Panasonic
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MINIATURE INTERFACE CONNECTOR COMPLIANT WITH USB 2.0/ON-THE-GO

Mini USB (AXJ4) CONNECTORS

Compliance with RoHS Directive

FEATURES

1. Compliant with USB 2.0-OTG (Transmission speed: 480 Mbps)
2. 7.7 mm deep space-saving size
Since the depth is 7.7 mm, the occupied space is approx.
15% smaller than competing standard connectors (depth: approx 9.0 mm).
3. Reinforced fixing strength between the body and shell
The high strength allows for the forcible insertion of a plug.

APPLICATIONS

1. DSC, PMP, DVC, IC recorders
2. Mobile phones, PDA, smart phones
3. Compact PC peripherals (e.g. external HDD, memory card readers)
4. Game machines

ORDERING INFORMATION

AXJ [4] [1] [ ] [1] [1] [0] [G]

4: Mini USB connectors

<Receptacle>
1: 5 contacts receptacle
(Compliant with the Mini USB standard)

<Composition>
3: Mini B right angle type
6: Mini AB right angle type

<Mounting type>
1: Standard, with suction tape

<Terminal and Retention fitting>
1: Terminal portion: SMD,
Retention fitting portion: SMD,
Positioning bosses: Provided

<Flange shape>
0: Without flange

<Package>
G: Embossed tape packaging

PRODUCT TYPES

Type		Terminal shape	Positioning bosses	Flange	Part number	Packing quantity	
						Inner carton (Embossed)	Outer carton
5 contacts receptacle (Compliant with the Mini USB standard)	Mini B Right angle type	Terminal position: SMD Clips (retention fitting): SMD	Provided	Without flange	AXJ413110G	1,200	6,000
	Mini AB Right angle type				AXJ416110G		

SPECIFICATIONS

1. Characteristics

Item		Specifications	Conditions
Electrical characteristics	Rated current	1.0A	
	Rated voltage	30V DC/AC	
	Contact resistance	Max. 50mΩ	EIA-364-23 (Inductive resistance to wire is not included)
	Insulation resistance	Min. 100MΩ	EIA-364-21 Using 100V DC megger
	Breakdown voltage	100V AC (Dielectric breakdown must not occur during a 1 min. application)	EIA-364-20 Detection current: 1mA
	Electrostatic capacity	Max. 2pF	EIA-364-30 (Measure it between the adjacent terminals of the unmated connector at a frequency of 1 kHz.)
Mechanical characteristics	Composite insertion force (initial)	Max. 35N {3.57kgf}	EIA-364-13 Insert and remove a plug at a speed of 12.5 mm/min.
	Composite removal force (initial)	Min. 7N {0.714kgf}	
Environmental characteristics	Ambient temperature	–55°C to 85°C	No freezing or condensation in low temperatures
	Storage temperature	–55°C to 85°C (–40°C to 50°C for packaging materials)	No freezing or condensation in low temperatures
	Vibration resistance	Discontinuity: Max. 1μs Contact resistance: Max. 50mΩ Appearance: No abnormality	EIA-364-28 Apply vibration in three directions including the mating axis that are perpendicular to one another for 15 minutes respectively with a 100 mA DC current applied. Cord length: 100mm Fix the cord end.
	Impact resistance	Discontinuity: Max. 1μs Contact resistance: Max. 50mΩ Appearance: No abnormality	EIA-364-27 Acceleration: 294m/s²(30G) Duration: 11 ms, Application directions: 6 surfaces (X, Y, and Z directions) Number of applications: 3 times respectively (Total: 18 times) Cord length: 100mm Fix the cord end.
	Heat resistance (mated)	250 hours Contact resistance: Max. 50mΩ Withstand voltage: 100V AC dielectric breakdown must not occur during a one-minute application. Insulation resistance: Min. 100MΩ Appearance: No abnormality	EIA-364-17 Temperature: 85±2°C
	Low temperature resistance (mated)	96 hours Contact resistance: Max. 50mΩ Withstand voltage: 100V AC dielectric breakdown must not occur during a one-minute application. Insulation resistance: Min. 100MΩ Appearance: No abnormality	Temperature: –55±2°C
	Humidity resistance (mated)	7 cycles Contact resistance: Max. 50mΩ Withstand voltage: 100V AC dielectric breakdown must not occur during a one-minute application. Insulation resistance: Min. 100MΩ Appearance: No abnormality	EIA-364-31 Method III
	Temperature cycle test (mated)	10 cycles Contact resistance: Max. 50mΩ Withstand voltage: 100V AC dielectric breakdown must not occur during a one-minute application. Insulation resistance: Min. 100MΩ Appearance: No abnormality	Sequence 1. –55±3°C, 30 minutes 2. ~, Max. 5 minutes 3. 85±2°C, 30 minutes 4. ~, Max. 5 minutes
	Saltwater spray resistance (mated)	48 hours Contact resistance: Max. 100mΩ Appearance: No abnormality	Bath temperature: 35±2°C Saltwater concentration: 5±1% Wash the connector with water at room temperature after the test, and then dry it at room temperature.
	Hydrogen sulfide	96 hours Contact resistance: Max. 100mΩ Appearance: No abnormality	Temperature :40±2°C Humidity: 75 to 80% Gas concentration: 3±1ppm
Soldering temperature resistance	Reflow soldering	Peak temperature: Max. 260°C	
	Manual soldering	300±10°C: Max. 5 s 350±10°C: Max. 3 s	

2. Material and surface treatment

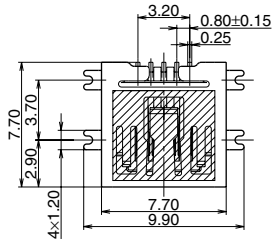
Part name		Material	Surface treatment
Resin-molding portion		Heat-resistant resin (UL94V-0)	—
Metal parts	Contact	Copper alloy	Contact portion: Ni plating on base, Au plating on surface Terminal portion: Ni plating on base, Sn plating on surface
	Shell	Copper alloy	Ni plating on base, Sn plating on surface
Pickup tape		Heat-resistant resin	—

DIMENSIONS

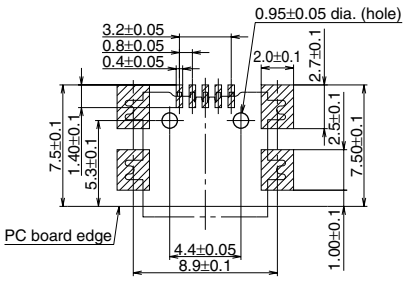
mm General tolerance: ±0.3

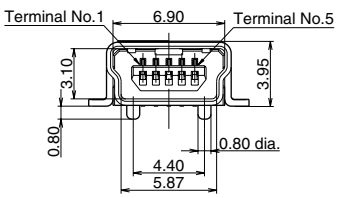
1. Mini B Right angle type

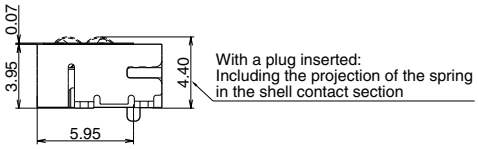
AXJ413110G



Recommended PC board pattern
(TOP VIEW)



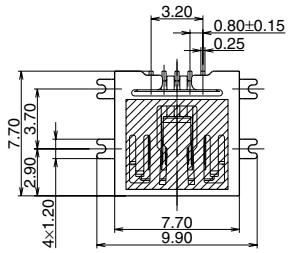




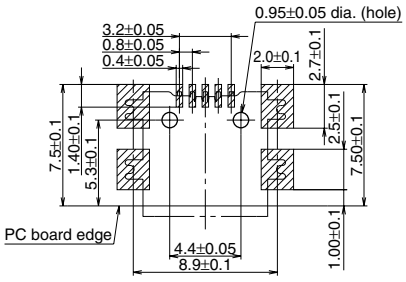
2. Mini AB Right angle type

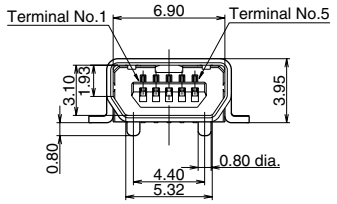
mm General tolerance: ±0.3

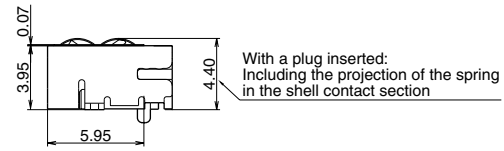
AXJ416110G



Recommended PC board pattern
(TOP VIEW)

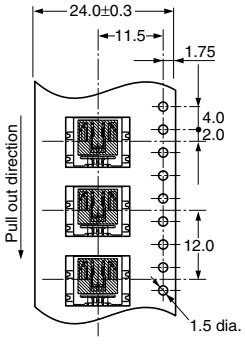




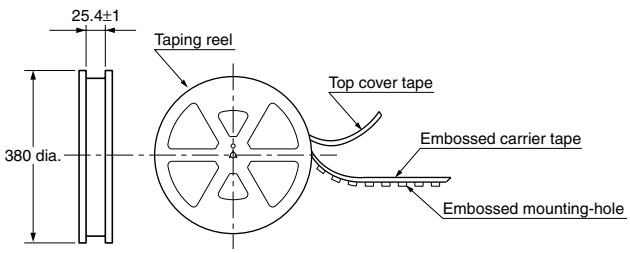


EMBOSSED TAPE DIMENSIONS (unit: mm)

• Tape dimensions (Conforming to JIS C 0806-3 1999)



• Reel dimensions (Conforming to EIAJ ET-7200B)



NOTES

1. Use of a cover is recommended when using this device in order to prevent scraps, dust, dirt, etc., from getting inside of the receptacle.

2. PC board design

Please refer to the recommended PC board pattern to ensure the strength of soldered portion of terminals.

3. Soldering

1) Manual soldering

• Please set up temperature and applied time of soldering iron as indicated in specification sheet.

• Please use soldering iron after confirming removal of dispersed solder flux on the contact surface by use of magnifying glass after each soldering.

• Please properly clean soldeing iron.

2) Reflow soldering

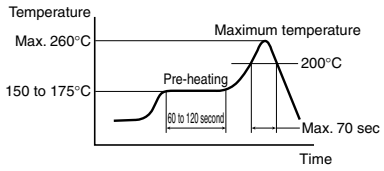
• Screen printing is recommended for cream solder printing.

• Screen thickness of 0.15mm is recommended for cream solder printing.

• When applying different thickness of screen, please consult us.

• Depending upon size of connector, self alignments may not be expected. Please pay attention to align terminals and soldered pads.

• The following diagram shows the recommended reflow soldering temperature profile.



• The temperature measured on the PC board surface near connector terminals.

• After reflow soldering, in case of PC board surface the reverse side using reflow soldering, for example an adhesive and so on connector of fixed disposition.

3) Rework of soldering portion

• Rework is one time.

• In case of soldering rework of bridges. Please use a flat-head soldering iron and don't use supplementary solder flux.

• Please use the soldering iron under specification's temperature

4. Since excessive force on the terminals will cause deformation and the integrity of the soldering will be lost during reflow soldering, avoid dropping or rough handling of the product.

5. PC board warpage should be controlled less than 0.03mm to entire length of the connector.

6. Repeated bending of terminals and holding parts can result in terminals breaking.

7. Regarding after soldering connectors on PC boards

• After mounting connectors on PC boards, do not apply excessive loads to the connector by piling up the boards.

• Please do not add the force to the connector during assembled connector on PC board.

8. This connector has metal shell for preventing EMI, when designing an enclosure the followings should be considered. Guide for plug entrance should be arranged in order to prevent distorted insertions. Provide a cover to reinforce the metal shell portions of the receptacle.

9. We recommend the use of a purified-water-based solution for cleaning the PC board. If you use an alcohol-based solution, the surface of the molded part may be whitened. In addition, please carefully monitor the contamination degree of the solution to prevent the solution from re-contaminating the connector contacts.

10. Others

To prevent insulation deterioration of PC board after soldering, please avoid adhesion coating agent to terminals in case of coating.

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