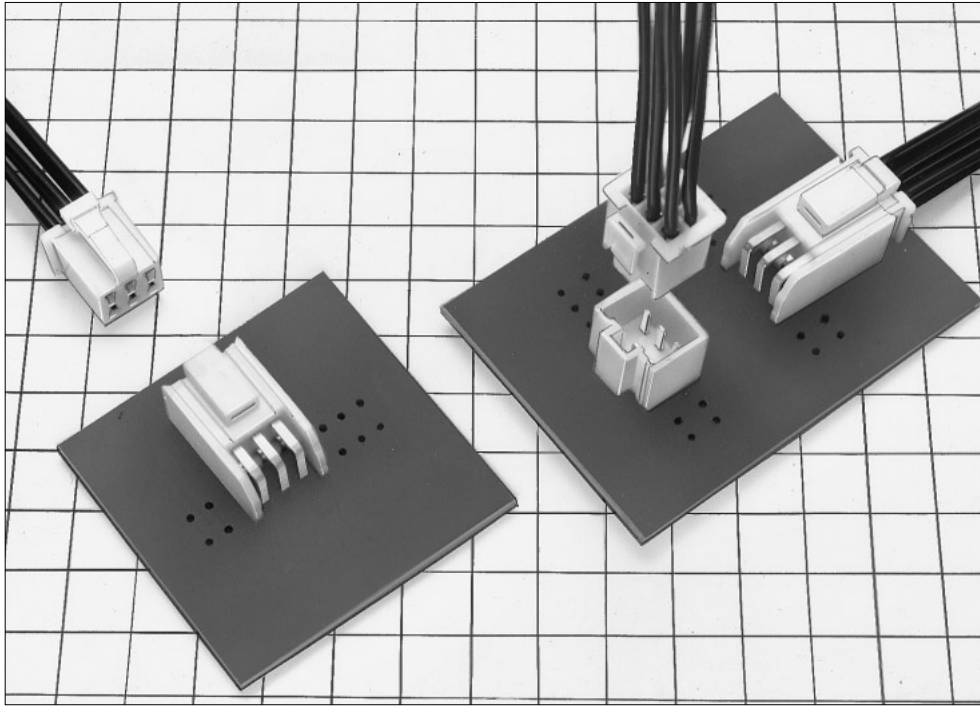


3.5mm Pitch Miniature Double Row Connector for Secondary Power (Product Compliant to UL/CSA Standard)

MDF6 Series



■ Features

1. Pitch 3.5mm Miniature Type

This is a space saving miniature connector where the adjacent contact pitch is set to 3.5mm and the opposite length is set to 5mm double-row alignment.

2. Current Capacity Secures 7A

Despite miniature power connector, the current capacity 7A is secured using the AWG No.16 cable.

3. Box Type Header

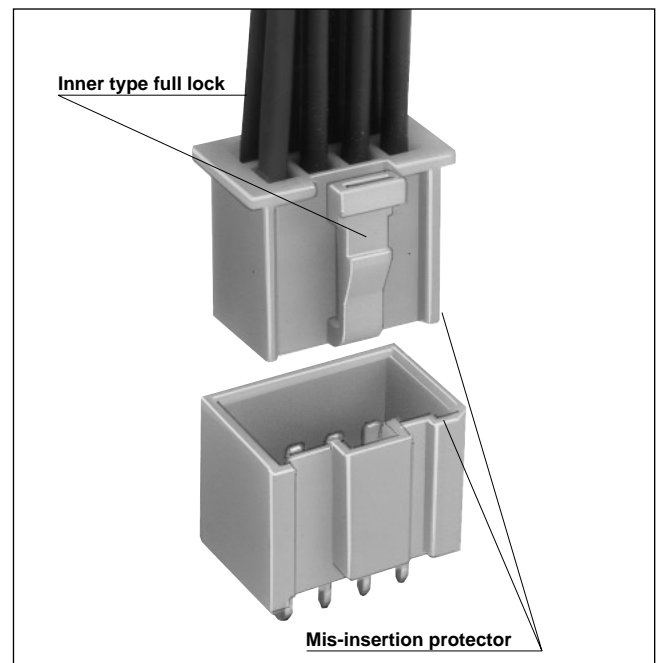
The box type header secures scoop-proof insertion, and perfectly prevents mis-insertion.

4. Inner Type Full Lock Adopted

Adopting the inner type full lock which the locking area is not exposed to the outside, the connector can be engaged under the high reliable and stable conditions.

■ Applications

Secondary power units for various equipment



■Product Specifications

| | | | | | |
|--------|------------------------|------------|-------------|-----------------------------|--------------------------|
| Rating | Current rating (Note1) | Cable Size | AWG#16 : 7A | Operating Temperature Range | -30 to +85°C (Note2) |
| | Voltage rating | | 300V AC | AWG#18 : 6A | Operating Moisture Range |
| | | | | | AWG#20 : 5A |
| | | | AWG#22 : 4A | Storage Moisture Range | 40 to 70% (Note3) |

| Standard Value Applicant to the UL CSA Safety Standard | | |
|--|----------------|------------|
| Rating | Current rating | Cable Size |
| | Voltage rating | |

■UL CSA Safety Standard File No.

UL :E52653

CSA :LR95109

| Item | Specification | Condition |
|-------------------------------------|--|--|
| 1. Insulation Resistance | 1000M ohms min | 500V DC |
| 2. Withstanding voltage | No flashover or insulation breakdown. | 1500V AC/1 minute |
| 3. Contact Resistance | 30m ohms max | 100mA |
| 4. Single Insertor/Extraction Force | 0.4N(40gf) min., 4.9N(500gf) max. | Measured at the steel pin with 1.52×0.76±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: 30m ohms max. Insulation resistance: 500M ohms min. | 96 hours at temperature of 40°C and humidity of 90% to 95% |
| 7. Temperature Cycle | Contact resistance: 30m ohms max. Insulation resistance: 1000M ohms 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: 30m ohms | 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 be changed according to applicable cable sizes. The header rating only is 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 covers non conducting condition of installed connectors in storage, shipment or during transportation.

■Material

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

■Ordering Information

●Connector

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

① ② ③ ④ ⑤

| | |
|--------------------------------|-------------------------|
| ① Series Name : MDF 6 | ④ Contact Pitch : 3.5mm |
| ② Number of Contacts : 4 to 20 | ⑤ Contact type |
| ③ Connector Type | C : Crimping socket |
| DS : Double row socket | DSA: Straight dip |
| DP : Double row pin header | DS : Right angle dip |

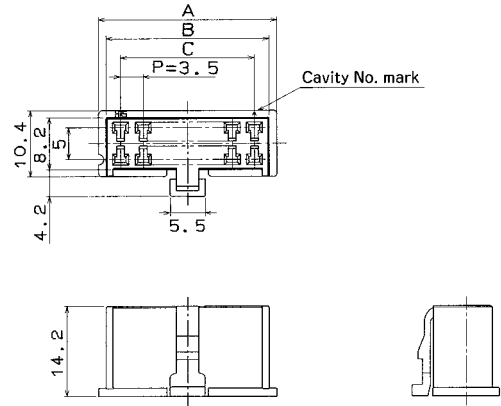
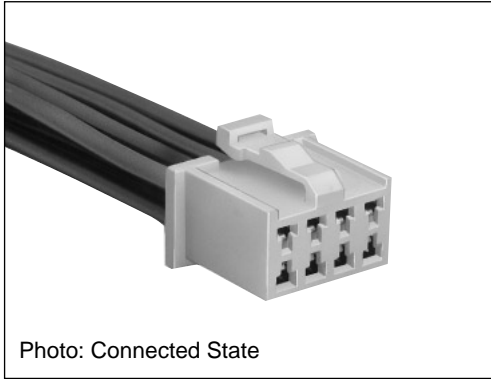
●Contact

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

① ②

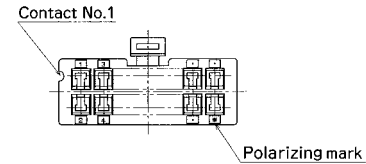
| | |
|-------------------------|----------------------------|
| ① Applicable Cable Size | ② Packaging Type |
| 1618 : AWG#16 to #18 | SCF : Socket Contact, Reel |
| 2022 : AWG#20 to #22 | SC : Socket Contact, Bag |

■Double Row Socket



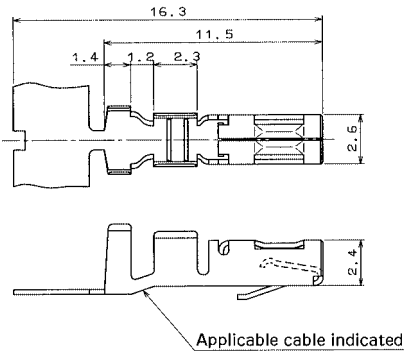
Unit: mm

| Part Number | CL No. | Number of Contacts | A | B | C |
|----------------|------------|--------------------|------|------|------|
| MDF6- 4DS-3.5C | 547-0074-1 | 4 | 10.5 | 8.1 | 3.5 |
| 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 |



Note: A packaging quantity is delivered by the bag unit (100 pcs.). If needed, please order the products per bag.

■Socket Crimping contact



●Applicable Cable (Tin plating Annealed Copper Wire)

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

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

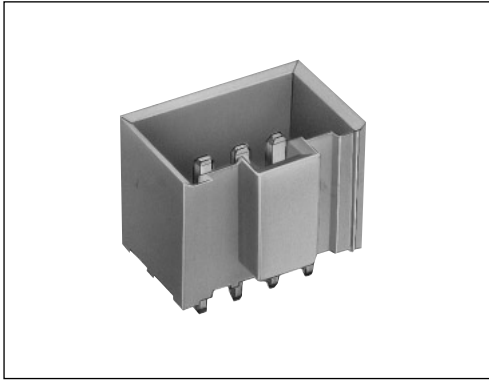
| Part Number | CL No. | Applicable Cable | | Packaging Type | Quantity |
|--------------|------------|------------------|-----------------|----------------|----------|
| | | AWG Size | Jacket Diameter | | |
| MDF6-1618SCF | 547-0070-0 | #16 to #18 | 2.5 to 2.0 | Reel | 5000 |
| MDF6-1618SC | 547-0071-3 | | | Bag | 100 |
| MDF6-2022SCF | 547-0072-6 | #20 to #22 | 1.9 to 1.5 | Reel | 5000 |
| MDF6-2022SC | 547-0073-9 | | | Bag | 100 |

◆Applicable Crimping Tool

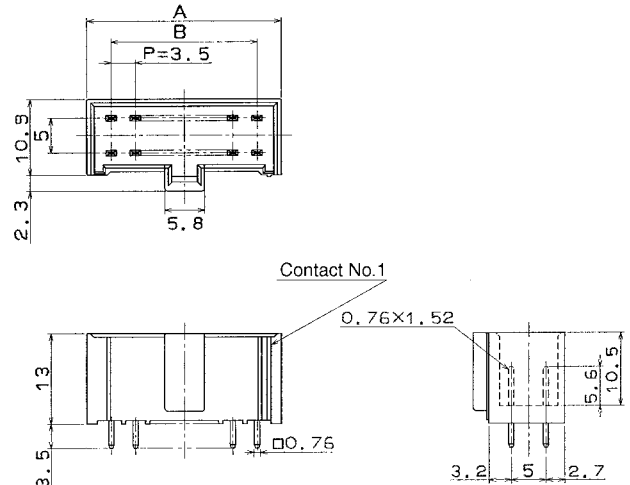
| Type | Part Number | CL No. | Applicable Contact |
|----------------------|------------------|------------|--------------------|
| Main press unit | CM105 | 901-0005-4 | ————— |
| Applicator | AP105-MDF6-1618S | 901-4512-4 | MDF6-1618SCF |
| | AP105-MDF6-2022S | 901-4513-7 | MDF6-2022SCF |
| Manual 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: If any trouble has occurred due to other tools, which are not designated by Hirose, Hirose won't guarantee any products.

Double Row Pin Header: Straight Type

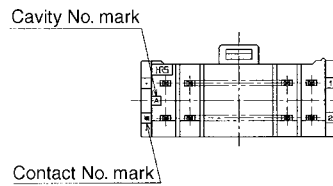


- Board Hole Diameter : $\phi 1.3^{+0.1}$
- Applicable Board Thickness : 1.6 ± 0.2



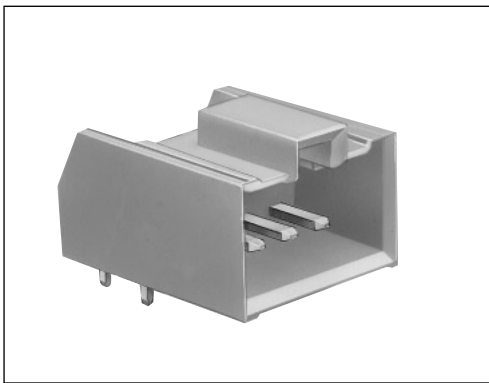
Unit: mm

| Part Number | CL No. | Number of Contacts | A | B |
|------------------|------------|--------------------|------|------|
| MDF6- 4DP-3.5DSA | 547-0083-2 | 4 | 10.5 | 3.5 |
| MDF6- 6DP-3.5DSA | 547-0084-5 | 6 | 14 | 7 |
| MDF6- 8DP-3.5DSA | 547-0085-8 | 8 | 17.5 | 10.5 |
| MDF6-10DP-3.5DSA | 547-0086-0 | 10 | 21 | 14 |
| MDF6-12DP-3.5DSA | 547-0087-3 | 12 | 24.5 | 17.5 |
| MDF6-14DP-3.5DSA | 547-0088-6 | 14 | 28 | 21 |
| MDF6-16DP-3.5DSA | 547-0089-9 | 16 | 31.5 | 24.5 |
| MDF6-18DP-3.5DSA | 547-0090-8 | 18 | 35 | 28 |
| MDF6-20DP-3.5DSA | 547-0091-0 | 20 | 38.5 | 31.5 |

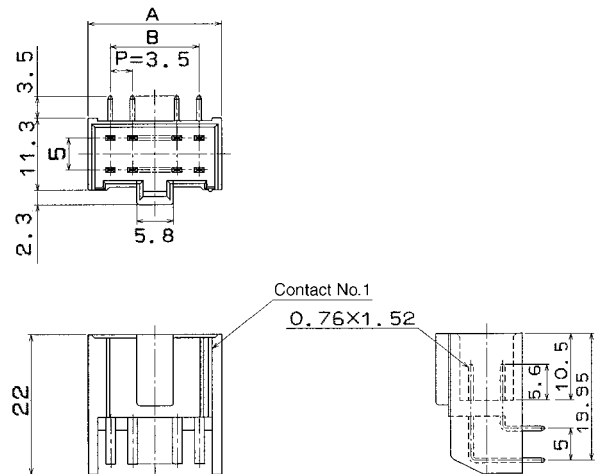


Note1: A packaging quantity is delivered by the bag unit (100 pcs.). If needed, please order the products per bag.

Double Row Pin Header: Right Angle Type

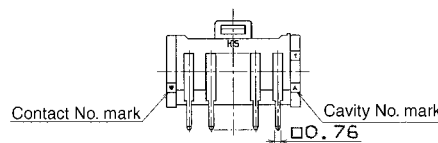


- Board Hole Diameter : $\phi 1.3^{+0.1}$
- Applicable Board Thickness : 1.6 ± 0.2



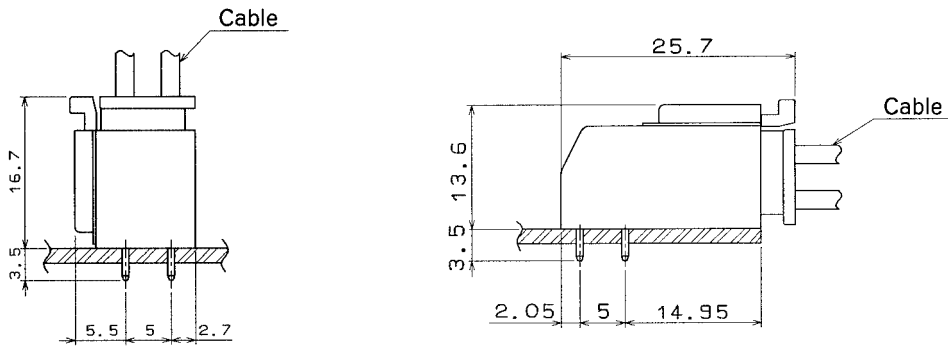
Unit: mm

| Part Number | CL No. | Number of Contacts | A | B |
|-----------------|------------|--------------------|------|------|
| MDF6- 4DP-3.5DS | 547-0270-0 | 4 | 10.5 | 3.5 |
| MDF6- 6DP-3.5DS | 547-0271-2 | 6 | 14 | 7 |
| MDF6- 8DP-3.5DS | 547-0272-5 | 8 | 17.5 | 10.5 |
| MDF6-10DP-3.5DS | 547-0273-8 | 10 | 21 | 14 |



Note1: A packaging quantity is delivered by the bag unit (100 pcs.). If needed, please order the products per bag.

◆ Application Pattern



◆ Precautions

| | |
|------------------------------------|---|
| 1. Recommended Soldering Condition | Flow: 250°C for 3 seconds Manual soldering: 290°C for 2 seconds |
| 2. Cleaning Condition | Refer to the "Nylon Connector Use Hand book". |
| 3. Connection Condition | Refer to the "Nylon Connector Use Hand book". |
| 4. Cautions | <p>■ 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.</p> |