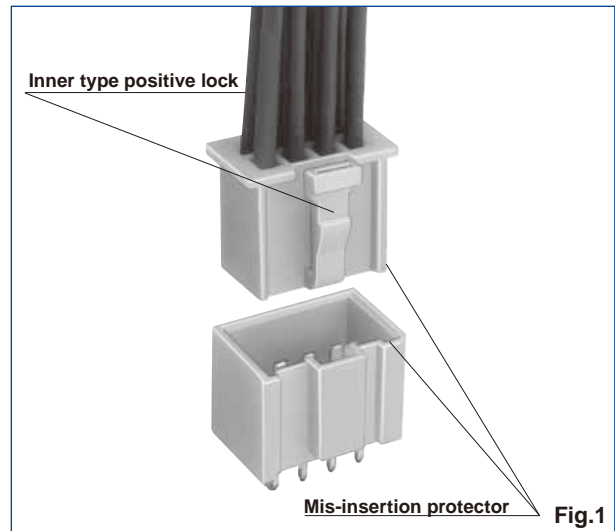
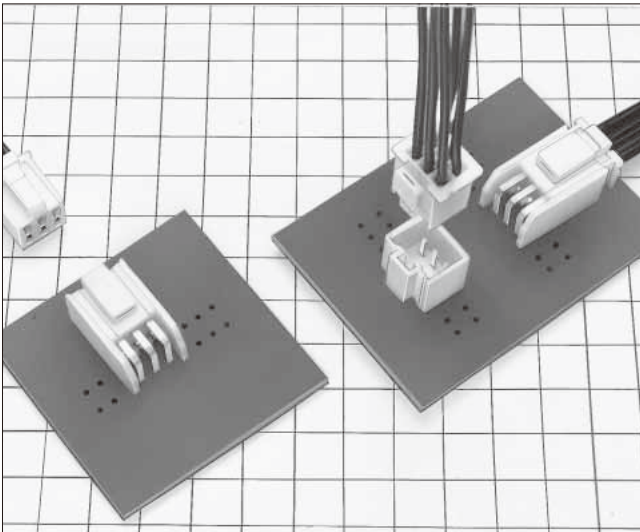


3.5mm Pitch Miniature Double Row Connector for Secondary Power (Compliant with UL/CSA Standard)

MDF6 Series



■ Features

1. Miniature type with 3.5mm pitch

A miniature, space-saving connector with a 3.5mm × 5mm pitch set in a double row alignment configuration.

2. 7A Current Capacity

Despite its small size as a power connector, the current capacity is rated at 7A when using 16 AWG wire.

3. Box Type Header

The box type header is highly resistant to twisting forces and is polarized to prevent mis-insertions.

4. Internal Latch Mechanism

The internal latch mechanism is designed to offer better protection from accidental un-matings and provides for a reliable and stable connection.

■ Applications

Secondary power units for various equipment

Product Specifications

| | | | | | |
|--------|----------------------------|------------|--|-----------------------------|----------------------|
| Rating | Current rating (Note 1) | Cable Size | 16 AWG : 7A 18 AWG : 6A 20 AWG : 5A 22 AWG : 4A | Operating Temperature Range | -30 to +85°C (Note2) |
| | Voltage rating | 300V AC | | Operating Humidity Range | 40 to 80% |
| | | | | Storage Temperature Range | -10 to +60°C (Note3) |
| | | | | Storage Humidity Range | 40 to 70% (Note3) |

| Standard Value Applicant to the UL CSA Safety Standard | | | |
|--|----------------|----------------------------|--|
| Rating | Current rating | Cable Size | 16 to 18 AWG : 6A 20 to 22 AWG : 4A |
| | Voltage rating | UL : 250V AC, CSA : 30V AC | |

■UL CSA Safety Standard File No.
UL : E52653
CSA : LR95109

| Item | Specifications | Conditions |
|--------------------------------------|--|--|
| 1. Insulation Resistance | 1,000MΩ min. | 500V DC |
| 2. Withstanding voltage | No flashover or insulation breakdown. | 1,500V AC/1 minute |
| 3. Contact Resistance | 30mΩ max. | 100mA |
| 4. Single Insertion/Extraction Force | 0.4N(40gf) min., 4.9N(500gf) max. | Measured with a steel pin with dimenions of 1.52 × 0.76 +/-0.002mm |
| 5. Vibration Resistance | No electrical discontinuity of 1μs or more | Frequency : 10 to 55Hz, single amplitude of 0.75mm, 2 hours in each of the 3 axis directions. |
| 6. Humidity (Steady state) | Contact resistance : 30mΩ max. Insulation resistance : 1,000MΩ min. | 96 hours at temperature of 40±2°C and humidity of 90% to 95% |
| 7. Temperature Cycle | Contact resistance : 30mΩ max. Insulation resistance : 1,000MΩ min. | (-55°C : 30 minutes → 5 to 35°C : 10 minutes 85°C : 30 minutes → 5 to 35°C : 10 minutes) 5 cycles |
| 8. Mating Cycles | Contact resistance : 30mΩ max. | Tin/tin-copper plated 30 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 |

Note 1 : The rated current will change depending on the cable size used. The header rating is only 7A.

Note 2 : Includes temperature rise caused by current flow.

Note 3 : The term "storage" refers to products stored for long period of time prior to mounting and use. Operating Temperature Range and Humidity range includes non-conducting condition of installed connectors in storage, shipment or during transportation.

Material / Finish

| Product | Part | Material | Finish | Remarks |
|-----------------------------|-----------|-----------------|--------------------|---------|
| Crimping Socket | Insulator | Polyamide resin | White (Natural) | UL94V-0 |
| Crimping Contact for Socket | Contact | Phosphor bronze | Tin plating | — |
| Pin Header | Insulator | Polyamide resin | White (Natural) | UL94V-0 |
| | Contact | Brass | Tin-copper plating | — |

Product Number Structure

Connector

MDF6 - * **DS** - **3.5** **C**

① ② ③ ④ ⑤

| | |
|-----------------------------|-----------------------------|
| ① Series Name : MDF 6 | ④ Contact Pitch : 3.5mm |
| ② No. of Contacts : 4 to 20 | ⑤ Contact type |
| ③ Connector Type | C : Crimping socket |
| DS : Double row socket | DSA : Straight pin header |
| DP : Double row pin header | DS : Right angle pin header |

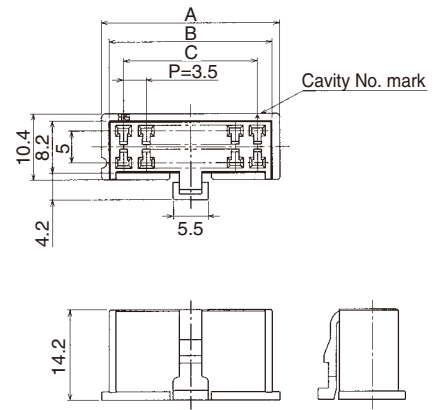
Contact

MDF6 - **1618** **SCF**

① ②

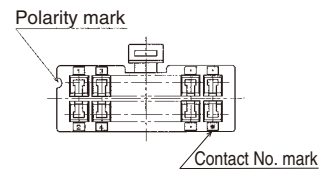
| | |
|-------------------------|----------------------------|
| ① Applicable Cable Size | ② Packaging Type |
| 1618 : 16 to 18 AWG | SCF : Socket Contact, Reel |
| 2022 : 20 to 22 AWG | SC : Socket Contact, Pack |

Double Row Socket

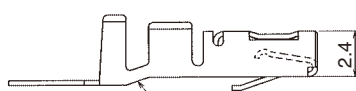
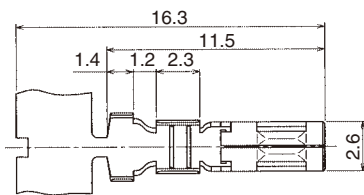


Unit : mm

| Part No. | HRS No. | No. of Contacts | Packing | A | B | C | RoHS |
|----------------|------------|-----------------|-------------|------|------|------|------|
| MDF6-4DS-3.5C | 547-0074-1 | 4 | 100pcs/pack | 10.5 | 8.1 | 3.5 | Yes |
| MDF6-6DS-3.5C | 547-0075-4 | 6 | | 14.0 | 11.6 | 7.0 | |
| MDF6-8DS-3.5C | 547-0076-7 | 8 | | 17.5 | 15.1 | 10.5 | |
| MDF6-10DS-3.5C | 547-0077-0 | 10 | | 21.0 | 18.6 | 14.0 | |
| MDF6-12DS-3.5C | 547-0078-2 | 12 | | 24.5 | 22.1 | 17.5 | |
| MDF6-14DS-3.5C | 547-0079-5 | 14 | | 28.0 | 25.6 | 21.0 | |
| MDF6-16DS-3.5C | 547-0080-4 | 16 | | 31.5 | 29.1 | 24.5 | |
| MDF6-18DS-3.5C | 547-0081-7 | 18 | | 35.0 | 32.6 | 28.0 | |
| MDF6-20DS-3.5C | 547-0082-0 | 20 | | 38.5 | 36.1 | 31.5 | |



Crimp Contact



Applicable cable indicated



Applicable Cable (Tin plating Annealed Copper Wire)

| Conductor Size (Wire construction) | Jacket Diameter |
|------------------------------------|-----------------|
| 16 AWG (26/0.254mm) | φ2.5 to φ2.0mm |
| 18 AWG (34/0.18mm) | |
| 20 AWG (21/0.18mm) | |
| 22 AWG (17/0.16mm) | φ1.9 to φ1.5mm |

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

Recommended Cable

UL1061, UL1007

Strip Length

2.7 to 4.4mm

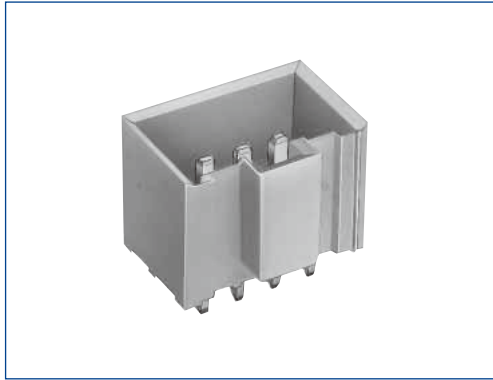
| Part No. | HRS No. | Applicable Cable | | Packaging Type | RoHS |
|--------------|------------|------------------|-----------------|----------------|------|
| | | AWG Size | Jacket Diameter | | |
| MDF6-1618SCF | 547-0070-0 | 16 to 18 | 2.5 to 2.0 | 5,000pcs/reel | Yes |
| MDF6-1618SC | 547-0071-3 | | | 100pcs/pack | |
| MDF6-2022SCF | 547-0072-6 | 20 to 22 | 1.9 to 1.5 | 5,000pcs/reel | |
| MDF6-2022SC | 547-0073-9 | | | 100pcs/pack | |

Applicable Crimping Tool

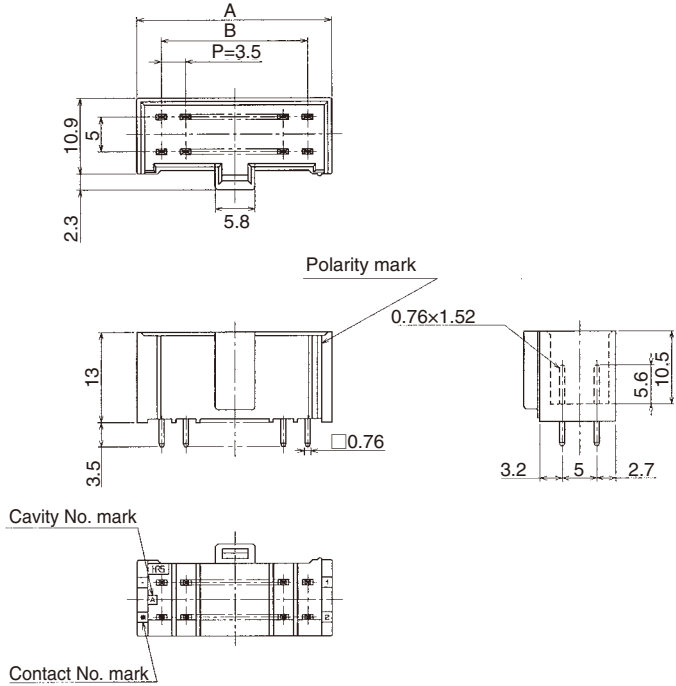
| Type | Part No. | HRS No. | Applicable Contact |
|----------------------|------------------|------------|--------------------|
| Main press unit | CM105 | 901-0005-4 | _____ |
| Applicator | AP105-MDF6-1618S | 901-4512-4 | MDF6-1618SCF |
| | AP105-MDF6-2022S | 901-4513-7 | MDF6-2022SCF |
| Manual Crimping Tool | MDF6-TA1618HC | 550-0203-5 | MDF6-1618SC |
| | MDF6-TA2022HC | 550-0204-8 | MDF6-2022SC |
| Extraction Tool | DF-C-PO(A) | 550-0170-8 | MDF6-***SC(F) |

Note : Hirose does not guarantee products if tools other than the ones designed or recommended by Hirose are used.

Double Row Pin Header: Straight Type



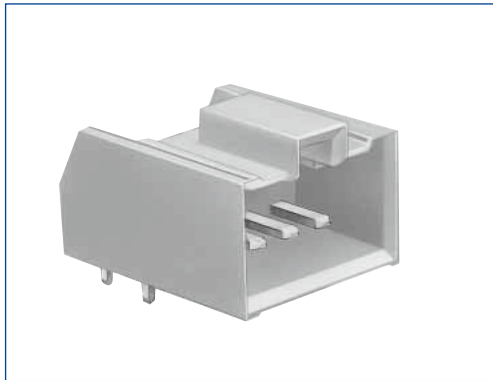
- Applicable Through Hole Diameter of PCB : $\phi 1.3^{+0.1}_{0}$
- Applicable Thickness of PCB : 1.6 ± 0.2



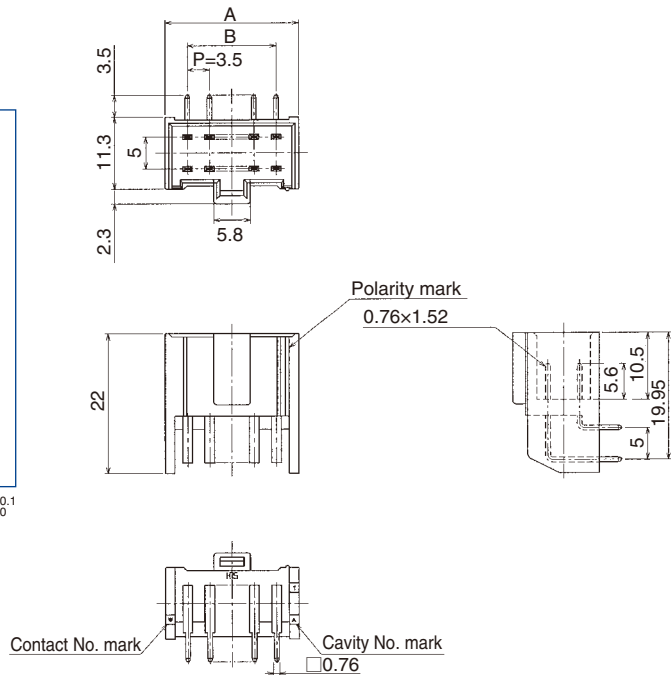
Unit : mm

| Part No. | HRS No. | No. of Contacts | Packing | A | B | RoHS |
|----------------------|---------------|-----------------|-------------|------|------|------|
| MDF6-4DP-3.5DSA(05) | 547-0083-2 05 | 4 | 100pcs/pack | 10.5 | 3.5 | Yes |
| MDF6-6DP-3.5DSA(05) | 547-0084-5 05 | 6 | | 14.0 | 7.0 | |
| MDF6-8DP-3.5DSA(05) | 547-0085-8 05 | 8 | | 17.5 | 10.5 | |
| MDF6-10DP-3.5DSA(05) | 547-0086-0 05 | 10 | | 21.0 | 14.0 | |
| MDF6-12DP-3.5DSA(05) | 547-0087-3 05 | 12 | | 24.5 | 17.5 | |
| MDF6-14DP-3.5DSA(05) | 547-0088-6 05 | 14 | | 28.0 | 21.0 | |
| MDF6-16DP-3.5DSA(05) | 547-0089-9 05 | 16 | | 31.5 | 24.5 | |
| MDF6-18DP-3.5DSA(05) | 547-0090-8 05 | 18 | | 35.0 | 28.0 | |
| MDF6-20DP-3.5DSA(05) | 547-0091-0 05 | 20 | | 38.5 | 31.5 | |

Double Row Pin Header: Right Angle Type



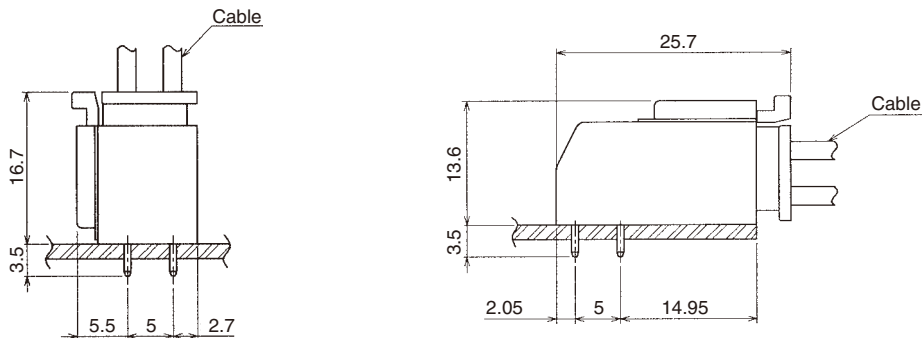
- Applicable Board Hole Diameter of PCB : $\phi 1.3^{+0.1}_{0}$
- Applicable Thickness of PCB : 1.6 ± 0.2



Unit : mm

| Part No. | HRS No. | No. of Contacts | Packing | A | B | RoHS |
|---------------------|---------------|-----------------|-------------|------|------|------|
| MDF6-4DP-3.5DS(05) | 547-0270-0 05 | 4 | 100pcs/pack | 10.5 | 3.5 | Yes |
| MDF6-6DP-3.5DS(05) | 547-0271-2 05 | 6 | | 14.0 | 7.0 | |
| MDF6-8DP-3.5DS(05) | 547-0272-5 05 | 8 | | 17.5 | 10.5 | |
| MDF6-10DP-3.5DS(05) | 547-0273-8 05 | 10 | | 21.0 | 14.0 | |

Application Pattern



Precautions

| | |
|------------------------------------|---|
| 1. Recommended Soldering Condition | <ul style="list-style-type: none"> ■Flow : 250°C for 10 seconds max. ■Manual soldering : 300°C for 3 seconds max. |
| 2. Cleaning Condition | Please Refer to the "Nylon Connector Use Hand book". |
| 3. Connection Condition | Please Refer to the "Nylon Connector Use Hand book". |
| 4. Cautions | <ul style="list-style-type: none"> ■The color phase of this product is slightly different from that of the formed product according to the manufacturing lot and future storage conditions, but the difference doesn't affect the performance. |
| 5. Precautions | <ul style="list-style-type: none"> ■Please Refer to the "Nylon Connector Use Hand book". ■Please Refer to the documents "Crimp Condition" and "Crimp Quality Standards" for the cable assembly procedures. |

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