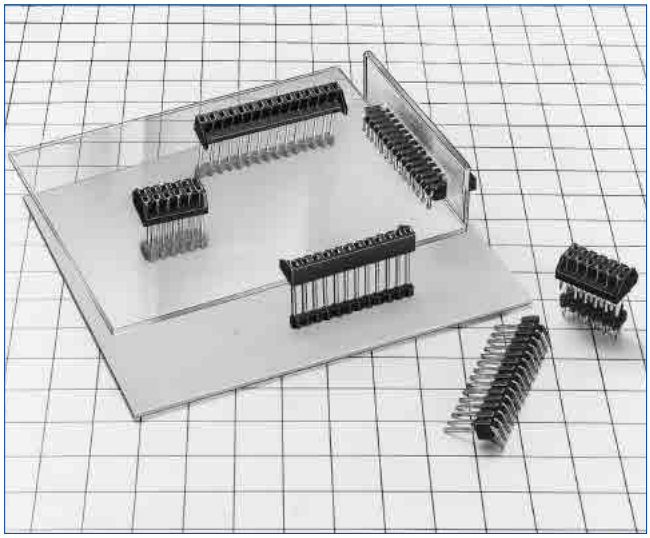
2.54mm Pitch Bottom Entry Type Connector

MDF7 Series



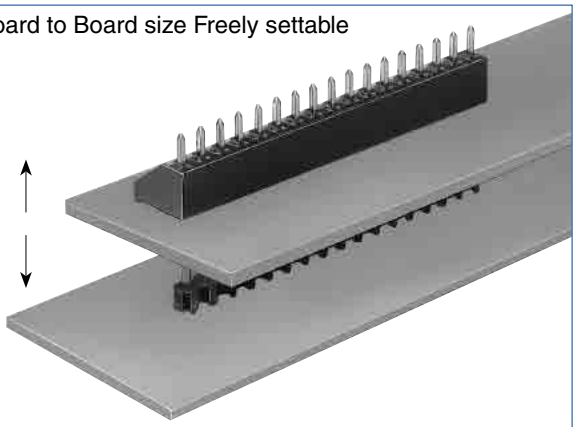


Fig.1

Features

1. Board to Board Size Freely Settable

The board to board size can be set at infinite stages, according to the header pin through type structure and the diverse header variation.
The board to board size can be set at infinite stages.

2. Integrity of Parts Mounted Surface

The parts mounted surface on two boards aren't face each other, and can be oriented in the same direction.

3. Wide Variation

Single-row product, double-row product, tin plated and gold plated products are lined up. In addition, the header to correspond to the board to board size are prepared. Concerning board to board size, other products can be provided, in addition to products in this catalog. Please contact HRS company as required.

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■Product Specifications

Rating	Current rating : 3A	Operating Temperature Range : -35℃ to +85℃ (Note 1)	Storage Temperature Range : -10℃ to +60℃ (Note 2)
	Voltage rating : 250V AC	Operating Humidity Range : 40% to 80%	Storage Humidity Range : 40% to 70% (Note 2)

Item	Specification	Condition
1. Insulation Resistance	1000MΩ min.	500V DC
2. Withstanding voltage	No flashover or insulation breakdown.	650V AC/1 minute
3. Contact Resistance	30mΩ max.	100mA
4. Single Insertion/Extraction Force	MIN 0.4N (40gf), MAX 4.4N (450gf)	Measured by the square steel pin with 0.635±0.002mm
5. Vibration	No electrical discontinuity of 10μs or more	Frequency : 10 to 55Hz, single amplitude of 0.75mm, 2 hours in each of the 3 directions.
6. Humidity (Steady state)	Contact resistance : 30mΩ max.	96 hours at temperature of
7. Temperature Cycle	Contact resistance : 30mΩ max. Insulation resistance : 1000MΩ min.	(-55℃ : 30 minutes, 5 to 35℃ : 10 minutes 85℃ : 30 minutes, 5 to 35℃ : 10 minutes) 5cycles
8. Durability (Mating/un-mating)	Contact resistance : 30mΩ max.	Tin plating : 30 cycles Gold plating : 50 cycles
9. Resistance to Soldering heat	No deformation of components affecting performance.	Flow : 260℃ for 10 seconds Manual soldering : 350℃ for 3 seconds

Note 1 : Includes temperature rise caused by current flow.

Note 2 : 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 / Finish

Product	Part	Material	Finish	Remarks
Receptacle	Insulator	Polyamide	Black	UL94V-0
	Contact	Phosphor bronze	Tin plated or gold plated	————
Pin Header	Insulator	PBT	Main unit : Black/Locator : Gray	UL94V-0
	Contact	Brass	Tin plated or gold plated	————

■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.

MDF7 - ＊ S - 2.54 DSA (＊＊)
❶ ❷ ❸ ❹ ❺ ❻

❶ Series Name : MDF7	❻ Receptacle (95) : Tin plated (100 pcs/pack) (96) : Gold plated (100 pcs/pack) Pin Header P (95) : Tin plated (100 pcs/pack) (96) : Gold plated (100 pcs/pack) DP (95) : Tin plated (100 pcs/pack) (96) : Gold plated (100 pcs/pack)
❷ Number of contacts: 3 to 46	
❸ Connector Type S : Single row receptacle D : Double row receptacle P : Single row pin header DP: Double row pin header	
❹ Contact Pitch : 2.54mm	
❺ Contact type DSA : Straight through hole DS : Right Angle through hole	

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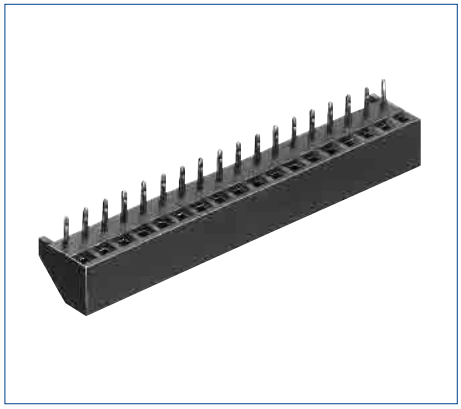
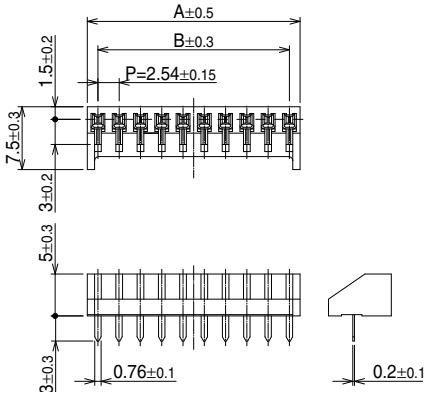
■Single Row Receptacle





[Specific No.] (＊＊), ＊＊
(95) : Tin plated
(96) : Gold plated

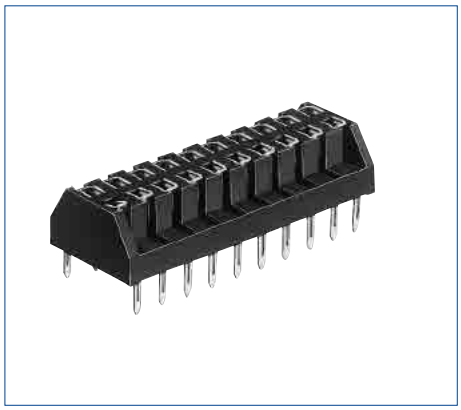
Unit : mm

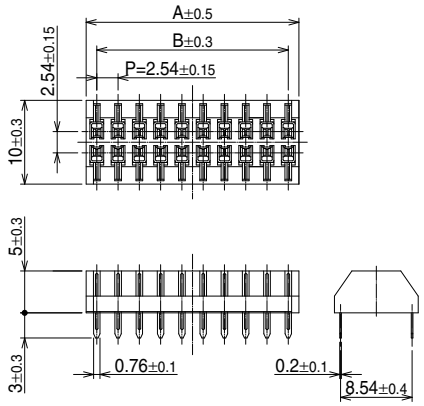
Part No.	HRS No.	No. of Contacts	A	B	RoHS
MDF7-3S-2.54DSA(**)	547-0355-0 **	3	7.62	5.08	
MDF7-5S-2.54DSA(**)	547-0112-9 **	5	12.70	10.16	
MDF7-6S-2.54DSA(**)	547-0129-1 **	6	15.24	12.70	
MDF7-7S-2.54DSA(**)	547-0135-4 **	7	17.78	15.24	
MDF7-8S-2.54DSA(**)	547-0136-7 **	8	20.32	17.78	
MDF7-9S-2.54DSA(**)	547-0137-0 **	9	22.86	20.32	Yes
MDF7-10S-2.54DSA(**)	547-0038-8 **	10	25.40	22.86	
MDF7-11S-2.54DSA(**)	547-0138-2 **	11	27.94	25.40	
MDF7-12S-2.54DSA(**)	547-0040-0 **	12	30.48	27.94	
MDF7-13S-2.54DSA(**)	547-0139-5 **	13	33.02	30.48	
MDF7-14S-2.54DSA(**)	547-0140-4 **	14	35.56	33.02	

Part No.	HRS No.	No. of Contacts	A	B	RoHS
MDF7-15S-2.54DSA(**)	547-0012-4 **	15	38.10	35.56	
MDF7-16S-2.54DSA(**)	547-0141-7 **	16	40.64	38.10	
MDF7-17S-2.54DSA(**)	547-0142-0 **	17	43.18	40.64	
MDF7-18S-2.54DSA(**)	547-0013-7 **	18	45.72	43.18	
MDF7-19S-2.54DSA(**)	547-0143-2 **	19	48.26	45.72	
MDF7-20S-2.54DSA(**)	547-0051-6 **	20	50.80	48.26	Yes
MDF7-21S-2.54DSA(**)	547-0144-5 **	21	53.34	50.80	
MDF7-22S-2.54DSA(**)	547-0145-8 **	22	55.88	53.34	
MDF7-23S-2.54DSA(**)	547-0146-0 **	23	58.42	55.88	
MDF7-24S-2.54DSA(**)	547-0147-3 **	24	60.96	58.42	
MDF7-25S-2.54DSA(**)	547-0014-0 **	25	63.50	60.96	

Note : The quantity for delivery is determined 100 pcs/pack. Please order the products per pack.

■Double Row Receptacle





Unit : mm

Part No.	HRS No.	No. of Contacts	A	B	RoHS
MDF7-12D-2.54DSA(**)	547-0032-1 **	12	15.24	12.70	
MDF7-14D-2.54DSA(**)	547-0354-8 **	14	17.78	15.24	
MDF7-16D-2.54DSA(**)	547-0363-9 **	16	20.32	17.78	
MDF7-20D-2.54DSA(**)	547-0033-4 **	20	25.40	22.86	
MDF7-22D-2.54DSA(**)	547-0246-5 **	22	27.94	25.40	Yes
MDF7-24D-2.54DSA(**)	547-0244-0 **	24	30.48	27.94	
MDF7-26D-2.54DSA(**)	547-0247-8 **	26	33.02	30.48	
MDF7-30D-2.54DSA(**)	547-0016-5 **	30	38.10	35.56	
MDF7-34D-2.54DSA(**)	547-0227-0 **	34	43.18	40.64	

[Specific No.] (＊＊), ＊＊
(95) : Tin plated
(96) : Gold plated

Note 1 : A quantity for delivery is determined 100 pcs/pack. Please order the products per pack.

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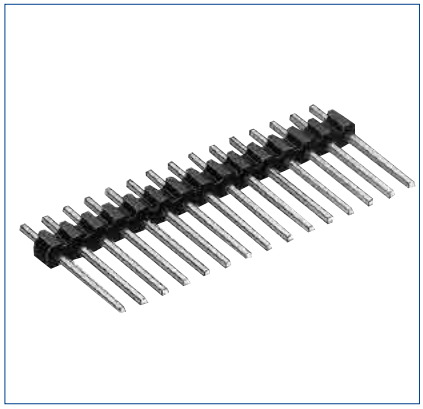
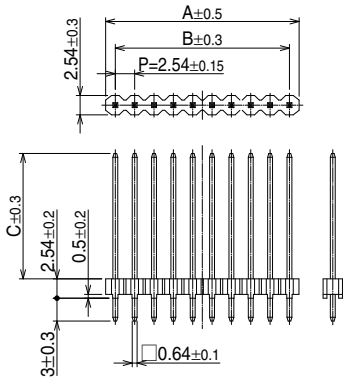
■Single Row Straight Pin Header

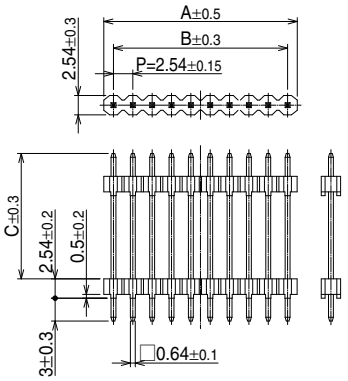


●Board Through-hole Diameter : $\phi 1.0^{+0.1}_{0}$

[Specific No.] (＊＊), ＊＊
(95) : Tin plated
(96) : Gold plated



[without locator]



[with locator]

●MDF7 (PCB distance : 2.54 to 5.5mm)

Unit : mm

Part No.	HRS No.	No. of Contacts	A	B	C	RoHS
MDF7-3P-2.54DSA(＊＊)	547-0220-1 ＊＊	3	7.62	5.08	10	Yes
MDF7-5P-2.54DSA(＊＊)	547-0113-1 ＊＊	5	12.70	10.16		
MDF7-6P-2.54DSA(＊＊)	547-0130-0 ＊＊	6	15.24	12.70		
MDF7-7P-2.54DSA(＊＊)	547-0148-6 ＊＊	7	17.78	15.24		
MDF7-8P-2.54DSA(＊＊)	547-0149-9 ＊＊	8	20.32	17.78		
MDF7-9P-2.54DSA(95)	547-0150-8 95	9	22.86	20.32		
MDF7-10P-2.54DSA(＊＊)	547-0039-0 ＊＊	10	25.40	22.86		
MDF7-12P-2.54DSA(＊＊)	547-0043-8 ＊＊	12	30.48	27.94		
MDF7-14P-2.54DSA(＊＊)	547-0153-6 ＊＊	14	35.56	33.02		
MDF7-15P-2.54DSA(＊＊)	547-0018-0 ＊＊	15	38.10	35.56		
MDF7-16P-2.54DSA(95)	547-0111-6 95	16	40.64	38.10		
MDF7-18P-2.54DSA(＊＊)	547-0022-8 ＊＊	18	45.72	43.18		
MDF7-20P-2.54DSA(＊＊)	547-0123-5 ＊＊	20	50.80	48.26		
MDF7-22P-2.54DSA(＊＊)	547-0157-7 ＊＊	22	55.88	53.34		
MDF7-24P-2.54DSA(＊＊)	547-0159-2 ＊＊	24	60.96	58.42		
MDF7-25P-2.54DSA(＊＊)	547-0023-0 ＊＊	25	63.50	60.96		

●MDF7B (PCB distance : 2.54 to 12mm)

Unit : mm

Part No.	HRS No.	No. of Contacts	A	B	C	RoHS
MDF7B-3P-2.54DSA(＊＊)	547-0304-0 ＊＊	3	7.62	5.08	16.46	Yes
MDF7B-5P-2.54DSA(95)	547-0133-9 95	5	12.70	10.16		
MDF7B-6P-2.54DSA(＊＊)	547-0131-3 ＊＊	6	15.24	12.70		
MDF7B-7P-2.54DSA(＊＊)	547-0177-4 ＊＊	7	17.78	15.24		
MDF7B-8P-2.54DSA(＊＊)	547-0178-7 ＊＊	8	20.32	17.78		
MDF7B-9P-2.54DSA(＊＊)	547-0179-0 ＊＊	9	22.86	20.32		
MDF7B-10P-2.54DSA(＊＊)	547-0048-1 ＊＊	10	25.40	22.86		
MDF7B-11P-2.54DSA(＊＊)	547-0047-9 ＊＊	11	27.94	25.40		
MDF7B-13P-2.54DSA(95)	547-0180-9 95	13	33.02	30.48		
MDF7B-14P-2.54DSA(95)	547-0181-1 95	14	35.56	33.02		
MDF7B-16P-2.54DSA(＊＊)	547-0182-4 ＊＊	16	40.64	38.10		
MDF7B-20P-2.54DSA(＊＊)	547-0052-9 ＊＊	20	50.80	48.26		
MDF7B-21P-2.54DSA(95)	547-0185-2 95	21	53.34	50.80		
MDF7B-22P-2.54DSA(95)	547-0186-5 95	22	55.88	53.34		
MDF7B-24P-2.54DSA(95)	547-0067-6 95	24	60.96	58.42		
MDF7B-25P-2.54DSA(95)	547-0026-9 95	25	63.50	60.96		

Note 1 : PCB distance in the above table represents the case where the 1.6mm thickness board is used.
Note 2 : The quantity for delivery is determined 100 pcs/pack. Please order the products per pack.

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●MDF7P (PCB distance : 2.54 to 8mm)

Unit : mm

Part No.	HRS No.	No. of Contacts	A	B	C	RoHS
MDF7P-3P-2.54DSA(**)	547-0462-0 **	3	7.62	5.08	12.5	Yes
MDF7P-5P-2.54DSA(95)	547-0511-4 95	5	12.70	10.16		
MDF7P-6P-2.54DSA(95)	547-0513-0 95	6	15.24	12.70		
MDF7P-8P-2.54DSA(95)	547-0514-2 95	8	20.32	17.78		
MDF7P-14P-2.54DSA(95)	547-0385-1 95	14	35.56	33.02		
MDF7P-16P-2.54DSA(95)	547-0346-0 95	16	40.64	38.10		
MDF7P-25P-2.54DSA(95)	547-0348-5 95	25	63.50	60.96		

●MDF7C (PCB distance : 5.08 to 15mm, with Locator)

Unit : mm

Part No.	HRS No.	No. of Contacts	A	B	C	RoHS
MDF7C-3P-2.54DSA(**)	547-0489-7 **	3	7.62	5.08	19.46	Yes
MDF7C-5P-2.54DSA(**)	547-0344-4 **	5	12.70	10.16		
MDF7C-6P-2.54DSA(95)	547-0268-8 95	6	15.24	12.70		
MDF7C-7P-2.54DSA(**)	547-0378-6 **	7	17.78	15.24		
MDF7C-8P-2.54DSA(95)	547-0375-8 95	8	20.32	17.78		
MDF7C-9P-2.54DSA(95)	547-0506-4 95	9	22.86	20.32		
MDF7C-10P-2.54DSA(95)	547-0191-5 95	10	25.40	22.86		
MDF7C-12P-2.54DSA(**)	547-0475-2 **	12	30.48	27.94		
MDF7C-13P-2.54DSA(95)	547-0401-6 95	13	33.02	30.48		
MDF7C-14P-2.54DSA(95)	547-0380-8 95	14	35.56	33.02		
MDF7C-15P-2.54DSA(95)	547-0187-8 95	15	38.10	35.56		
MDF7C-18P-2.54DSA(95)	547-0029-7 95	18	45.72	43.18		
MDF7C-20P-2.54DSA(**)	547-0198-4 **	20	50.80	48.26		
MDF7C-25P-2.54DSA(95)	547-0305-2 95	25	63.50	60.96		

Note 1 : PCB distance in the above table represents the case where the 1.6mm thickness board is used.
Note 2 : A quantity for delivery is determined 100 pcs/pack. Please order the products per pack.

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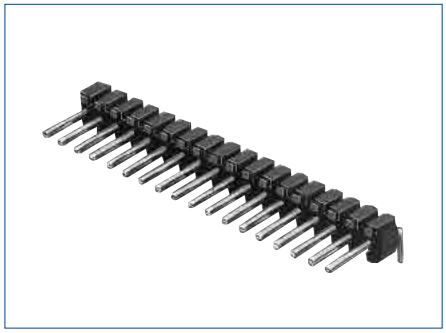
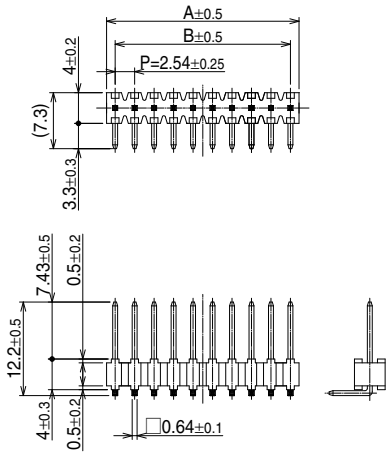
■Single-Row Right Angle Pin Header



●Board Through-hole Diameter : $\phi 1.0^{+0.1}_{0}$



[Specific No.] (＊＊), ＊＊
(95) : Tin plated
(96) : Gold plated

Unit : mm

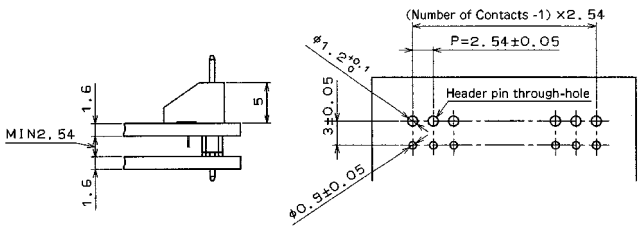
Part No.	HRS No.	No. of Contacts	A	B	RoHS
MDF7-5P-2.54DS(**)	547-0160-1 **	5	12.70	10.16	Yes
MDF7-6P-2.54DS(**)	547-0161-4 **	6	15.24	12.70	
MDF7-7P-2.54DS(**)	547-0162-7 **	7	17.78	15.24	
MDF7-8P-2.54DS(**)	547-0163-0 **	8	20.32	17.78	
MDF7-9P-2.54DS(95)	547-0164-2 95	9	22.86	20.32	
MDF7-10P-2.54DS(**)	547-0165-5 **	10	25.40	22.86	
MDF7-11P-2.54DS(**)	547-0166-8 **	11	27.94	25.40	
MDF7-12P-2.54DS(**)	547-0116-0 **	12	30.48	27.94	
MDF7-13P-2.54DS(**)	547-0167-0 **	13	33.02	30.48	
MDF7-14P-2.54DS(**)	547-0168-3 **	14	35.56	33.02	
MDF7-15P-2.54DS(95)	547-0027-1 95	15	38.10	35.56	

Part No.	HRS No.	No. of Contacts	A	B	RoHS
MDF7-16P-2.54DS(95)	547-0169-6 95	16	40.64	38.10	Yes
MDF7-17P-2.54DS(96)	547-0170-5 96	17	43.18	40.64	
MDF7-18P-2.54DS(95)	547-0019-3 95	18	45.72	43.18	
MDF7-19P-2.54DS(95)	547-0171-8 95	19	48.26	45.72	
MDF7-20P-2.54DS(**)	547-0172-0 **	20	50.80	48.26	
MDF7-24P-2.54DS(95)	547-0176-1 95	24	60.96	58.42	
MDF7-25P-2.54DS(95)	547-0028-4 95	25	63.50	60.96	

Note : A quantity for delivery is determined 100 pcs/pack. Please order the products per pack.

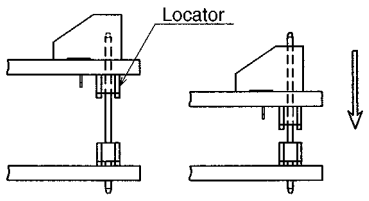
◆Application Pattern and PCB mounting pattern

●When the single-row straight pin header is used



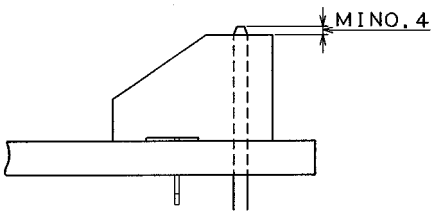
●When the header with locator is used

The locator moves as the connector is inserted.

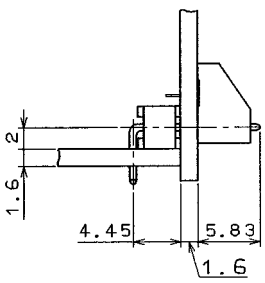


●When the PCB distance is set to MAX

To separate clearance between the boards, the operation limit t is defined as the state where the male pin has passed through the receptacle.



●When the right angle pin header is used



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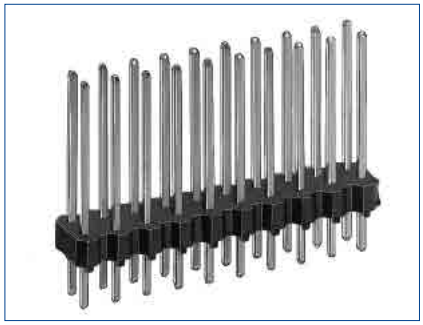
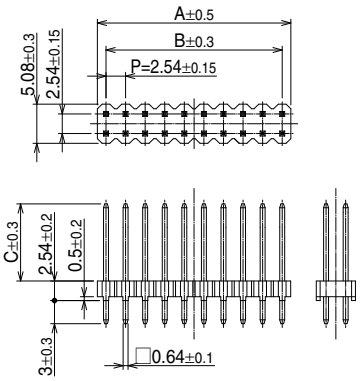
■Double-Row Straight Pin Header



●Board Through-hole Diameter : $\phi 1.0^{+0.1}_{0}$



[Specific No.] (＊＊), ＊＊
(95) : Tin plated
(96) : Gold plated

●MDF7 (PCB distance : 2.54 to 5.5mm)

Unit : mm

Part No.	HRS No.	No. of Contacts	A	B	C	RoHS
MDF7-12DP-2.54DSA(＊＊)	547-0034-7 ＊＊	12	15.24	12.70	10	Yes
MDF7-14DP-2.54DSA(95)	547-0365-4 95	14	17.78	15.24		
MDF7-16DP-2.54DSA(＊＊)	547-0364-1 ＊＊	16	20.32	17.78		
MDF7-20DP-2.54DSA(＊＊)	547-0114-4 ＊＊	20	25.40	22.86		
MDF7-22DP-2.54DSA(＊＊)	547-0093-6 ＊＊	22	27.94	25.40		
MDF7-24DP-2.54DSA(＊＊)	547-0250-2 ＊＊	24	30.48	27.94		
MDF7-26DP-2.54DSA(＊＊)	547-0251-5 ＊＊	26	33.02	30.48		
MDF7-30DP-2.54DSA(＊＊)	547-0037-5 ＊＊	30	38.10	35.56		
MDF7-34DP-2.54DSA(＊＊)	547-0252-8 ＊＊	34	43.18	40.64		

●MDF7P (PCB distance : 2.54 to 8mm)

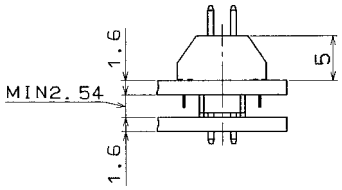
Unit : mm

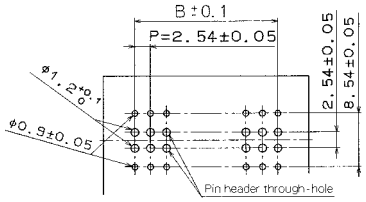
Part No.	HRS No.	No. of Contacts	A	B	C	RoHS
MDF7P-12DP-2.54DSA(95)	547-0407-2 95	12	15.24	12.70	12.5	Yes
MDF7P-16DP-2.54DSA(95)	547-0367-0 95	16	20.32	17.78		
MDF7P-20DP-2.54DSA(95)	547-0260-6 95	20	25.40	22.86		
MDF7P-22DP-2.54DSA(95)	547-0261-9 95	22	27.94	25.40		
MDF7P-24DP-2.54DSA(＊＊)	547-0262-1 ＊＊	24	30.48	27.94		
MDF7P-26DP-2.54DSA(＊＊)	547-0263-4 ＊＊	26	33.02	30.48		
MDF7P-30DP-2.54DSA(95)	547-0264-7 95	30	38.10	35.56		

Note 1 : PCB distance in the above table represents the state where the 1.6mm thickness board is used.
Note 2 : A quantity for delivery is determined 100 pcs/pack. Please order the products per pack.

◆Application Pattern and PCB mounting pattern

●When the double-row straight pin header is used





◆Precautions

1. Recommended Soldering Condition	■Flow Condition by Automatic Soldering Unit Soldering temperature : 255±5℃, Soldering time: within 10 seconds ■Manual Soldering Condition Soldering iron temperature : 340±10℃, Soldering time : within 3 seconds
2. Board Masking	If the automatic soldering unit is used, block the pin header through-hole on the receptacle mounted board with the masking tape, etc., and prevent the flux pervasion. In addition, if much flux is adhered so as to affect the contact, please be sure to clean the board.
3. Cleaning Condition	Refer to Wire-to-Board Connector Use Hand book.
4. Cautions	■It is impossible to fix the board to the board by the connector only. Please take actions to fix the board without using the connector. ■If the board deformation could occur due to vibration, please use the gold plating. ■Don't use the connector as the top entry.

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The characteristics and the specifications contained herein are for reference purpose. Please refer to the latest customer drawings prior to use.
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