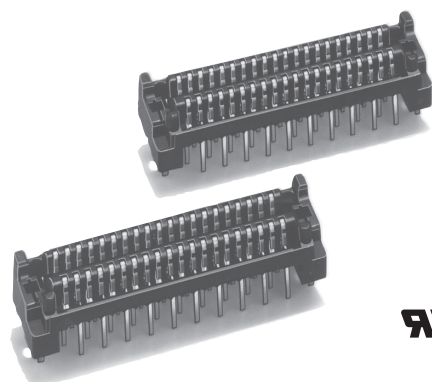


# Half-pitch Low-profile Stacking Connectors

## XH4A

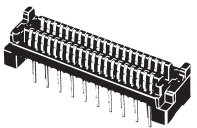
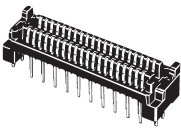
### An Integrated Male/ Female Half-pitch Board-to-Board Stacking Connector.

- Board space can be adjusted from 5 to 11 mm in 1-mm increments. (5 to 9 mm in 1-mm increments for SMT versions.)
- The product line includes Through-hole and Surface-mounted Terminals (SMT) Connectors.
- The leaf contact construction resists bending
- All models incorporate fastening pins to secure the terminals, thus preventing floating or falling over during soldering.
- The XH4A conforms to EN, IEC, UL (file no. E103202), and CSA (file no. LR62678). (SMT Connectors not included)



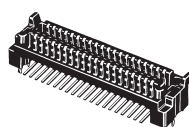
## Ordering Information

### Straight Through-hole PCB Terminals, with and without PCB Fastening Pins

Appearance					
	No Fastening Pin	With PCB Fastening Pins (See Note)			
No. of contacts	(Standard)	(Standard)	(1-mm increment)	(2-mm increments)	(3-mm increments)
40	XH4A-4031	XH4A-4031-A	XH4A-4031-1A	XH4A-4031-2A	XH4A-4031-3A
50	XH4A-5031	XH4A-5031-A	XH4A-5031-1A	XH4A-5031-2A	XH4A-5031-3A
60	XH4A-6031	XH4A-6031-A	XH4A-6031-1A	XH4A-6031-2A	XH4A-6031-3A
80	XH4A-8031	XH4A-8031-A	XH4A-8031-1A	XH4A-8031-2A	XH4A-8031-3A
100	XH4A-0131	XH4A-0131-A	XH4A-0131-1A	XH4A-0131-2A	XH4A-0131-3A

**Note:** Applicable board thickness is 1.6 mm.

### SMT Terminals with PCB Fastening pins

Appearance			
	With PCB Fastening Pins (See Note)		
No. of contacts	(Standard)	(1-mm increment)	(2-mm increments)
40	XH4A-4035-A	XH4A-4035-1A	XH4A-4035-2A
50	XH4A-5035-A	XH4A-5035-1A	XH4A-5035-2A
60	XH4A-6035-A	XH4A-6035-1A	XH4A-6035-2A
80	XH4A-8035-A	XH4A-8035-1A	XH4A-8035-2A
100	XH4A-0135-A	XH4A-0135-1A	XH4A-0135-2A

**Note:** Applicable board thickness is 1.6 mm.

# Specifications

## ■ Ratings and Characteristics

Rated current	0.5 A
Rated voltage	125 VAC
Contact resistance (See note.)	30 mΩ max. (20 mV max., 100 mA max.)
Insulation resistance	1,000 MΩ min. (at 500 VDC)
Dielectric strength	650 VAC for 1 min (leakage current: 1 mA max.)
Connector insertion force	150 gf (1.47 N) max. per contact
Connector removal force	15 gf (0.15 N) min. per contact
Insertion tolerance	50 times
Ambient temperature	Operating: -55 to 105°C (with no icing)

**Note:** The contact resistance depends on which XH4A-□□31 Connectors are mated to each other.

## ■ Materials and Finish

Housing		PPS resin with glass (UL94V-0)/black
Locator		PBT resin with glass (UL94V-0)/black
Contacts	Mating end	Phosphor bronze/nickel base, 0.15-μm gold plating
	Terminal	Phosphor bronze/nickel base, gold flash plating
Fastening pins		Phosphor bronze/tin plating

# Engineering Data

## ■ Mating Diagrams

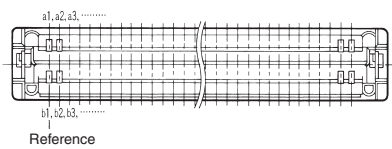
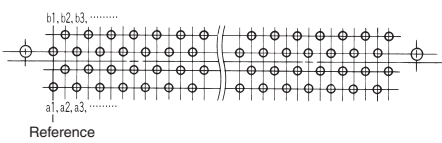
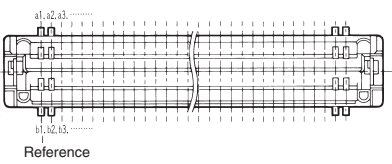
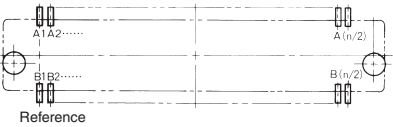
### Stacked Through-hole DIP Terminals

Stacking space	5 mm	6 mm	7 mm	8 mm
Mating diagram				
Stacking space	9 mm	10 mm	11 mm	
Mating diagram				

### Stacked SMT Terminals

Stacking space	5 mm	6 mm	7 mm	8 mm	9 mm
Mating diagram					

## Contact Numbers

Item	Mated Diagram	Mounting holes
Through-hole Terminals		(bottom view) 
SMT Terminals		(top view) 

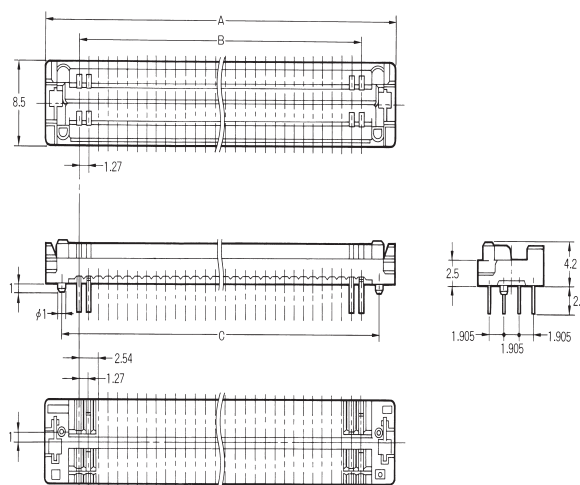
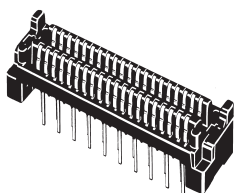
**Note:** 1. The triangular mark (▼) and contact numbers are not printed on the connectors. Use the raised reference point used to prevent reverse insertion as a guide when designing boards.

- On the mating side, the row of terminals on the raised reference point side are called row a, and the row on the other side is called row b. The numbers are in the order shown.
- XH4A Half-pitch Connectors are integrated male/female connectors. The contact numbers on row a correspond to the contact numbers on row b. Be careful when using these connectors because they function slightly differently from separate male and female connectors (i.e., Plugs and Sockets).

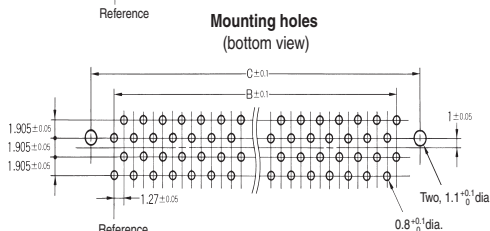
## Dimensions

### Straight Through-hole DIP Terminals (without PCB fastening pins)

XH4A-□□31

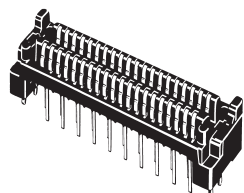


No. of contacts	Dimensions (mm)		
	A	B	C
40	32.73	24.13	28.63
50	39.08	30.48	34.98
60	45.43	36.83	41.33
80	58.13	49.53	54.03
100	70.83	62.23	66.73

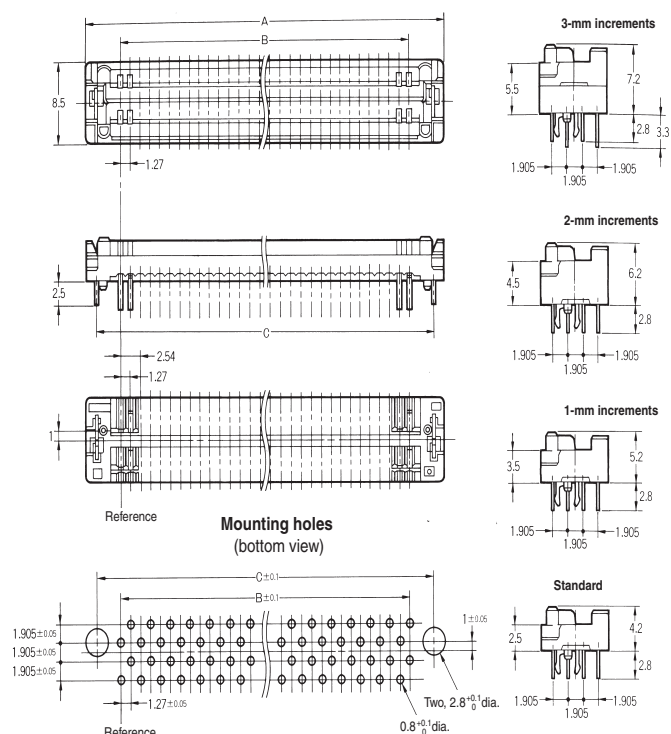


# ■ XH4A Straight Through-hole Terminals (with PCB fastening pins) Stacking Space Adjustable in Standard Size and 1-, 2-, or 3-mm Increments

XH4A-□□31-A (Standard)  
XH4A-□□31-1A (1-mm Increment)  
XH4A-□□31-2A (2-mm Increments)  
XH4A-□□31-3A (3-mm Increments)

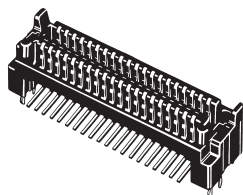


No. of contacts	Dimensions (mm)		
	A	B	C
40	32.73	24.13	30.23
50	39.08	30.48	36.58
60	45.43	36.83	42.93
80	58.13	49.53	55.63
100	70.83	62.23	68.33

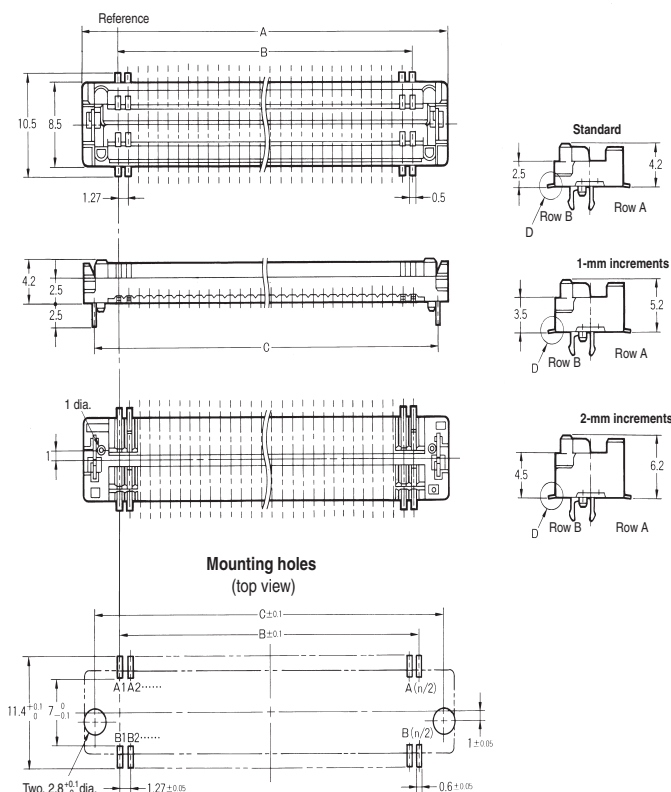


# ■ XH4A SMT Terminals (with PCB fastening pins) Stacking Space Adjustable in Standard Size and 1- or 2-mm Increments

XH4A-□□35-A (Standard)  
XH4A-□□35-1A (1-mm Increment)  
XH4A-□□35-2A (2-mm Increments)



No. of contacts	Dimensions (mm)		
	A	B	C
40	32.73	24.13	30.23
50	39.08	30.48	36.58
60	45.43	36.83	42.93
80	58.13	49.53	55.63
100	70.83	62.23	68.33



# Precautions

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## ■ Correct Use

### PCB settings

XH4A Half-pitch Connectors are male/female connectors with integrated plugs and sockets.

Refer to “*Contact Numbers*” in the “*Engineering Data*” section above when designing boards.

### Mating Compatibility

XH4 Half-pitch Connectors do not mate with XH2 or XH3 Half-pitch Connectors.

## Soldering Conditions

### Straight DIP Terminals (Automated Soldering)

1. Soldering temperature:  $230 \pm 5^{\circ}\text{C}$
2. Continuous soldering time: Within 3 s

Be sure to wash the board after automated soldering is completed.

### SMT Terminals

1. Recommended reflow conditions:
2. Pre-heat temperature:  $150 \pm 10^{\circ}\text{C}$
3. Pre-heat time: 60 to 120s
4. Soldering temperature: 200 to  $240^{\circ}\text{C}$
5. Soldering time: Within 30s (Within 10s at the maximum temperature of  $240^{\circ}\text{C}$ )

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To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.

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