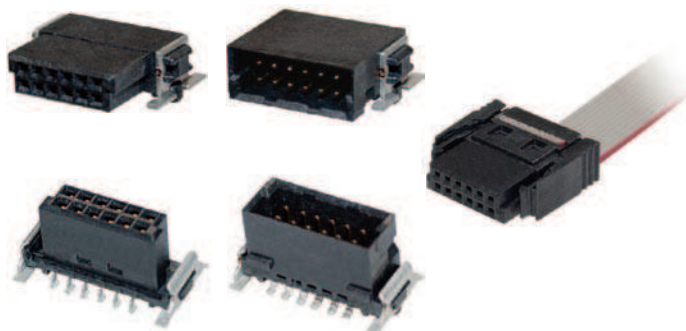


# Half-pitch SMT Connectors (Board to Board and Board to Cable Connectors)

## XH5

### SMT-compatible Connectors with a 1.27-mm Pitch

- These SMT Connectors can be mounted on the back surfaces of circuit boards.
- Circuit board positioning bosses provided for accurate mounting on circuit boards.
- Compatible with reflow mounting.
- Board-to-board stacking height of 8 to 18.5 mm with stacking connections.



### Terminology

● **SMT**

An abbreviation for surface-mount technology.

● **Stacking connections**

Stacking circuit boards and connecting them parallel to each other. The distance between the stacked circuit boards is called the stacking height.





● **Vertical connection**


Connecting a circuit board so that it is vertical.

● **Horizontal connection**

Connecting a circuit board so that it is horizontal.

### Connectors

Model	XH5A-□□15	XH5E-□□15-□	XH5F-□□15	XH5B-□□15-□
Appearance	Plug, Right-angle, SMT Pins 	Plug, Straight, SMT Pins 	Socket, Right-angle, SMT Pins 	Socket, Straight, SMT Pins 
Page	Page 3		Page 5	

Model	XH5H-□□10-□□
Appearance	Cable with Connectors on Both Ends (Socket/Socket) 
Page	Page 7

# XH5

## List of Model

### Half-pitch Connectors

XH5□□-□□□15-□□  
(1) (2) (3)

(1) Type

Code	Type
A	Right-angle Plug
B	Straight Socket
E	Straight Plug
F	Right-angle Socket

(2) Number of contacts

Code	Number of contacts
12	12 pins
26	26 pins
50	50 pins
68	68 pins
80	80 pins

(3) Height of Straight Plug/Socket

Code	Height
NO	- (Right-angle Plug/Socket)
1	6.75 mm
2	8.25 mm
3	9.85 mm
4	6.25 mm
5	9.05 mm
6	13.65 mm

### Half-pitch Connectors Cable with Connectors on Both Ends

XH5H-□□□10-□□□  
(1) (2)

(1) Number of contacts

Code	Number of contacts
12	12 pins
26	26 pins
50	50 pins
68	68 pins
80	80 pins

(2) Cable Length

Code	Length
10	100 mm
20	200 mm
30	300 mm

## Ratings and Characteristics

<b>Rated current</b>	1A
<b>Rated voltage</b>	100 VAC
<b>Contact resistance</b>	25 mΩ max. (at 20 mVDC, 100 mA max.)
<b>Insulation resistance</b>	1,000 MΩ min. (at 500 VDC)
<b>Withstand voltage</b>	500 VAC for 1 min (leakage current: 1 mA max.)
<b>Insertion durability</b>	500 times
<b>Operating temperature</b>	-55 to 105°C (with no condensation or icing)

## Materials and Finish

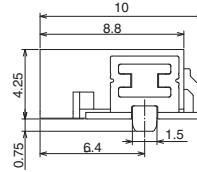
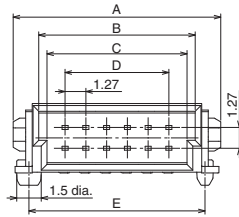
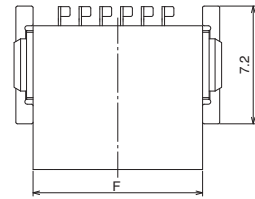
<b>Housing</b>	LCP (UL94 V-0)/black	
<b>Contacts</b>	<b>Mating end</b>	Copper alloy/gold plated
	<b>Terminals</b>	Copper alloy/tin plated
<b>Hold-down</b>	Copper alloy/tin plated	

# XH5A/E Plug, Right-angle, SMT Pins, Straight, SMT Pins

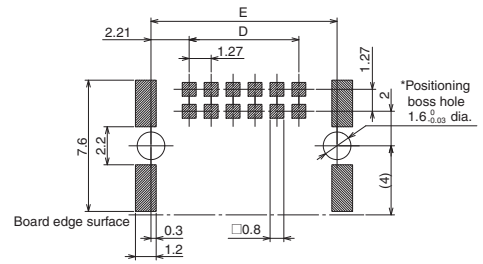
## Dimensions

(Unit: mm)

XH5A-□□15  
(Right-angle, SMT Pins)



### Mounting Holes

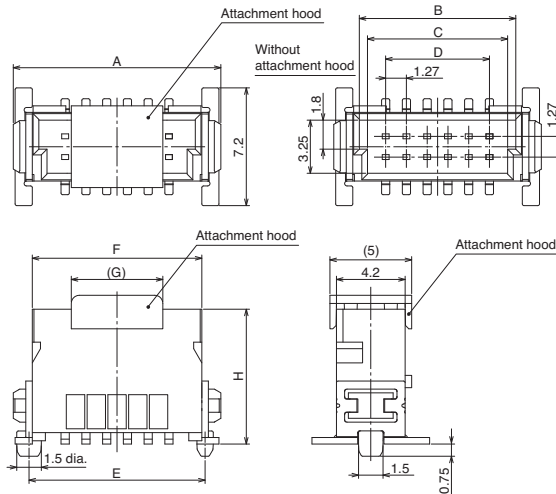
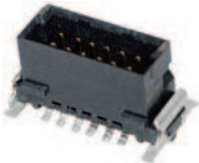


(Tolerance: ±0.03)  
Note: The overall pattern pitch tolerance for the board is ±0.03. Do not accumulate error. The 1.6<sub>±0.03</sub> diameter holes are for the positioning bosses. Use metal masks to prevent solder from entering these holes.

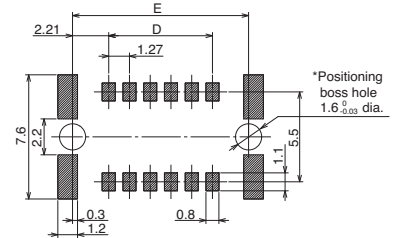
Table of Dimensions

Model	Number of contacts	A	B	C	D	E	F
XH5A-1215	12	12.70	9.57	8.57	6.35	10.77	10.37
XH5A-2615	26	21.59	18.46	17.46	15.24	19.66	19.26
XH5A-5015	50	36.83	33.70	32.70	30.48	34.90	34.5
XH5A-6815	68	48.26	45.13	44.13	41.91	46.33	45.93
XH5A-8015	80	55.88	52.75	51.75	49.53	53.95	53.55

XH5E-□□15-□  
(Straight, SMT Pins)



### Mounting Holes



(Tolerance: ±0.03)  
Note: The overall pattern pitch tolerance for the board is ±0.03. Do not accumulate error. The 1.6<sub>±0.03</sub> diameter holes are for the positioning bosses. Use metal masks to prevent solder from entering these holes.

Table of Dimensions

Model	Number of contacts	A	B	C	D	E	F	G	H
XH5E-1215-□	12	12.70	9.57	8.57	6.35	10.77	10.37	5.6	1: 6.75 2: 8.25 3: 9.85
XH5E-2615-□	26	21.59	18.46	17.46	15.24	19.66	19.26	17.0	
XH5E-5015-□	50	36.83	33.70	32.70	30.48	34.90	34.50	17.0	
XH5E-6815-□	68	48.26	45.13	44.13	41.91	46.33	45.93	17.0	
XH5E-8015-□	80	55.88	52.75	51.75	49.53	53.95	53.55	17.0	

Note: □ is replaced by 1 to 3 to indicate the connector height type.

# XH5

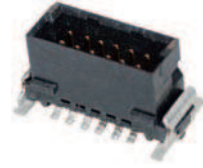
## Ordering Information

Right-angle, SMT Pins



Number of contacts	Model	Quantity per reel (pcs)
12	XH5A-1215	560
26	XH5A-2615	
50	XH5A-5015	
68	XH5A-6815	
80	XH5A-8015	

Straight, SMT Pins



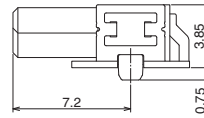
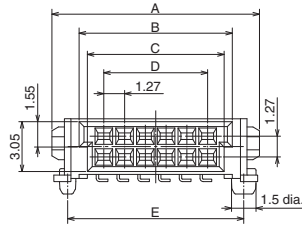
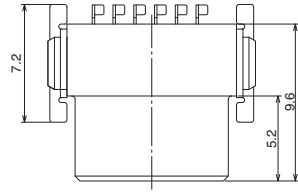
Number of contacts	Height (mm)	Model	Quantity per reel (pcs)
12	6.75	XH5E-1215-1	280
	8.25	XH5E-1215-2	280
	9.85	XH5E-1215-3	250
26	6.75	XH5E-2615-1	280
	8.25	XH5E-2615-2	280
	9.85	XH5E-2615-3	250
50	6.75	XH5E-5015-1	280
	8.25	XH5E-5015-2	280
	9.85	XH5E-5015-3	250
68	6.75	XH5E-6815-1	280
	8.25	XH5E-6815-2	280
	9.85	XH5E-6815-3	250
80	6.75	XH5E-8015-1	280
	8.25	XH5E-8015-2	280
	9.85	XH5E-8015-3	250

# XH5F/B Socket, Right-angle, SMT Pins, Straight, SMT Pins

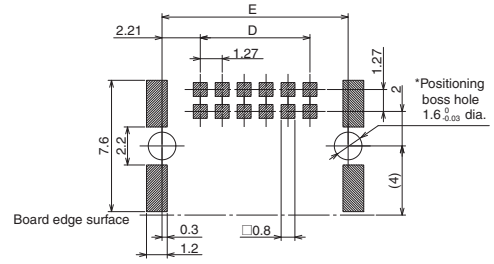
## Dimensions

(Unit: mm)

XH5F-□□15  
(Right-angle, SMT Pins)



### Mounting Holes

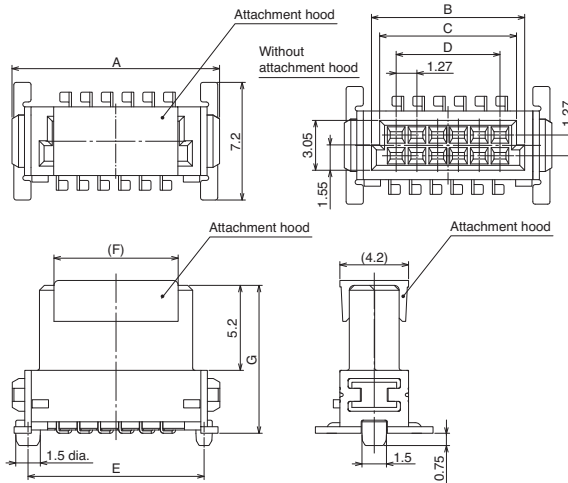


(Tolerance: ±0.03)  
Note: The overall pattern pitch tolerance for the board is ±0.03. Do not accumulate error. The 1.6<sub>±0.03</sub> diameter holes are for the positioning bosses. Use metal masks to prevent solder from entering these holes.

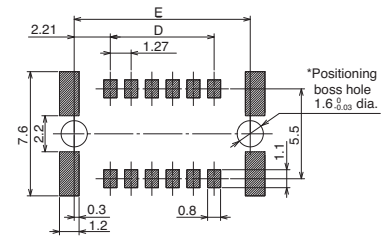
Table of Dimensions

Model	Number of contacts	A	B	C	D	E
XH5F-1215	12	12.70	9.37	8.37	6.35	10.77
XH5F-2615	26	21.59	18.26	17.26	15.24	19.66
XH5F-5015	50	36.83	33.50	32.50	30.48	34.90
XH5F-6815	68	48.26	44.93	43.93	41.91	46.33
XH5F-8015	80	55.88	52.55	51.55	49.53	53.95

XH5B-□□15-□  
(Straight, SMT Pins)



### Mounting Holes



(Tolerance: ±0.03)  
Note: The overall pattern pitch tolerance for the board is ±0.03. Do not accumulate error. The 1.6<sub>±0.03</sub> diameter holes are for the positioning bosses. Use metal masks to prevent solder from entering these holes.

Table of Dimensions

Model	Number of contacts	A	B	C	D	E	F	G
XH5B-1215-□	12	12.70	9.37	8.37	6.35	10.77	7.60	4: 6.25 5: 9.05 6: 13.65
XH5B-2615-□	26	21.59	18.26	17.26	15.24	19.66	17.76	
XH5B-5015-□	50	36.83	33.50	32.50	30.48	34.90	17.76	
XH5B-6815-□	68	48.26	44.93	43.93	41.91	46.33	17.76	
XH5B-8015-□	80	55.88	52.55	51.55	49.53	53.95	17.76	

Note: □ is replaced by 4 to 6 to indicate the connector height type.

# XH5

## Ordering Information

Right-angle, SMT Pins



Number of contacts	Model	Quantity per reel (pcs)
12	XH5F-1215	560
26	XH5F-2615	
50	XH5F-5015	
68	XH5F-6815	
80	XH5F-8015	

Straight, SMT Pins



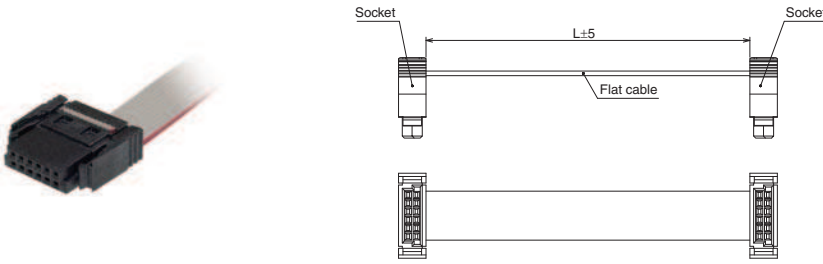
Number of contacts	Height (mm)	Model	Quantity per reel (pcs)
12	6.25	XH5B-1215-4	280
	9.05	XH5B-1215-5	280
	13.65	XH5B-1215-6	170
26	6.25	XH5B-2615-4	280
	9.05	XH5B-2615-5	280
	13.65	XH5B-2615-6	170
50	6.25	XH5B-5015-4	280
	9.05	XH5B-5015-5	280
	13.65	XH5B-5015-6	170
68	6.25	XH5B-6815-4	280
	9.05	XH5B-6815-5	280
	13.65	XH5B-6815-6	170
80	6.25	XH5B-8015-4	280
	9.05	XH5B-8015-5	280
	13.65	XH5B-8015-6	170

# XH5H Cable with Connectors on Both Ends

## Dimensions

(Unit: mm)

XH5H-□□10-□□



**Note:** The figure shows Connectors with 12 pins.

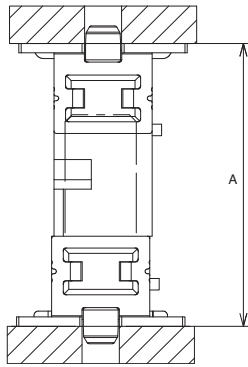
**Table of Dimensions**

Model	Number of contacts	L
XH5H-1210-10	12	100
XH5H-1210-20	12	200
XH5H-1210-30	12	300
XH5H-2610-10	26	100
XH5H-2610-20	26	200
XH5H-2610-30	26	300
XH5H-5010-10	50	100
XH5H-5010-20	50	200
XH5H-5010-30	50	300
XH5H-6810-10	68	100
XH5H-6810-20	68	200
XH5H-6810-30	68	300
XH5H-8010-10	80	100
XH5H-8010-20	80	200
XH5H-8010-30	80	300

## Ordering Information

Cable with Connectors on Both Ends			
Number of contacts	Length (mm)	Model	Minimum packaging unit (pcs)
12	100	XH5H-1210-10	1
	200	XH5H-1210-20	
	300	XH5H-1210-30	
26	100	XH5H-2610-10	
	200	XH5H-2610-20	
	300	XH5H-2610-30	
50	100	XH5H-5010-10	
	200	XH5H-5010-20	
	300	XH5H-5010-30	
68	100	XH5H-6810-10	
	200	XH5H-6810-20	
	300	XH5H-6810-30	
80	100	XH5H-8010-10	
	200	XH5H-8010-20	
	300	XH5H-8010-30	

● Stacking connections

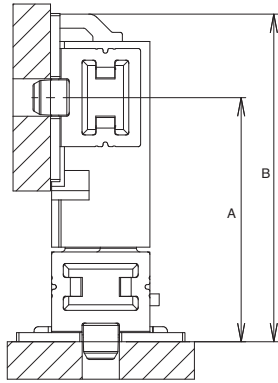


Model combination		A
Plug	Socket	
XH5E-□□15-1	XH5B-□□15-4	8.0
XH5E-□□15-2	XH5B-□□15-4	9.5
XH5E-□□15-3	XH5B-□□15-4	11.1
XH5E-□□15-1	XH5B-□□15-5	10.8
XH5E-□□15-2	XH5B-□□15-5	12.3
XH5E-□□15-3	XH5B-□□15-5	13.9
XH5E-□□15-1	XH5B-□□15-6	15.4
XH5E-□□15-2	XH5B-□□15-6	16.9
XH5E-□□15-3	XH5B-□□15-6	18.5

● Vertical connection

Right-angle Pins: Plug

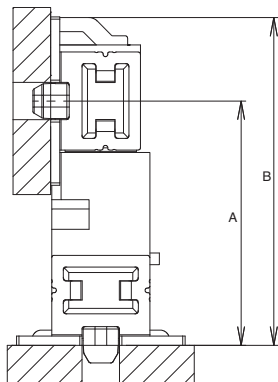
Straight Pins: Socket



Model combination		A	B
Plug	Socket		
XH5A-□□15	XH5B-□□15-4	7.65	11.25
	XH5B-□□15-5	10.45	14.05
	XH5B-□□15-6	15.05	18.65

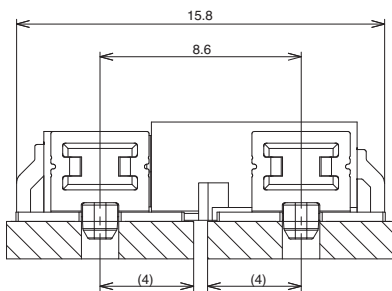
Right-angle Pins: Socket

Straight Pins: Plug



Model combination		A	B
Plug	Socket		
XH5E-□□15-1	XH5F-□□15	8.95	12.55
XH5E-□□15-2		10.45	14.05
XH5E-□□15-3		12.05	15.65

● Horizontal connection



Model combination	
Plug	Socket
XH5A-□□15	XH5F-□□15

## Safety Precautions

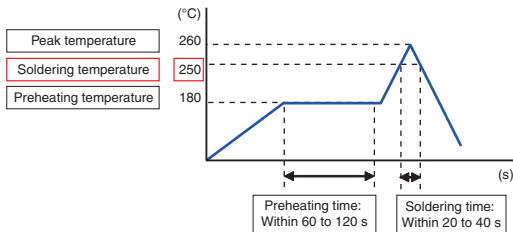
### Precautions for Correct Use

#### ●Soldering Conditions

- Recommended Reflow Conditions

Maximum temperature: 260°C

Time: Within 20 to 40 s



These conditions, however, depend on the type of solder, the manufacturer, the amount of solder, the size of the circuit board, and the other mounting materials. You must check and select the actual conditions.

#### ●Metal Mask Thickness for Cream Solder Printing

We recommend a metal mask thickness of 0.18 to 0.20 mm for cream solder printing. These conditions, however, depend on the type of solder, the manufacturer, the amount of solder, the size of the circuit board, and the other mounting materials. You must check and select the actual conditions.

#### ●Pin Deformation

The pins will deform if you subject them to an excessive load. Deformed pins will reduce solderability when the Connectors are mounted. Do not drop the Connectors or handle them roughly. Do not connect or disconnect Connectors that are not mounted to a circuit board. Doing so may deform the pins.

#### ●Soldering in an Automatic Solder Bath after Reflow Soldering

To prevent the rise of flux, mask the circuit board positioning boss holes with tape before you perform automatic soldering. If you mount Connectors on the edges of the circuit boards, make sure that the solder surface does not come into contact with the Connectors and that flux does not adhere to contact surfaces.

#### ●Application Precautions

- Confirm that there is no excessive misalignment or inclination in the mating contact portion between the plug and socket before mating the Connector. Make sure that the Connector is mated all the way to the back. If the Connector is not mated all the way to the back, contact reliability may be lost.
- Do not apply an extreme load during Connector insertion or removal. The Connector may be damaged, and contact failure may result. Twist the plug and socket as little as possible when mating the Connector. Not doing so may deform the terminals or housing or crack the housing.
- Do not insert a foreign object, such as tweezers, into the Connector mating contact portion. Doing so may cause the plating to peel off or deform the terminals.

#### ●Board Mounting Precautions

Be careful of board warping. Warping that is too severe may cause faulty soldering.

#### ●Storage

- Do not store the Connectors in locations subject to dust or high humidity.
- Do not store the Connectors in locations close to sources of gasses such as ammonia gas or sulfide gas.

- Application examples provided in this document are for reference only. In actual applications, confirm equipment functions and safety before using the product.
- Consult your OMRON representative before using the product under conditions which are not described in the manual or applying the product to nuclear control systems, railroad systems, aviation systems, vehicles, combustion systems, medical equipment, amusement machines, safety equipment, and other systems or equipment that may have a serious influence on lives and property if used improperly. Make sure that the ratings and performance characteristics of the product provide a margin of safety for the system or equipment, and be sure to provide the system or equipment with double safety mechanisms.

**Note: Do not use this document to operate the Unit.**