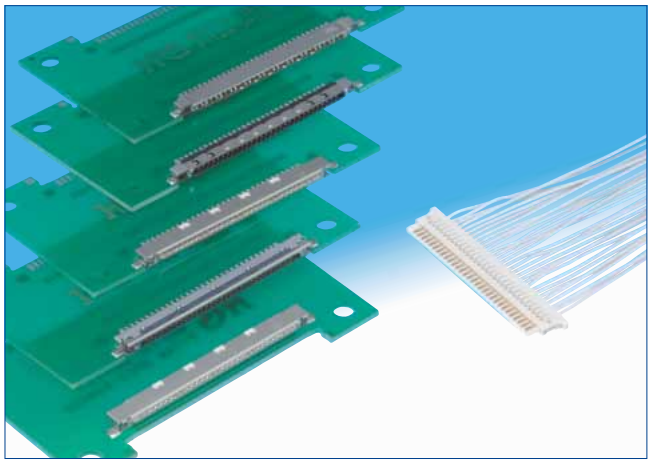
1.0mm Pitch, Board-to-Wire LCD Interface Connectors

MDF76 Series



■Features

1. High-speed data transfer

Ground contacts opposite the signal contacts (Receptacle) provide superior impedance matching.

2. EMI protection

Metal shell provides shielding and ground connections.

3. Increased Plug / Receptacle retention force

Unique configuration of the receptacle ground contacts mating with the corresponding plug increases the retention force between them.
(MDF76-30P-1 Plug mated with MDF76KBW or MDF76LBRW Receptacles.)

4. Incorrect insertion prevention

Built-in polarizing features prevent reverse insertion of the plug in the receptacle.

5. High board retention force

Metal shell is soldered directly to the PC board.

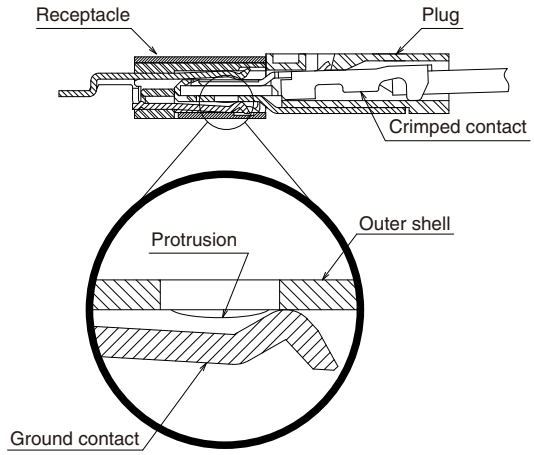
6. RoHS compliant

All components and materials comply with the requirements of EU Directive 2002/95/EC.

■Applications

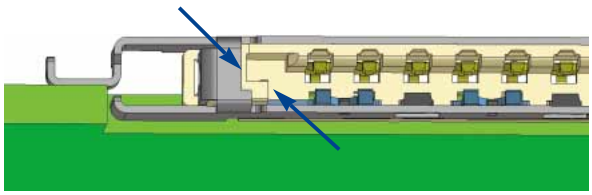
Notebook computers, desktop computers, Liquid Crystal Panels, LCD monitors and other devices requiring discrete wire connections with a low-profile high performance connectors.

■Increased Plug / Receptacle retention force

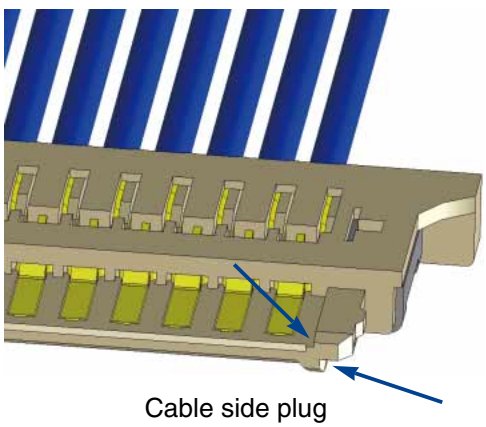


■Incorrect insertion prevention

A vertically asymmetrical key form prevents reverse insertion.



Board side receptacle



Cable side plug

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■Product Specifications

Ratings	Current rating (Note 1)	Wire size	28 to 30 AWG : 1.0A 32 AWG : 0.8A 36 AWG : 0.5A	Operating temperature range Operating humidity range	-40℃ to +85℃ (Note 2) RH 20% to 80%
	Voltage rating		200V AC	Storage temperature range Storage humidity range	-10℃ to +60℃ (Note 3) RH 40% to 70% (Note 3)

Item	Specification	Conditions
1. Insulation resistance	100MΩ min.	100V DC
2. Withstanding voltage	No flashover or insulation breakdown	500V AC / 1minute
3. Contact resistance	40mΩ max.	20mV max., at 1 mA.
4. Durability	Contact resistance : 80mΩ max. No deformation of components affecting performance.	50 cycles
5. Vibration	No electrical discontinuity of 1μs or longer No damage, cracks or parts dislocation.	Frequency : 10 to 55Hz, single amplitude of 0.75mm, 10 cycles in each of the 3 axial directions
6. Shock	No electrical discontinuity of 1μs or longer No damage, cracks or parts dislocation.	Acceleration of 490m/s², 11ms duration, sine half-wave, 3 cycles in each of the 3 axis
7. Humidity	Contact resistance : 80mΩ max., Insulation resistance : 50MΩ min.	96 hours at 60 ±2℃, and humidity of 90% to 95%
8. Temperature cycle	Contact resistance : 80mΩ max., Insulation resistance : 50MΩ min. No damage, cracks or parts dislocation.	-55℃ → 5 to 35℃ → 85℃ → 5 to 35℃ Times : 30 min.→ 2 min. to 3 min. → 30 min. → 2min. to 3 min. 5 cycle
9. Resistance to soldering heat	No deformation of components affecting performance.	Reflow : At the recommended temperature profile Manual soldering : 300℃ for 3 seconds

Note 1 : The current rating will differ depending on the wire size used.
Note 2 : Includes temperature rise caused by current flow.
Note 3 : The term "storage" refers to products stored for a long period prior to mounting and use.
The operating temperature and humidity range covers the non-conducting condition of connectors after board mounting and the temporary storage conditions of transportation, etc.

■Material / Finish

Plug

Part	Material	Finish	Remarks
Insulator	Polyamide	Color : Beige	UL94V-0
Ground plate	Stainless steel	Tin plated	——
Crimp contact	Phosphor bronze	Gold plated	——

Receptacle

Part	Material	Finish	Remarks
Insulator	Polyamide or LCP (Note 4)	Color : Beige or black (Note 5)	UL94V-0
Contacts	Phosphor bronze	Gold plated	——
Ground contact	Stainless steel	Tin plated	——
Shell		Tin plated or gold plated (Note 6)	UL94V-0

Note 4 : Low profile receptacles MDF76KBW and MDF76LBRW are polyamide.
High profile receptacles MDF76TW, and MDF76GW are LCP.
Note 5 : Low profile receptacles MDF76KBW, MDF76TW, and MDF76GW are beige.
Reverse mounting MDF76LBRW is black.
Note 6 : Low profile receptacles MDF76KBW and MDF76LBRW have tin plating on the solder leads.
High profile receptacles MDF76TW and MDF76GW have gold plating on the solder leads.

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■Product Number Structure

Refer to the chart below when determining the product specifications from the product number.
Please select from the product numbers listed in this catalog when placing orders.

●Connector

MDF76 ❶ # ❷ – ✱ ❸ P ❹ – 1 ❺ C ❻

❶ Series Name : MDF76	❸ Number of contacts : 30
❷ Form type Plug Blank : Standard	❹ Connector type P : Plug S : Receptalce
Receptacle (Low profile) KBW : Standard, mid-mount LBRW : Reverse, mid-mount	❺ Contact pitch : 1mm
Receptacle (High profile) TW : Standard, mid-mount GW : Standard, top board	❻ Housing type C : Crimp H : Right angle SMT

●Contacts

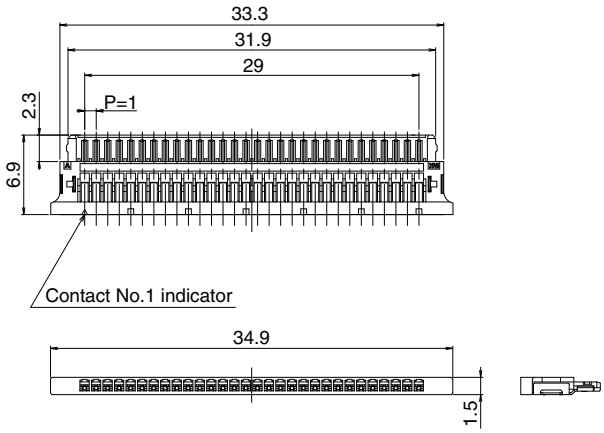
MDF76 – 2836 ❶ PCF ❷ A ❸

❶ Applicable conductor 2836 : 28 to 36 AWG	❸ Plating A : Gold plated
❷ Packaging PCF : Male crimp contact / reel	

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■Plug (Discrete cable)



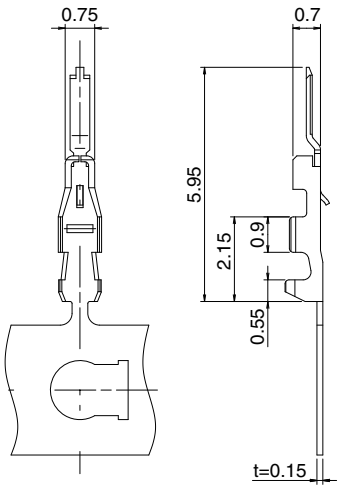


Shown terminated
・Supplied in bag. (100 pieces/bag)
・Contacts supplied separate

All dimensions : mm

Part No.	HRS No.	No. of contacts	Insulator Color
MDF76-30P-1C	547-0918-1	30	Beige

■Crimp contact



Part No.	HRS No.	Packaging	Quantity	Finish
MDF76-2836PCFA(41)	547-0919-4 41	Reel	1 Reel / 30,000	Gold plated

●Applicable wire (Tin plated annealed copper wire)

Wire size (Stranded wire conductor)	Jacket diameter
28 AWG (7 / 0.127mm)	0.6mm max.
30 AWG (7 / 0.10mm)	
32 AWG (7 / 0.08mm)	
36 AWG (7 / 0.05mm)	0.4mm max.

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

●Tools

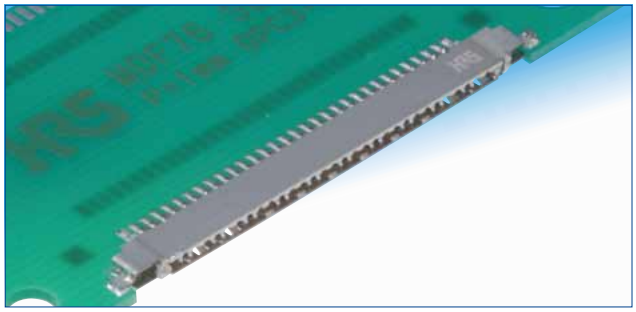
Type	Part No.	HRS No.
Applicator	AP105-MDF76-2836P	901-4613-1
Press	CM-105C	901-0001-0
Extraction tool	DF-C-PO(B)	550-0179-2

All dimensions : mm

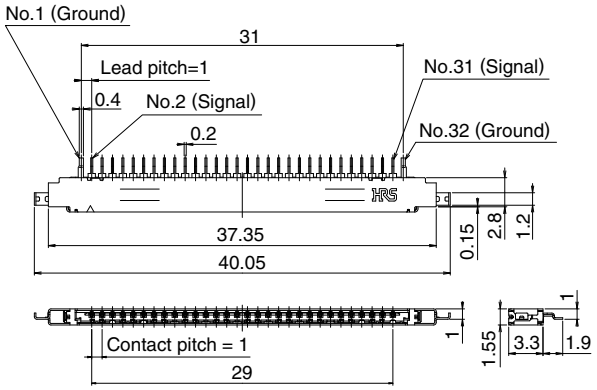
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■Receptacles (Low profile)

●Right angle, Standard, mid-mount, SMT



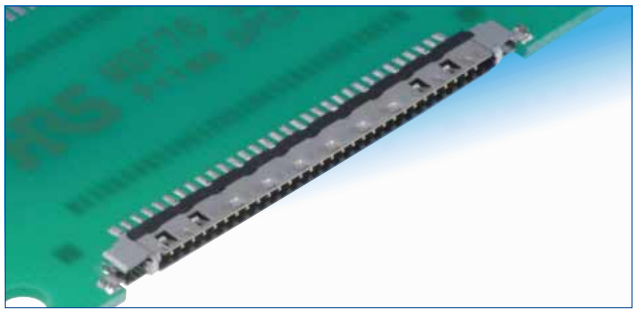
Gold plated



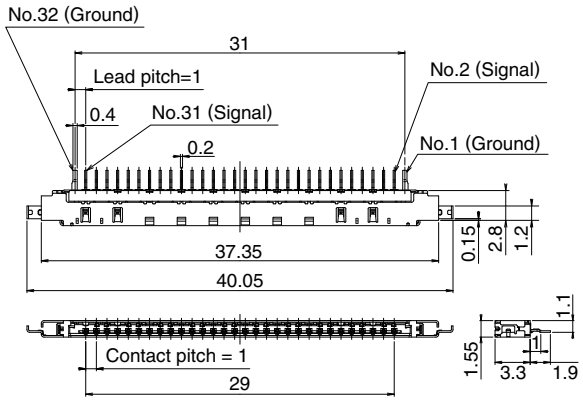
All dimensions : mm

Part No.	HRS No.	No. of contacts	Insulator Color	Packaging	Above the mounting surface
MDF76KBW-30S-1H(55)	547-0606-9 55	30	Beige	3,000 pcs. / reel	1.0mm

●Right angle, Reverse, mid-mount, SMT



Gold plated

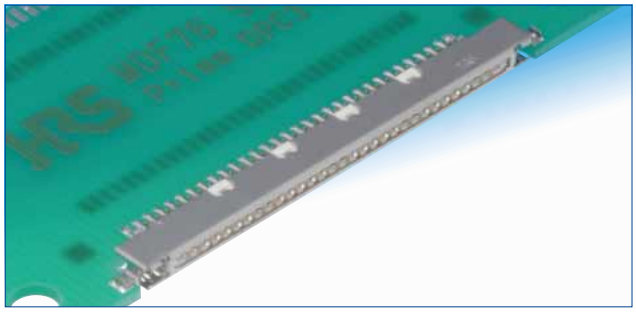


All dimensions : mm

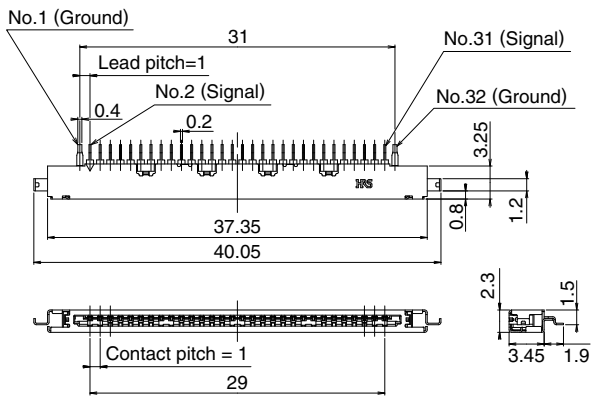
Part No.	HRS No.	No. of contacts	Insulator Color	Packaging	Above the mounting surface
MDF76LBRW-30S-1H(55)	547-0607-1 55	30	Black	3,000 pcs. / reel	1.1mm

■Receptacles (High profile)

●Right angle, Standard, mid-mount, SMT



Gold plated



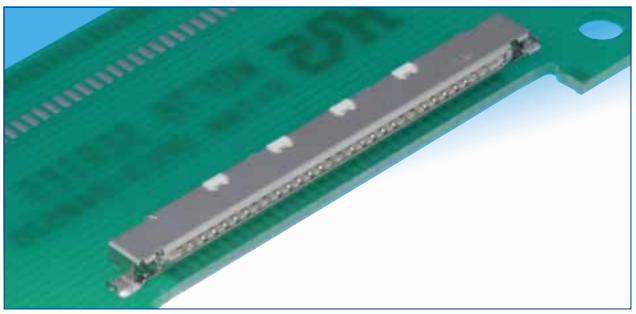
All dimensions : mm

Part No.	HRS No.	No. of contacts	Insulator Color	Packaging	Above the mounting surface
MDF76TW-30S-1H(55)	547-0912-5 55	30	Beige	2,500 pcs. / reel	1.5mm

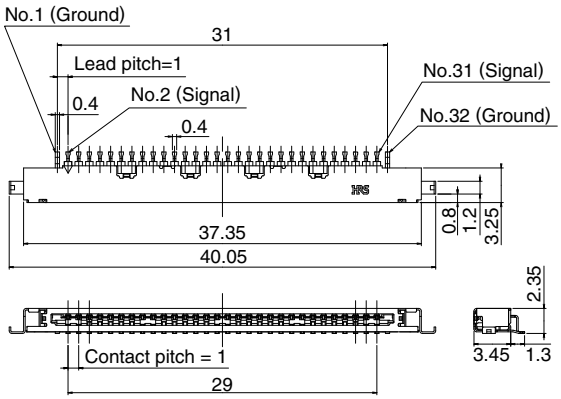
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■Receptacles (High profile)

●Right angle, Standard, top board, SMT



Gold plated



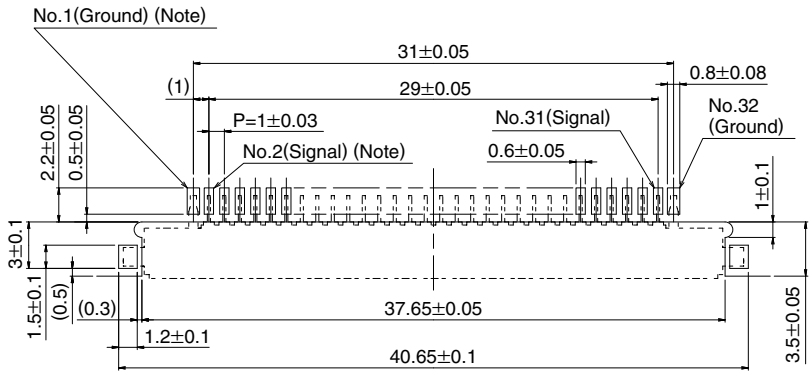
All dimensions : mm

Part No.	HRS No.	No. of contacts	Insulator Color	Packaging	Above the mounting surface
MDF76GW-30S-1H(55)	547-0916-6 55	30	Beige	2,500 pcs. / reel	2.35mm

■Recommended PCB mounting pattern

●Mid-mount

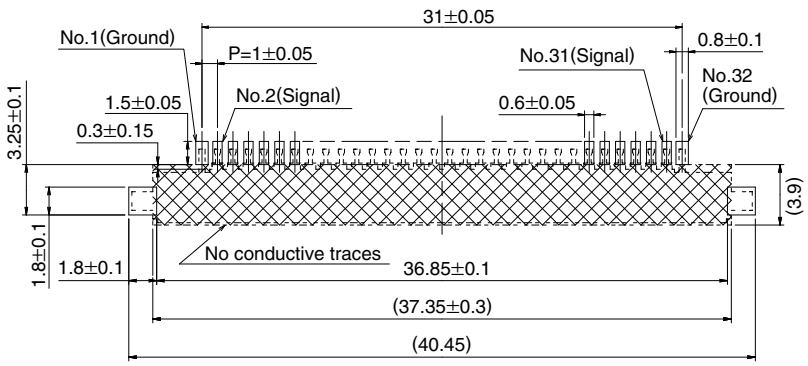
For receptacles :
MDF76KBW-30S-1H(**)
MDF76LBRW-30S-1H(**)
MDF76TW-30S-1H(**)



Note : For MDF76LBRW, No.32 (Ground and No.31 (Signal) are on left side.

●Top board

For receptacles :
MDF76GW-30S-1H(**)

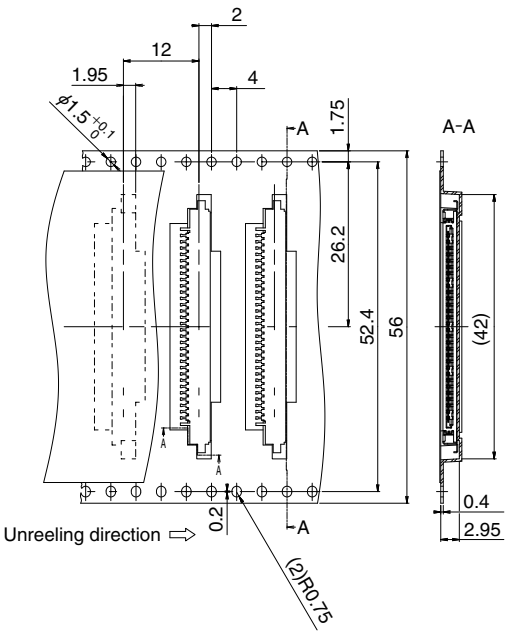


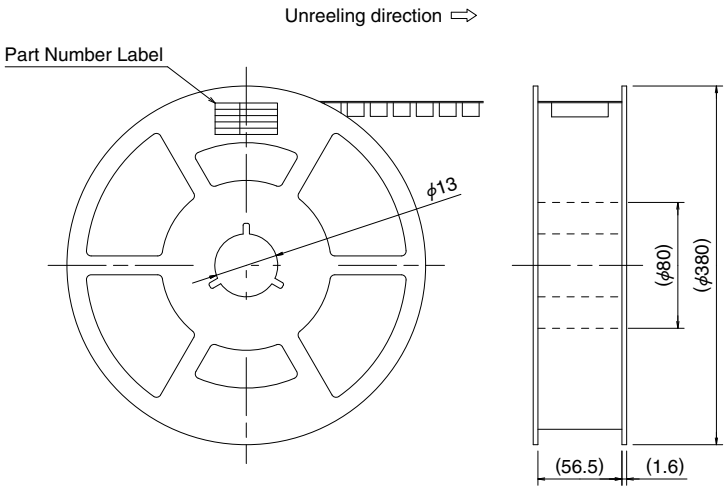
All dimensions : mm

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◆Packaging Specifications

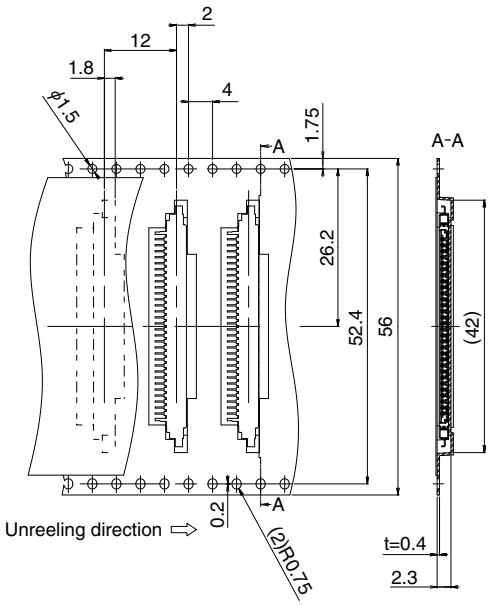
◆MDF76TW-30S-1H(55)
MDF76GW-30S-1H(55)

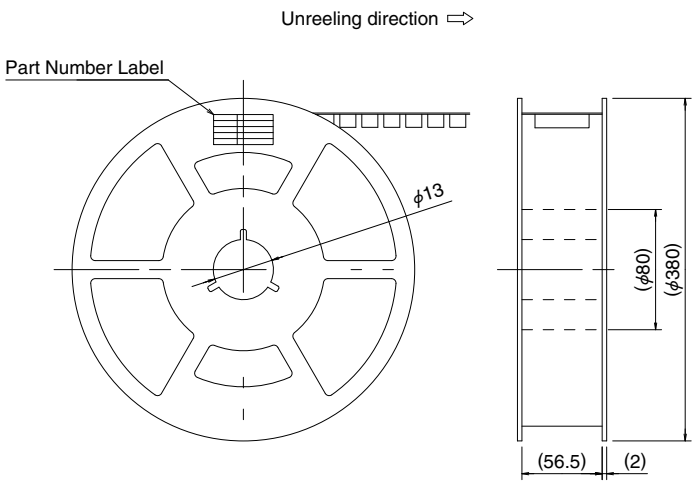




All dimensions : mm

◆MDF76KBW-30S-1H(55)
MDF76LBRW-30S-1H(55)

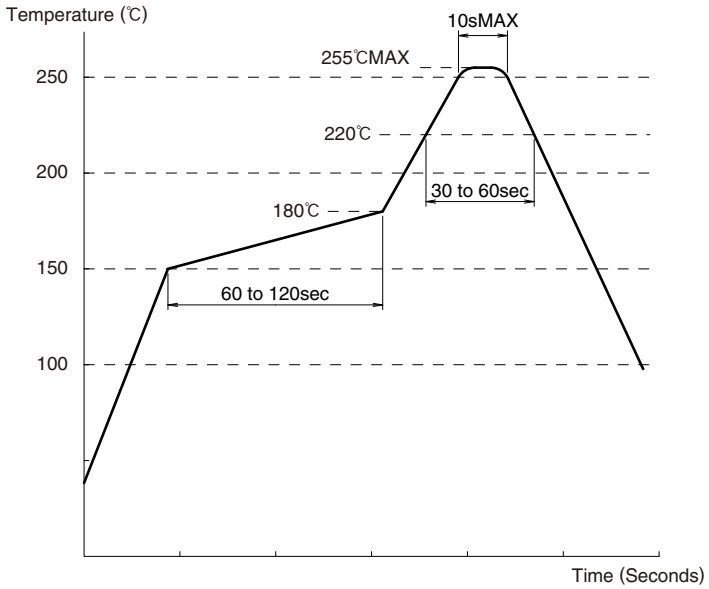
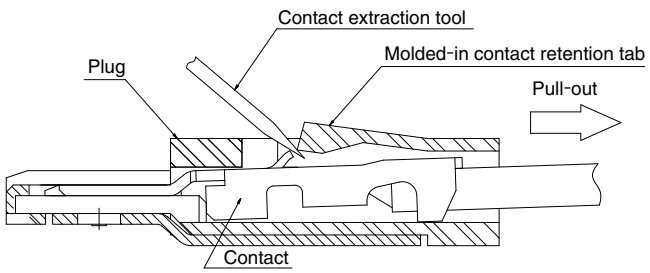




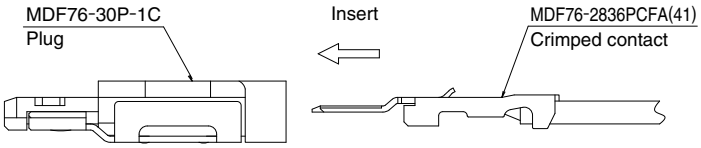
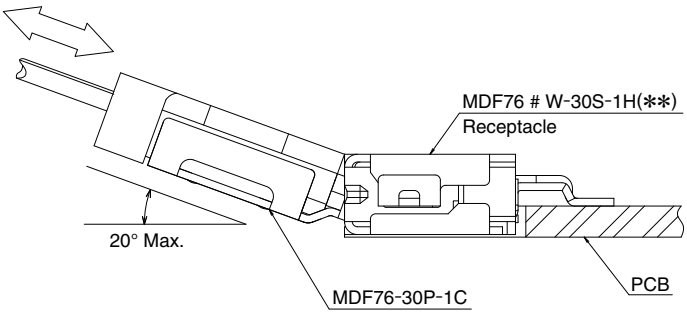
All dimensions : mm

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◆Usage Recommendations

1.Recommended temperature profile	 Note 1 : Up to 2 cycles of Reflow soldering is possible under the same conditions, provided that there is a return to normal temperature between the first and second cycle. Note 2 : The temperature profile indicates the board surface temperature at the point of contacts with the connector terminals.
2.Recommended manual soldering	300±10℃ for 3 seconds
3.Recommended screen thickness and open area ratio	Thickness : 0.15mm Open area ratio : 100%
4.Board warpage	Maximum of 0.03mm at the connector center, with both ends of the connector as reference points.
5.Cleaning conditions	Refer to "Nylon Connector Use Handbook".
6.Wire preparation and contact crimping	Refer to “Nylon Connector Use Handbook”. The crimp contact termination must be performed using specified tools. All dimensions and crimp conditions are listed in applicable Crimp Condition Table and Crimping Quality Standards Manual.
7.Crimped contact extraction	■ Insert the contact retention tool in the insulator body and carefully lift the molded-in retention tab while pulling on the wire at the same time (Fig. 1). Do not deflect the molded-in retention tab more than is needed to release the contact. The tab should return to its initial position after the contact is removed. Note : If the tab is not returning to it’s initial position carefully push I back before inserting the crimped contact. Permanent breakage of the molded-in retention tab will require replacement of the entire plug.  **Figure 1. Contact Extraction**

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8.Crimped contact insertion	Contact must be inserted horizontally oriented as shown on Fig. 2 Do NOT attempt to insert crimped contact in any other direction. Horizontal insertion !  **Figure 2. Crimped Contact Insertion**
9.Connector mating / unmating	Mating / unmating of the connectors should be done in the direction parallel to the receptacle's mounting surface. Do not attempt to mate/unmate in any other direction. Note : The connectors will self-guide themselves within the 20° angle, as shown in Fig. 3.  **Figure 3. Angular mating / unmating**
10.Precautions	Do not mate / unmate the connectors when the receptacle is NOT mounted on the PC board. Differences in color shade of molded components will not affect form, fit or function. Contact HRS if additional information is required.

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