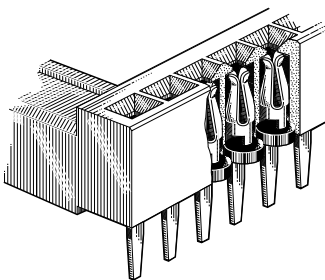
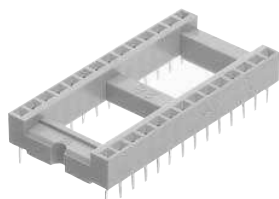


Panasonic
ideas for life

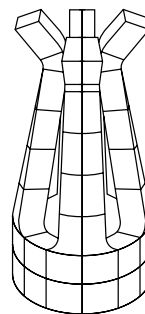
**μSOCKET SERIES
IC SOCKET WITH
HIGH RELIABILITY**

**μIC SOCKETS
(AXS2)**

CONSTRUCTION OF CONTACT



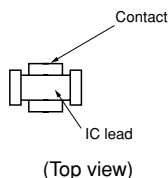
Tulip-style μ contact, in which all contacts are arrayed facing the contact surface of the IC lead.



Contact design using ABAQUS

FEATURES

1. Long life by four-face contact



Inside contacts are so aligned to permit a firm four-face contact with an IC lead. Lower insertion force leads to long life.

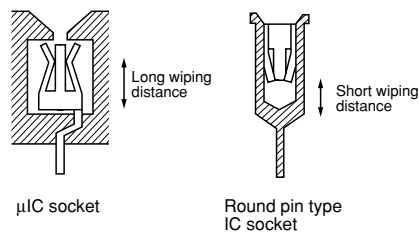
2. Array contact facilitates smooth insertion and removal.

Contact status comparison

μIC socket					
Round pin type IC socket					

All contacts are arrayed facing the contact surface of the IC lead, allowing for smooth insertion and removal, with minimum application of force. This eliminates inner contacts, preventing the IC from snagging when being inserted.

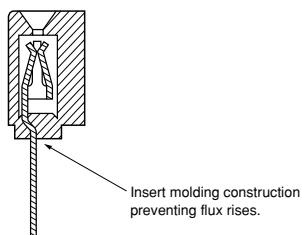
3. The tulip-shaped contact provides greater contact wiping action.



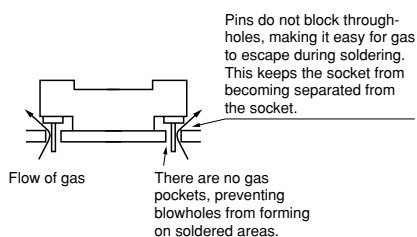
4. Porosity treatment provides superior corrosion resistance.

Porosity treatment is applied to the contact surfaces. Contact reliability and anti-corrosiveness equal that of thin or thick gold plating.

5. Insert molding construction prevents flux from entering the socket body.



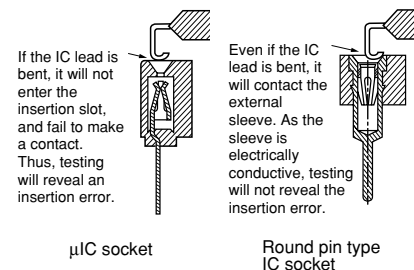
6. Solder "blow holes" are eliminated by unique socket construction.



7. Frame construction facilitates discovery and prevention of IC lead insertion errors.

Because the contacts are hidden inside the frame, a contact will not be made unless the IC is properly inserted. This makes it easy to test for insertion errors.

Lead bend during IC insertion



8. Compliance with RoHS' Directive

Environmentally friendly, the connectors' comply with Europe's RoHS' Directive. Cadmium, lead, mercury, hexavalent, chromium, PBB and PBDE are not used.

Low Insertion/Removal Force Allows for Smooth Insertion

• Comparison of overall insertion/removal force of μ IC socket and round-pin type IC socket

We compared the force required to insert and remove a 40-pins type IC using a specialized insertion/removal testing device. Modifying the conventional standard method of measuring the maximum force on a single pin using a gauge, we continually measured the insertion/removal force for the IC as a whole.

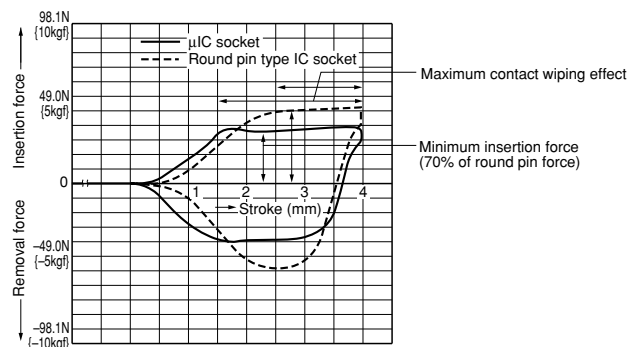


Fig. 1

• Comparison of single-pin insertion force of μ IC socket and round-pin type IC socket

Using a gage, we measured the force on each pin applied during insertion. The test showed that insertion force was less with the μ IC socket than with the round-pin type IC socket, and there was less variance as well.

• Distribution of insertion force of a single pin

Sample: 50 pins

Condition:

Measuring gauge . . .
0.60×0.30 steel gauge

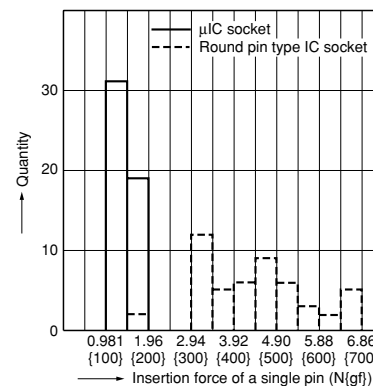


Fig. 2

Low Abrasion on Contact Surface Increases Lifetime

• Comparison of contact surface of μ IC socket and round-pin type IC socket after 100 insertions and removals

Insertion/removal condition: Inserter used for IC insertion

	Expanded photo of contact surfaces	Au plating distribution of contact surfaces
μ IC socket		
Round pin type IC socket		
Description	With the μ IC socket, the contact surface area is large, and there is little abrasion. With the round-pin type IC socket, however, the contact surface area is small, and there are deep abrasions.	Almost all of the Au plating remains on the μ IC socket, but none remains on the contact area of the round-pin type IC socket.

ORDERING INFORMATION

AXS 1 K20: μ IC sockets

<No. of contacts (2 digits)>

06: 6 contacts 08: 8 contacts 14: 14 contacts 16: 16 contacts
 18: 18 contacts 20: 20 contacts 24: 24 contacts 28: 28 contacts
 32: 32 contacts 40: 40 contacts

<Terminal layout and shape>

1: DIL terminal layout, solder DIP terminal

7: DIL terminal layout, solder DIP terminal (24 contacts: row pitch is 7.62 mm)

<Surface treatment (Contact portion/Terminal portion)>

1: Au plating/Sn plating

PRODUCT TYPES

Terminal portion		Sn plating	Packing quantity	
Contact portion		Au plating		
Type	No. of contact	Part No.	Inner carton (Stick)	Outer carton
DIL	6	AXS200611K	50 pcs.	300 pcs.
	8	AXS200811K	50 pcs.	300 pcs.
	14	AXS201411K	25 pcs.	300 pcs.
	16	AXS201611K	25 pcs.	300 pcs.
	18	AXS201811K	20 pcs.	300 pcs.
	20	AXS202011K	20 pcs.	300 pcs.
	24*1	AXS202411K	15 pcs.	300 pcs.
	24*2	AXS202471K	15 pcs.	300 pcs.
	28	AXS202811K	15 pcs.	300 pcs.
	32	AXS203211K	10 pcs.	300 pcs.
	40	AXS204011K	10 pcs.	300 pcs.

*1 Pitch: 15.24mm

*2 Pitch: 7.62mm

Note) All products are stick packaged.

SPECIFICATIONS

1. Characteristics

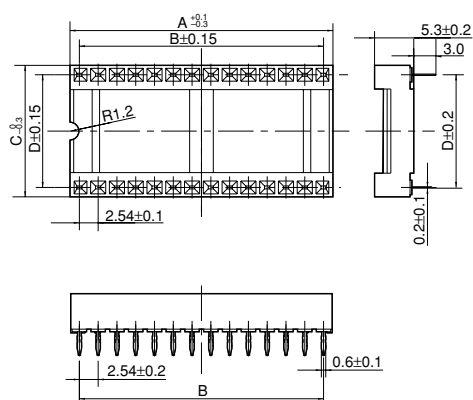
Item		Specifications	Condition
Electrical characteristics	Rated current	1A	
	Breakdown voltage	1,000V AC for 1min.	Detection current: 1mA
	Insulation resistance	Min. 1,000M Ω	Using 500V DC megger
	Contact resistance	Max. 20m Ω	Measured based on the HP4338B measurement method of JIS C 5402
	Electrostatic capacitance	Max. 2pF	at 1kHz
Mechanical characteristics	Vibration resistance	10 to 2,000Hz, Either 147m/s ² {15G} or 1.52mm double amplitude, whichever is less	No interruption of current longer than 1 μ s does not occur.
	Shock resistance	980m/s ² {100G}	No interruption of current longer than 1 μ s does not occur.
	Insertion force of a single pin	Max. 2.70N {275gf}	Measured by steel-gauge with 0.60×0.30mm
	Removal force of a single pin	Min. 0.392N {40gf}	Measured by steel-gauge with 0.40×0.20mm
	Holding force of a pin	Min. 14.7N {1.5kgf}	—
	Insertion and removal life	Min. 1,000 times	Measured by steel-gauge with 0.50×0.25mm
Applicable leads		0.38 to 0.61×0.20 to 0.35mm	
Environmental resistance	H ₂ S gas	Contact resistance after test: Max. 20m Ω	240 hours exposure, 75 to 80% R.H., 40±2°C, 3±1 ppm
	SO ₂ gas	Contact resistance after test: Max. 20m Ω	96 hours exposure, 90 to 95% R.H., 40±2°C, 10±3 ppm
	Humidity	Contact resistance after test: Max. 20m Ω Insulation resistance after test: Min. 300M Ω	240 hours exposure, 90 to 95% R.H., 40±2°C
	Thermal shock resistance	Contact resistance after test: Max. 20m Ω Insulation resistance after test: Min. 300M Ω	Low temperature: -55°C (30 min.) 1 cycle High temperature: +125°C (30 min.) 1 cycle No. of cycles: 5 cycles
	Ambient temperature	-55°C to +125°C	No freezing at low temperatures
	Soldering temperature	260°C: within 5 sec. (soldering tub) 300°C: with 2 sec. (soldering iron)	—

2. Materials and surface treatment

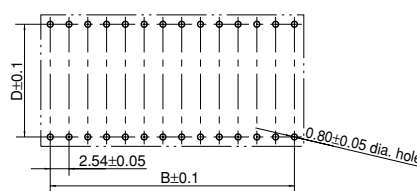
Part name	Material	Surface treatment
Frame	Glass-reinforced PBT (UL94V-0)	—
Contact	Copper alloy	Contacting portion: Ni plating on base, Au plating on surface Terminal portion: Ni plating on base, Sn plating on surface

DIMENSIONS

• DIL Solder-DIP type



Recommended PC board pattern
(Bottom view)



Note) Rib is not provided for 6, 8, 14, and 16 contacts;
1 rib is provided for 18, 20, 24, and 28 contacts;
2 ribs are provided for 32 and 40 contacts.

Dimension table (mm)

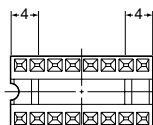
No. of contacts	A	B	C	D
6	7.62	5.08	10.16	7.62
8	10.16	7.62	10.16	7.62
14	17.78	15.24	10.16	7.62
16	20.32	17.78	10.16	7.62
18	22.86	20.32	10.16	7.62
20	25.4	22.86	10.16	7.62
24*1	30.48	27.94	17.78	15.24
24*2	30.48	27.94	10.16	7.62
28	35.56	33.02	17.78	15.24
32	40.64	38.10	17.78	15.24
40	50.8	48.26	17.78	15.24

*1: Row pitch is 15.24 mm

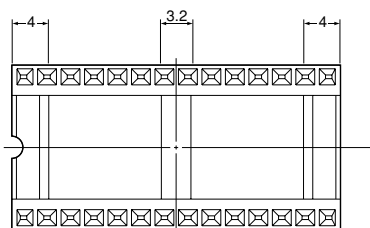
*2: Row pitch is 7.62 mm

• Rib position (for DIL type)

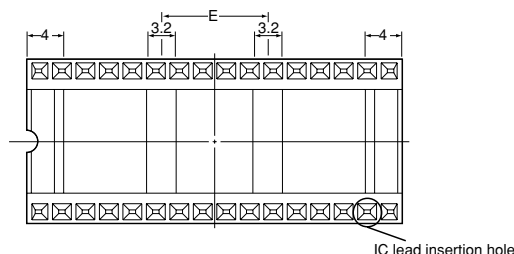
6 to 16 contacts



18 to 28 contacts



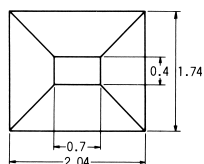
32 to 40 contacts



Dimension table (mm)

No. of contacts	E
32	11.5
40	15.5

• IC lead insertion hole



Note) Do not insert components with leads greater than applicable dimensions. Applicable leads dimensions: 0.38 to 0.61×0.20 to 0.35mm.

NOTES

1. The μ IC socket has a squared IC terminal guide aperture, in order to avoid excessive displacement of the contact. For this reason, the pin bending correction angle of the μ IC socket is larger than that of the round-pin type. Please insert the IC after correcting to ensure that all pins are inside the IC terminal insertion aperture. This will allow for a smooth insertion. Particular care is needed if the IC pin tips are flat, with no rounding.

2. For reference, appropriate lead dimensions are 0.38 to 0.61 × 0.20 to 0.35.

Please do not insert leads with dimensions exceeding these dimensions. Doing so could cause deformation in the contact.

3. When soldering with a dip solder bath, maintain the temperature at 260°C or less, and time at no more than 5 seconds. If soldering with a soldering iron, maintain the temperature of the tip at no more than 300°C, and the time at no more than 2 seconds. Do not apply force to the pins while soldering.

4. Flux of the non-corroding resin type should be used.

5. Liquid flux of minimum chemical action type alcohol can be used.

6. Sufficient care should be taken to prevent flux from entering the upper surface of the IC socket.

7. For mounting and removing the IC, a special tool for insertion and removal of IC's should be used.

8. Repeated flexing of the terminals may lead to the breakage of the integrally molded portions and cause flux to rise up when soldering.

Regarding general notes, please refer to page 12.

For other details, please verify with the product specification sheets.