

# Crimp Contact for Direct Joining Thick Wire PCB Thick Wire Crimp Contact for Direct Soldering to PCB

## MDF12/27 Series



### ■ Features

#### 1. Allows for direct soldering of wires to the PCB

The MDF12 and MDF27 eliminates the traditional crimp housing/receptacle combination by crimping the contact on to the wire and then directly soldering it to the PCB. This improves assembly times and connection reliability.

- Has temporary PCB hold retention ability which allows for easier soldering and helps to reduce labor costs.
- The contact crimps both around the center conductor and the jacket. The jacket crimp prevents breakage or damage to the center conductor at the solder joint by transferring stress to the jacket portion of the terminated wire.

#### 2. Vertical and right angle versions

The MDF12 contact is designed for when a vertical connection to the PCB is needed. Please use the MDF27 contact for applications that require a right angle orientation.

#### 3. Supports larger gauge wires and higher current ratings

The MDF12 and MDF27 can be used with wire diameters ranging from 22 to 14 AWG and provides for a current capacity of up to 15 A when using 14 AWG. Contacts are suitable for use with readily available UL1007 and UL1015 wire types.

### ■ Product specifications

Rated value	Rated current (Note 1)	14 AWG : 15A 16 AWG : 10A 18 AWG : 9A 20 AWG : 5A 22 AWG : 5A	Operating temperature range Operating humidity range	-35 to 85 °C (Note 2) 20 to 80 %
	Rated voltage	300V AC	Storage temperature range Storage humidity range	-10 to 60 °C (Note 3) 40 to 70 % (Note 3)

Items	Specifications	Conditions	
1. Crimp Contact resistance	15 mΩ min.	Measured at 100 mA	
2. Vibration resistance	No damaged or loosened parts.	Frequency: 10 to 55 Hz; half amplitude: 0.75 mm, in 3 directions for 2 hours	
3. Moisture resistance	No damaged or loosened parts.	Left for 96 hours at a temperature of 40 °C ±2 °C and with humidity of 90 to 95 %	
4. Temperature cycle	No damaged or loosened parts.	(-55 °C for 30 minutes → 5 to 35 °C for 10 minutes → 85 °C for 30 minutes → 5 to 35 °C for 10 minutes) in 5 cycles for 5 cycles	
5. Solder heat resistance	No loosening affecting the performance.	Flow: 250 °C for 10 seconds	Hand soldering: soldering iron temperature 300 °C for 3 seconds

Note 1: The rated current differs depending on the wire size used.

Note 2: Includes the temperature rise when energized.

Note 3: Storage described here indicates the long-term-storage of unused items before they are mounted on PCB. Operating humidity range applies to the non-energized state after the items are mounted on PCB.

### ■ Material

Product	Component	Material	Finish
Crimping contact	Contact	Brass	Tin plating

Note: Our tin plating process helps prevent whiskering.

## Product Number Structure

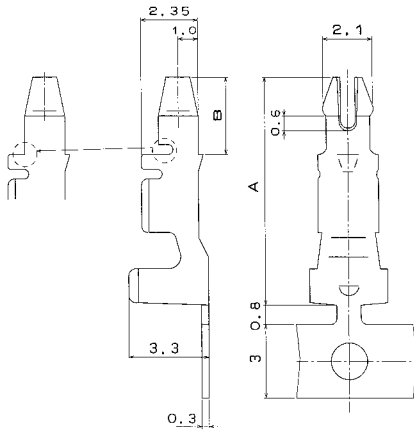
### ● Contact

# MDF 12 A - 1822 PCF

①      ②      ③      ④      ⑤

① Series Name: MDF	④ Applicable wire size 1822: 18 to 22 AWG 1416: 14 to 16 AWG
② Series No. 12: Right angle type 27: Coplanar type	
③ Jacket outer diameter type None: For jacket diameters from 1.5 to 2.2 mm (UL1007-equivalent) A : For jacket diameters from 2.1 to 2.9 mm (UL1015-equivalent)	⑤ State type/packaging type PCF: plug contact/reel PC : plug contact/loose pieces

## ◆ MDF12 Series

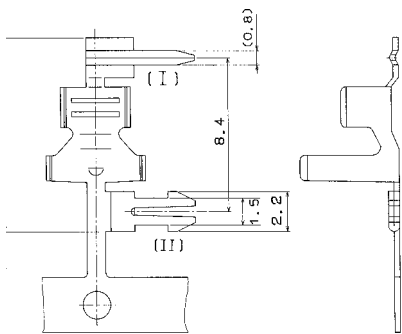


Part No.	HRS No.	Applicable wire		Type	A dimension	B dimension
		AWG	Jacket outer diameter			
MDF12-1822PCF	547-0196-9	18 to 22 AWG	1.5mm to 2.2mm	5,000 pcs/reel	9.4	3.2
MDF12-1822PC	547-0221-4			100 pcs/pack		
MDF12A-1822PCF	547-0208-6		2.1mm to 2.9mm	3,500 pcs/reel		
MDF12A-1822PC	547-0222-7	14 to 16 AWG	2.4mm to 2.7mm	2,500 pcs/reel	11.2	3.6
MDF12-1416PCF	547-0209-9			100 pcs/pack		
MDF12-1416PC	—		2.6mm to 3.6mm	2,500 pcs/reel		
MDF12A-1416PCF	547-0210-8			100 pcs/pack		
MDF12A-1416PC	547-0224-2	—	—			

Note: Dimensions for the 14 to 16 AWG MDF12 contact is shown above.

- Recommended through-hole diameter on PCB 1.8<sup>+0.1</sup>
- Applicable thickness of the PCB 1.6

## ◆ MDF27 Series



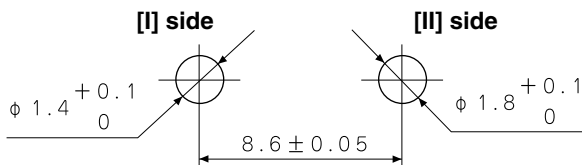
Part No.	HRS No.	Applicable wire		Type
		AWG	Jacket outer diameter	
MDF27-1822PCF	547-0286-0	18 to 22 AWG	1.5mm to 2.2mm	5,000 pcs/reel
MDF27-1822PC	—			100 pcs/pack
MDF27A-1822PCF	—		2.1mm to 2.9mm	3,500 pcs/reel
MDF27A-1822PC	—	14 to 16 AWG	2.4mm to 2.7mm	100 pcs/pack
MDF27-1416PCF	—			2,500 pcs/reel
MDF27-1416PC	—		2.6mm to 3.6mm	100 pcs/pack
MDF27A-1416PCF	547-0296-3			2,500 pcs/reel
MDF27A-1416PC	—	—	100 pcs/pack	

- Applicable thickness of the PCB is 1.6 mm

● Recommended through-hole diameter on PCB 1.8<sup>+0.1</sup>

● Applicable wire size (tin-plated annealed copper wires)

● Wire strip length 3.3 to 4.2 mm



Conductor size (construction)
14 AWG (41/0.25 mm)
16 AWG (26/0.254mm)
18 AWG (34/0.18mm)
20 AWG (21/0.18mm)
22 AWG (17/0.16mm)

Note: Please contact our Sales Dept. when using wires other than those noted above.

## ◆ Applicable crimping tools

Type	Part No.	HRS No.	Applicable contacts
Applicator	AP105-MDF12-1822P	901-4514-0	MDF12-1822PCF
	AP105-MDF12A-1822P	901-4515-2	MDF12A-1822PCF
	AP105-MDF12-1416P	—————	MDF12-1416PCF
	AP105-MDF12A-1416P	901-4533-4	MDF12A-1416PCF
	AP105-MDF27-1822P	—————	MDF27-1822PCF
	AP105-MDF27A-1822P	—————	MDF27A-1822PCF
	AP105-MDF27-1416P	—————	MDF27-1416PCF
	AP105-MDF27A-1416P	—————	MDF27A-1416PCF
Press body	CM-105	901-0005-4	—————
	MDF12-TA1822HC	550-0238-0	MDF12-1822PC
	MDF12A-TA1822HC	550-0239-2	MDF12A-1822PC
	MDF12-TA1416HC	—————	MDF12-1416PC
Manual crimping tools	MDF12A-TA1416HC	550-0237-7	MDF12A-1416PC
	HT104/MDF27-1822P	—————	MDF27-1822PC
	MDF27A-TA1822HC	—————	MDF27A-1822PC
	MDF27-TA1416HC	—————	MDF27-1416PC
	MDF27A-TA1416HC	—————	MDF27A-1416PC

Note 1: Issues caused by use of tools other than the ones designed or recommended by Hirose are not covered by warranty.

Note 2: Please contact our Sales Dept. When you are placing an order for products listed above that show no HRS Part Number.

## ◆ Usage recommendations

1. Recommended soldering conditions	<ul style="list-style-type: none"> <li>■ Flow conditions using an automatic soldering device: Soldering temperature: 250 ±5°C; soldering time: within 3 seconds</li> <li>■ Hand soldering conditions: Soldering iron temperature: 290 ±10°C; soldering time: within 3 seconds</li> <li>■ After soldering, be sure not to disturb the connectors before they have returned to their normal temperature because the coating presser part is likely to be loosened when a load is applied on the cables while the connectors and the cables are still heated.</li> </ul>
2. Cleaning conditions	<p>Please refer to the "Handbook on the Use of Nylon Connectors".</p> <p>Do not use solvents which will impair the cable jacket, such as trichloroethane. Additionally, avoid heating cleaning using solvents. Additionally, avoid using heated cleaning solvents.</p>
3. Wire connecting conditions	<p>Please refer to the "Handbook on the Use of Nylon Connectors".</p>

**USA:**

**HIROSE ELECTRIC (U.S.A.), INC. HEADQUARTERS**  
2688 Westhills Court, Simi Valley, CA 93065-6235  
Phone : +1-805-522-7958  
Fax : +1-805-522-3217  
<http://www.hirose.com/us/>

**USA:**

**HIROSE ELECTRIC (U.S.A.), INC. SAN JOSE OFFICE**  
3255 Scott Boulevard, Building 7, Suite 101  
Santa Clara, CA 95054  
Phone : +1-408-253-9640  
Fax : +1-408-253-9641  
<http://www.hirose.com/us/>

**USA:**

**HIROSE ELECTRIC (U.S.A.), INC. CHICAGO OFFICE**  
580 Waters Edge Lane, Suite 205 Lombard IL  
60148  
Phone : +1-630-282-6701  
Mail : [inquiries@hirose.com](mailto:inquiries@hirose.com)  
<http://www.hirose.com/us/>

**USA:**

**HIROSE ELECTRIC (U.S.A.), INC. DETROIT OFFICE (AUTOMOTIVE)**  
17197 N. Laurel Park Drive, Suite 253, Livonia,  
MI 48152  
Phone : +1-734-542-9963  
Fax : +1-734-542-9964  
<http://www.hirose.com/us/>

**THE NETHERLANDS:**

**HIROSE ELECTRIC EUROPE B.V.**  
Hogehillweg #8 1101 CC Amsterdam Z-0  
Phone : +31-20-6557460  
Fax : +31-20-6557469  
<http://www.hirose.com/eu/>

**GERMANY:**

**HIROSE ELECTRIC EUROPE B.V. GERMAN BRANCH**  
Herzog-Carl-Strasse 4 D-73760 Ostfildern  
(Scharnhäuser Park)  
Phone : +49-711-4560-02-1  
Fax : +49-711-4560-02-299  
<http://www.hirose.com/eu/>

**GERMANY:**

**HIROSE ELECTRIC EUROPE B.V. NUERNBERG OFFICE**  
Muggenhofer Str. 136 90429 Nuernberg  
Phone : +49-911 32 68 89 63  
Fax : +49-911 32 68 89 69  
<http://www.hirose.com/eu/>

**GERMANY:**

**HIROSE ELECTRIC EUROPE B.V. HANOVER OFFICE**  
Bayernstr. 3, Haus C 30855 Langenhagen, Germany  
Phone : +49-511 97 82 61 30  
Fax : +49-511 97 82 61 35  
<http://www.hirose.com/eu/>

**FRANCE:**

**HIROSE ELECTRIC EUROPE B.V. PARIS OFFICE**  
Regus La Garenne Colombes, Place de La Belgique,  
71 Boulevard National La Garenne Colombes, 92250, France  
Phone : +33 (0) 1 7082 3170  
Fax : +33 (1) 7082 3101  
<http://www.hirose.com/eu/>

**UNITED KINGDOM:**

**HIROSE ELECTRIC EUROPE BV (UK BRANCH)**  
4 Newton Court, Kelvin Drive, Knowlhill,  
Milton Keynes, MK5 8NH  
Phone : +44-1908 202050  
Fax : +44-1908 202058  
<http://www.hirose.com/eu/>

**CHINA:**

**HIROSE ELECTRIC (SHANGHAI) CO., LTD.**  
1601, Henderson Metropolitan, NO.300, East Nanjing  
Road, Huangpu District, Shanghai, China 200001  
Phone : +86-21-6391-3355  
Fax : +86-21-6391-3335  
<http://www.hirose.com/cn/>

**CHINA:**

**HIROSE ELECTRIC (SHANGHAI) CO.,LTD. BEIJING BRANCH**  
A1001, Ocean International Center, Building 56# East 4th  
Ring Middle Road, ChaoYang District, Beijing, 100025  
Phone : +86-10-5165-9332  
Fax : +86-10-5908-1381  
<http://www.hirose.com/cn/>

**CHINA:**

**HIROSE ELECTRIC TECHNOLOGIES (SHENZHEN) CO., LTD.**  
Room 09-13, 19/F, Office Tower Shun Hing Square, Di Wang Commercial Centre,  
5002 Shen Nan Dong Road, Shenzhen City, Guangdong Province, 518008  
Phone : +86-755-8207-0851  
Fax : +86-755-8207-0873  
<http://www.hirose.com/cn/>

**HONG KONG:**

**HIROSE ELECTRIC HONGKONG TRADING CO., LTD.**  
Room 1001, West Wing, Tsim Sha Tsui Centre, 66  
Mody Road, Tsim Sha Tsui East, Kowloon, Hong Kong  
Phone : +852-2803-5338  
Fax : +852-2591-6560  
<http://www.hirose.com/hk/>

**TAIWAN:**

**HIROSE ELECTRIC TAIWAN CO., LTD.**  
103 8F, No.87, Zhengzhou Rd., Taipei  
Phone : +886-2-2555-7377  
Fax : +886-2-2555-7350  
<http://www.hirose.com/tw/>

**KOREA:**

**HIROSE KOREA CO., LTD.**  
250, Huimanggongwon-ro, Siheung-si,  
Gyeonggi-do, Korea, 429-849  
Phone : +82-31-496-7000,7124  
Fax : +82-31-496-7100  
<http://www.hirose.co.kr/>

**SINGAPORE:**

**HIROSE ELECTRIC SINGAPORE PTE. LTD.**  
10 Anson Road #26-16, International Plaza  
079903, Singapore  
Phone : +65-6324-6113  
Fax : +65-6324-6123  
<http://www.hirose.com/sg/>

**INDIA:**

**HIROSE ELECTRIC SINGAPORE PTE. LTD. DELHI LIAISON OFFICE**  
Office NO.519, Regus-Green Boulevard, Level5, Tower C,  
Sec62, Plot B-9A, Block B, Noida, 201301, Uttar Pradesh, India  
Phone : +91-12-660-8018  
Fax : +91-120-4804949  
<http://www.hirose.com/sg/>

**INDIA:**

**HIROSE ELECTRIC SINGAPORE PTE. LTD. BANGALORE LIAISON OFFICE**  
Unit No-403, 4th Floor, No-84, Barton Centre, Mahatma  
Gandhi (MG) Road, Bangalore 560 001, Karnataka, India  
Phone : +91-80-4120 1907  
Fax : +91-80-4120 9908  
<http://www.hirose.com/sg/>

**MALAYSIA:**

**HIROSE ELECTRIC SINGAPORE PTE. LTD.**  
1-10-07, Suntech @ Penang Cybercity (1164), Lintang  
Mayang Pasir 3,11950, Bayan Baru, Penang, Malaysia.  
Phone : +604-619-2564  
Fax : +604-619-2574  
<http://www.hirose.com/sg/>

**THAILAND:**

**HIROSE ELECTRIC SINGAPORE PTE. LTD. BANGKOK OFFICE (REPRESENTATIVE OFFICE)**  
Unit 4703, 47th FL., 1 Empire Tower, South Sathorn  
Road, Yannawa, Sathorn, Bangkok 10120 Thailand  
Phone : +66-2-686-1255  
Fax : +66-2-686-3433  
<http://www.hirose.com/sg/>

**HIROSE ELECTRIC CO.,LTD.**

2-6-3, Nakagawa Chuoh, Tsuzuki-Ku, Yokohama-Shi 224-8540, JAPAN  
TEL: +81-45-620-3526 Fax: +81-45-591-3726  
<http://www.hirose.com>  
<http://www.hirose-connectors.com>