ●Recommended wire

UL1007, 1015

### ●Applicable wire (Tinned, Annealed Copper Wire)

Conductor size (Core structure)	Jacket diameter
AWG16 (26 / $\phi$ 0.254mm)	UL1007 ( $\phi$ 2.5mm) UL1015 ( $\phi$ 3.2mm)
AWG18 (34 / $\phi$ 0.18mm)	UL1007 ( $\phi$ 2.1mm) UL1015 ( $\phi$ 2.9mm)

(Note 1) The applicable wires are tin-plated and annealed.

(Note 2) Please contact our Sales Department when using wires other than those listed.

## ◆Applicable crimping tool

Type	Part Number	HRS No.	Wire type	Applicable contact
Applicator	AP105-DF63-1618S-1	CL901-4634-1-00	UL1007(Note3)	DF63-1618SCF
	AP105-DF63-1618S-2	CL901-4635-4-00	UL1015(Note3)	
Hand tool	HT802/DF63-1618S-1	CL550-0411-2-00	UL1007(Note4, 5)	
	HT802/DF63-1618S-2	CL550-0413-8-00	UL1015(Note4, 6)	

(Note 1) Please conduct crimping work according to the "Crimping work standards" and "Crimping condition table".

(Note 2) We cannot advise on crimping problems caused by tools other than the ones specified.

(Note 3) Applicator dies can be switched to crimp the other wire size and type. The additional dies are sold separately.

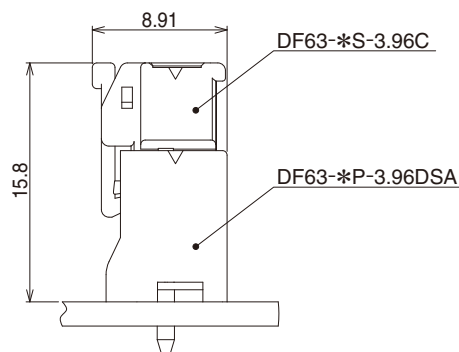
(Note 4) Hand tool dies cannot be switched.

(Note 5) The compatible wire is limited to UL1007, 16-18 AWG

(Note 6) The compatible wire is limited to UL1015, 16-18 AWG

## ◆Mated dimensions

### ●Board-to-Wire Connection using the straight pin header )



## ◆Precautions for use

1. The connector could be damaged if it is pulled out forcibly. When it is hard to pull out, push it in slightly first and then depress the lock and un-mate.
2. When thick, short sections of wire are used, the connector could be deformed due to the force of the wires' position. Route cables in such a way that they do not twist when being installed.
3. Make sure to turn off the power when mating or un-mating the connector.
4. Please do not touch any area around the contact part with your hand when the power is on; it could be very dangerous.
5. Please contact our Sales Department about the assembly procedure and the instruction manual.

## ◆Rated values

Please avoid using the connectors above the rated values. Also, do not insert or pull out energized or "live" wires.

## ◆Operating environment

Please contact us if you are designing this connector into environmental conditions where high and low temperatures are repeated.



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