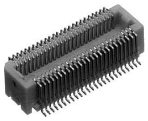
NAiS

NARROW-PITCH CONNECTORS FOR BOARD-TO-BOARD CONNECTION

NARROW PITCH (0.5mm) CONNECTORS P5 SERIES – FLOATING TYPE –

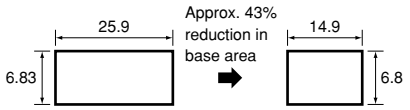
Socket



Header

FEATURES

1. The 0.5mm pitch stacking connector with a built-in floating mechanism.
2. Further reduction of equipment size is now possible.



P8 series with 50 contacts (0.8mm pitch)

P5 series with 50 contacts (0.5mm pitch)

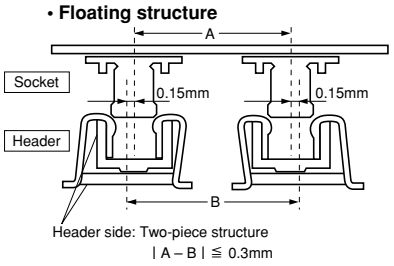
3. The original structure ensures higher reliability performance for both electrical and mechanical connections.
- Flux-creeping prevention structure (header)
- Simple lock mechanism

4. Automatic Mounting
- Embossed tape packaging is standard.

APPLICATIONS

Cellular telephone, PHS, Portable data terminals

What is a floating structure?
The header is a two-piece structure that can absorb any variation caused when a connector (header and socket) is integrated into a printed circuit board. (When two sets of connectors are used as shown below, a maximum deviation of 0.3mm can be absorbed.)



PRODUCT TYPES

Mated height	No. of contacts		Part No.	Packing quantity	
				Inner carton (1 reel)	Outer carton
5 mm	20	Socket	AXN520045P	1,000 pcs.	2,000 pcs.
		Header	AXN620585P		
	30	Socket	AXN530045P		
		Header	AXN630585P		
	40	Socket	AXN540045P		
		Header	AXN640585P		
	50	Socket	AXN550045P		
		Header	AXN650585P		
	60	Socket	AXN560045P		
		Header	AXN660585P		
	80	Socket	AXN580045P		
		Header	AXN680585P		
	100	Socket	AXN500045P		
		Header	AXN600585P		

Note) Connectors are available in a standard embossed tape package (1,000 pcs/lot). Minimum ordering quantity is a single reel.
Samples for mounting confirmation: Please consult us. (See “Regarding sample orders to confirm proper mounting” on page 9.)
Samples: Small lot orders for the above models are possible.

SPECIFICATIONS

1. Characteristics

Item		Specifications	Conditions
Electrical characteristics	Rated current	0.2A	
	Rated voltage	60V AC/DC	
	Breakdown voltage	150V AC for 1 min.	Detection current: 1mA
	Insulation resistance	Min. 1000MΩ	Using 500V DC megger
	Contact resistance	Max. 80mΩ	Measured based on the HP4338B measurement method of JIS C 5402
Mechanical characteristics	Composite insertion force	Max. 0.981N {100gf} × no. of contacts (initial)	
	Composite removal force	Min. 0.0785N {8gf} × no. of contacts	
	Post holding force	Min. 2.94N {300gf}/2 contacts	Measures the maximum load in the post axial direction until removal
Environmental characteristics	Ambient temperature	–55°C to +85°C	No freezing at low temperatures
	Soldering heat resistance	Max. peak temperature of 245°C	Infrared reflow soldering
		300°C within 5 seconds	Soldering iron
	Thermal shock resistance (header and socket mated)	5 cycles, insulation resistance min. 100MΩ, contact resistance max. 80mΩ	Sequence / Temperature (°C) / Time (minutes): 1: -55^{+0}_{-3} / 30; 2: 25^{+10}_{-5} / Max. 5; 3: 85^{+3}_{-0} / 30; 4: 25^{+10}_{-5} / Max. 5
	Humidity resistance (header and socket mated)	120 hours, insulation resistance min. 100MΩ, contact resistance max. 80mΩ	Bath temperature 40±2°C, humidity 90 to 95% R.H.
	Saltwater spray resistance (header and socket mated)	24 hours, insulation resistance min. 100MΩ, contact resistance max. 80mΩ	Bath temperature 35±2°C, saltwarter concentration 5±1%
	H_2S resistance (header and socket mated)	48 hours, contact resistance max. 80mΩ	Bath temperature 40±2°C, gas concentration 3±1 ppm, humidity 75 to 80% R.H.
	SO_2 resistance (header and socket mated)	48 hours, contact resistance max. 80mΩ	Bath temperature 40±2°C, gas concentration 10±3 ppm, humidity 90 to 95% R.H.
Lifetime characteristics	Insertion and removal life	20 times	Repeated insertion and removal speed of max. 200 times/hours
Unit weight		30 contacts; Socket: 0.19g Header: 0.32g 50 contacts; Socket: 0.29g Header: 0.50g	

2. Material and surface treatment

Part name	Material	Surface treatment
Molded portion	Heat-resistant resin (UL94V-0)	—
Contact	Copper alloy	Contact portion: Au plating over Ni Terminal portion: Au plating over Ni

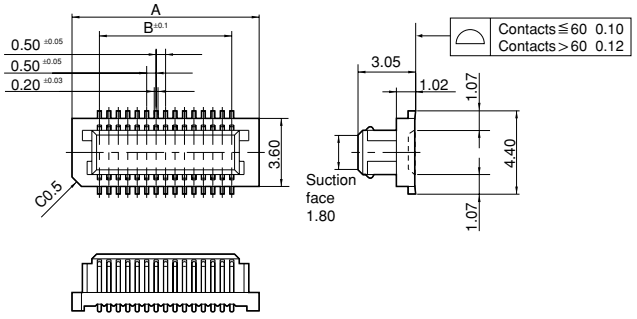
DIMENSIONS

mm General tolerance ±0.2

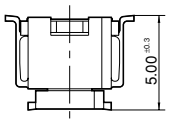
• Socket

Dimension table (mm)

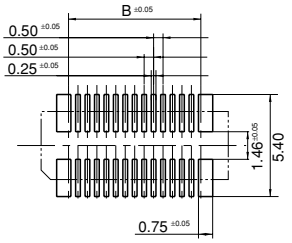
No. of contacts	A	B
20	7.40	4.50
30	9.90	7.00
40	12.40	9.50
50	14.90	12.00
60	17.40	14.50
80	22.40	19.50
100	27.40	24.50



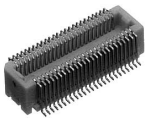
Stacking mated diagram



Recommended PC board pattern (TOP VIEW)



• Header



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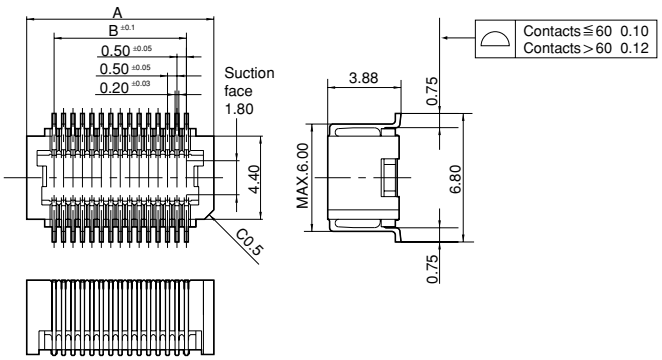

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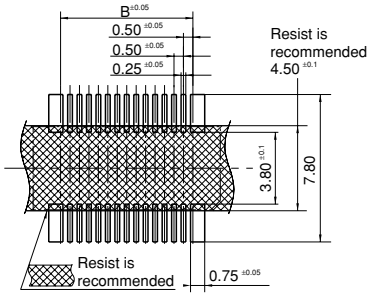


EMBOSSED TAPE DIMENSIONS

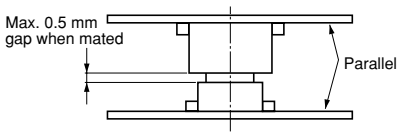
Please refer to page 65.

NOTES

1. Preventing vibration and shock

To prevent the PC board from drop-off faults and to protect soldered spots from direct stress, use vibration-proof pads across boards.

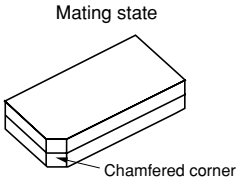
Fix the PC boards in place or install a stopper so that the gap between the connectors is less than 0.5 mm and that their mating is level.



2. Prevention of reverse mating

The socket and header are protected from reverse mating by a molded resin key. Excessive mating force may damage the key, so be sure to match chamfered corners when mating.

• Floating type

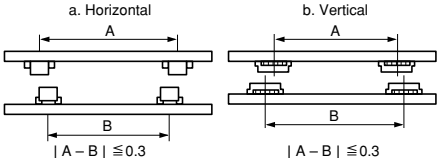


3. Static electricity

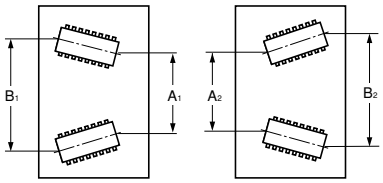
This type of socket has the terminals exposed from the connector walls, and therefore if they are touched with anything metal, a short circuit will occur. Also, if the terminals are touched by hand, the static electricity may damage the IC.

4. About floating-type connectors

(1) When two floating-type connectors are used on header, distance tolerance between connectors is 0.3mm max.



(2) If rotational error exists between two connectors, distance tolerance between the two connectors is as follows:



$| A_1 - A_2 | \leqq 0.3$

$| B_1 - B_2 | \leqq 0.3$

However, A1 is mated with A2, and B1 is mated with B2.

(3) Please consult us regarding allowable installation pitch tolerance between connectors when using two connectors that have differing number of terminals.

Regarding general notes, please refer to pages 8 and 9.