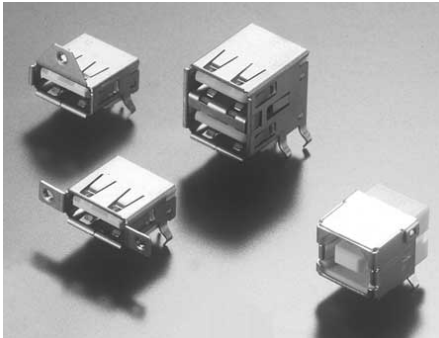




**COMPLIANCE WITH THE USB STANDARD**

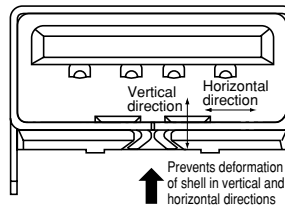
**USB (AXJ1) CONNECTORS**



USB: Universal Serial Bus serial interface for connecting a telephone, board and other peripheral units to a personal computer.

**FEATURES**

- 1. Compliant with the USB standard: permits connection/disconnection while the power is on.
- 2. Resistant structure for mating stress
- 3. Low insertion force/Insertion and removal life 1,500 times



A construction which protects the connector from cable stretching and other external forces is achieved by interfitting the metal shell cover into the molding.

**4. A wide variety is available**

Series A: used for PCs and USB hubs  
Series B: used for peripheral units of PCs

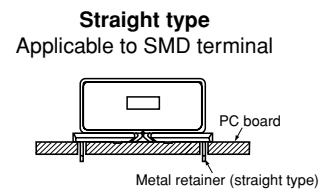
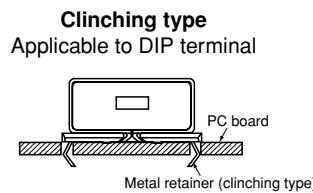
**APPLICATIONS**

- Receptacle
- Series A:** Personal Computers and USB hubs.
- Series B:** Peripheral units of PCs; Printers, speakers, modems, scanners, key boards, joy sticks, computer mouse, telephones and USB hubs

**PRODUCT TYPES**

| Series | No. of port                       | Terminal shape | Holding parts shape  | Flange         | Part no.   | Packing quantity |              |
|--------|-----------------------------------|----------------|--|----------------|------------|------------------|--------------|
|        |                                   |                |  |                |            | Inner carton     | Outer carton |
| A      | 1 port<br>(4 contacts)            | DIP terminal   | Clinching type<br>Applicable board thickness<br>0.8mm to 1.2mm | Side flange    | AXJ111212T | 90               | 900          |
|        |                                   |                |  | Center flange  | AXJ111222T | 90               | 900          |
|        |                                   |                |  | Without flange | AXJ111202T | 90               | 900          |
|        | 2 ports<br>(4 contacts × 2-layer) | DIP terminal   | Clinching type<br>Applicable board thickness<br>0.8mm to 1.2mm | Side flange    | AXJ111512T | 90               | 900          |
|        |                                   |                |  | Without flange | AXJ111502T | 90               | 900          |
|        |                                   |                |  | Without flange | AXJ112202T | 60               | 600          |
| B      | 1 port<br>(4 contacts)            | DIP terminal   | Clinching type<br>Applicable board thickness<br>1.6mm          | Without flange | AXJ112302T | 60               | 600          |
|        |                                   |                | Clinching type<br>Applicable board thickness<br>1.6mm          | Without flange | AXJ115301S | 30               | 900          |

Remark: T: Tray packaging  
S: Tube packaging



# AXJ(1)

## SPECIFICATIONS

### 1. Characteristics

|                               | Item                      | Specifications  | Conditions   |   |
|-------------------------------|---------------------------|---|--|---|
| Electrical characteristics    | Rated current             | 1.0A  |  |   |
|                               | Rated voltage             | 30V DC/AC   |  |   |
|                               | Contact resistance        | 1 Port (receptacle)   | Max. 30mΩ  | EIA-364-23<br>(Inductive resistance for wire is not included) |
|                               |                           | 2 Ports (receptacle)  | Max. 40mΩ  |   |
|                               | Insulation resistance     | Min. 1000MΩ   | EIA-364-21 Using 500V DC megger  |   |
|                               | Breakdown voltage         | Breaking voltage 750V AC for 1min.  | EIA-364-20 Detection current: 1mA  |   |
| Electrostatic capacity        | Max. 2pF                  | EIA-364-30 Measured at 1 kHz between connectors which are not connected.  |  |   |
| Mechanical characteristics    | Composite insertion force | Max. 35N {3.57kgf} (initial)  | EIA-364-13 Measures the insertion and removal force for a plug at the speed of 12.5mm/min. |   |
|                               | Composite removal force   | Min. 10N {1.02kgf}  |  |   |
| Environmental characteristics | Ambient temperature       | 0°C to +40°C (carrying current)   | No freezing at low temperatures  |   |
|                               | Soldering heat resistance | 260°C within 10sec.   | Soldering bath   |   |
|                               |                           | Tip temperature of soldering iron: 300°C within 5sec., 350°C within 3sec. | Soldering iron   |   |
| Storage condition             | -40°C to +60°C            | No freezing at low temperatures   |  |   |
| Lifetime characteristics      | Mechanical life           | 1500 times  | EIA-364-09 Repeated insertion and removal speed of max. 200 times/hours                    |   |
| Unit weight                   |                           | 1 port type: 2.0 g, 2 parts type: 5.5 g                                   |  |   |

### 2. Material and surface treatment

#### 1) Series A

| Part name             | Material                       | Surface treatment  |
|-----------------------|--------------------------------|--|
| Resin-molding portion | Heat-resistant resin (UL94V-0) | —  |
| Contact               | Copper alloy                   | Contact portion: Au plating over Ni<br>Terminal portion: Au plating over Ni (except for top of the terminal) |
| Shell                 | Copper alloy                   | Sn plating over Cu (except for thick of the terminal)  |
| Center clip           | Copper alloy                   | Sn plating over Cu (except for thick of the terminal)  |

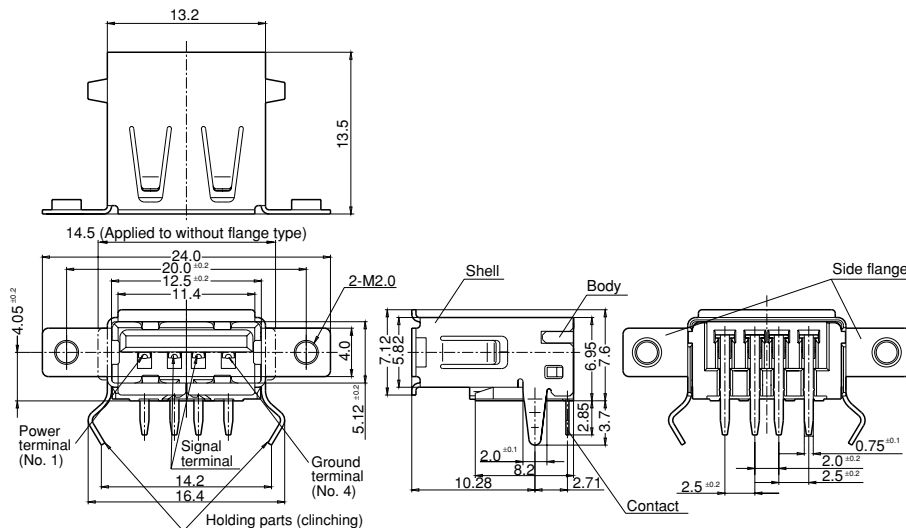
#### 2) Series B

| Part name             | Material            | Surface treatment  |
|-----------------------|---------------------|--|
| Resin-molding portion | PBT resin (UL94V-0) | —  |
| Contact               | Copper alloy        | Contact portion: Au plating over Ni<br>Terminal portion: Au plating over Ni (except for top of the terminal) |
| Shell                 | Copper alloy        | Sn plating over Cu   |

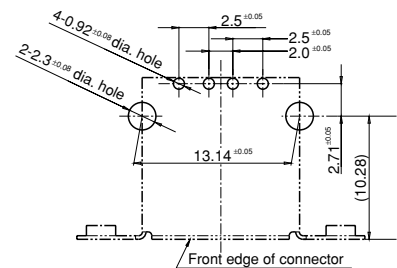
## DIMENSIONS

mm General tolerance: ±0.3

### 1. Series A 1 port DIP terminal with side flange



### Recommended PC board pattern (TOP VIEW)

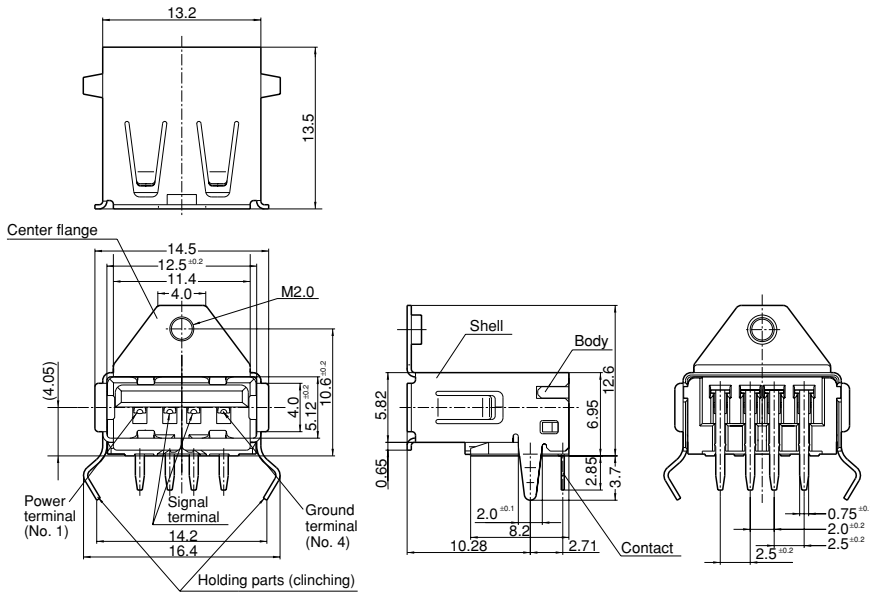


Note) Since product bottom is a metal shell, do not make pattern circuits (to prevent shorting).

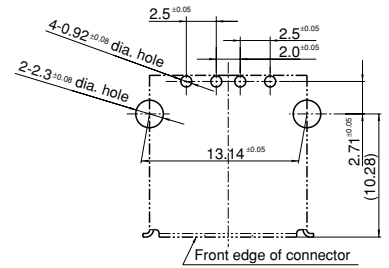
| Part no.  | Flange shape     |
|-----------|------------------|
| AXJ111202 | Without flange   |
| AXJ111212 | With side flange |

## 2. Series A 1 port DIP terminal with center flange

mm General tolerance:  $\pm 0.3$

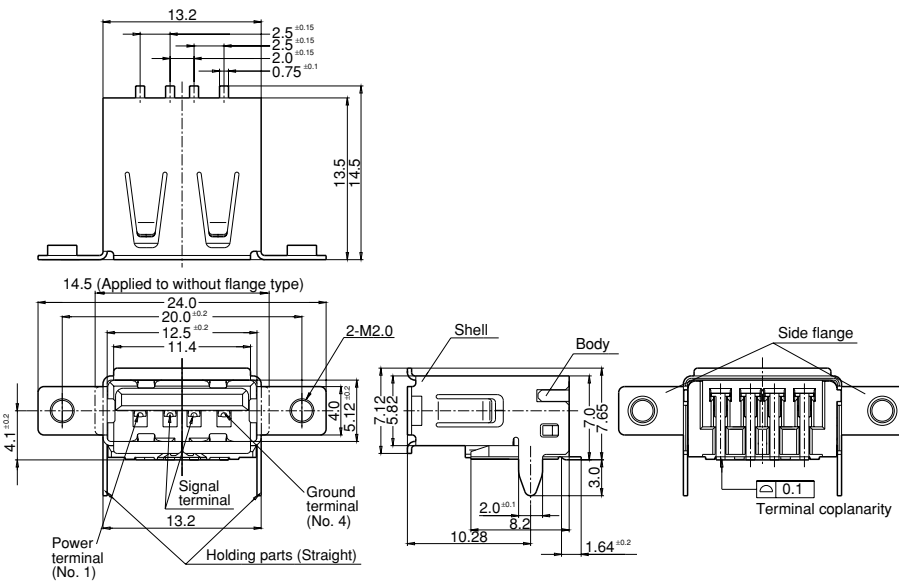


Recommended PC board pattern (TOP VIEW)

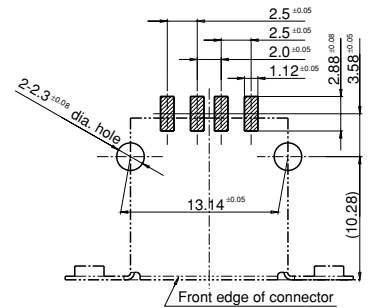


Note) Since product bottom is a metal shell, do not make pattern circuits (to prevent shorting).

## 3. Series A 1 port SMD terminal with side flange



Recommended PC board pattern (TOP VIEW)



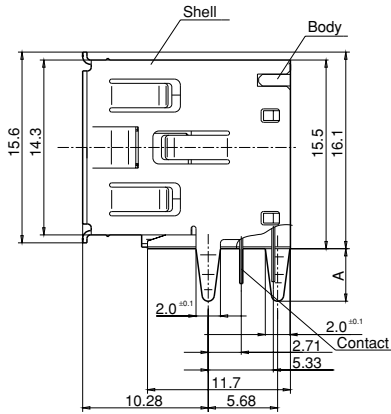
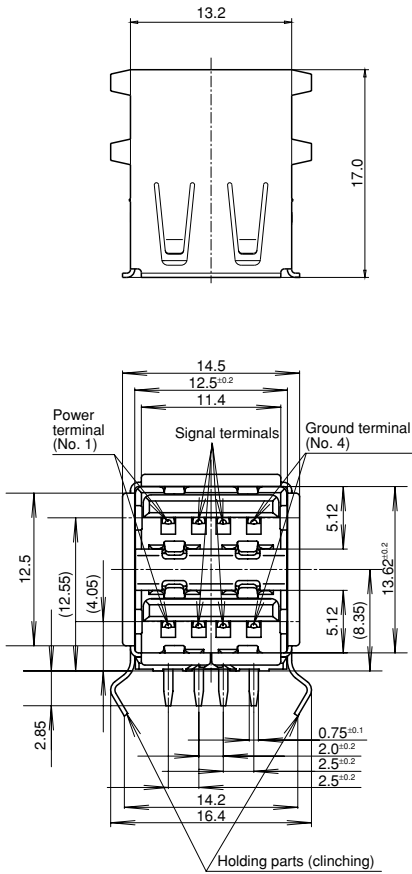
Note) Since product bottom is a metal shell, do not make pattern circuits (to prevent shorting).

| Part no.  | Flange shape     |
|-----------|------------------|
| AXJ111502 | Without flange   |
| AXJ111512 | With side flange |

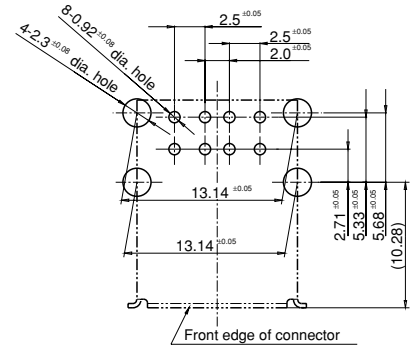
# AXJ(1)

## 4. Series A 2 ports DIP terminal without flange

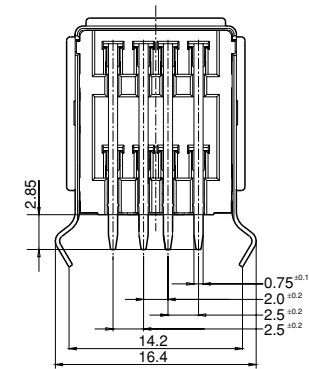
mm General tolerance:  $\pm 0.3$



Recommended PC board pattern (TOP VIEW)



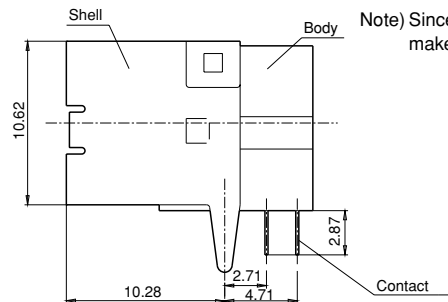
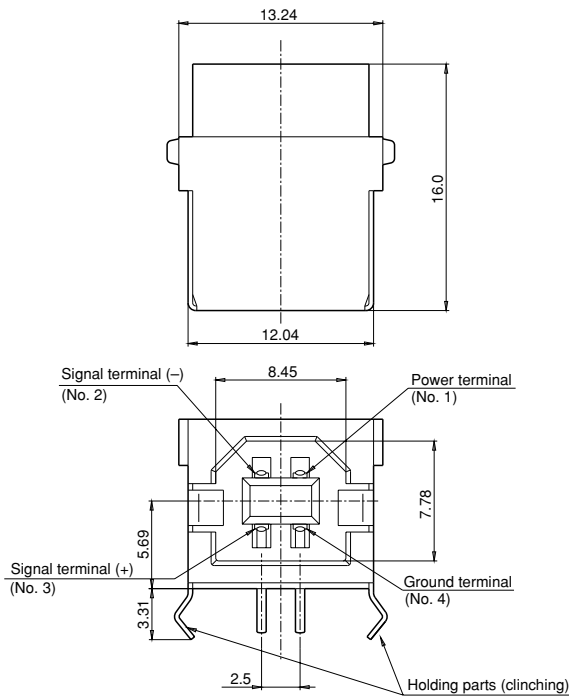
Note) Since product bottom is a metal shell, do not make pattern circuits (to prevent shorting).



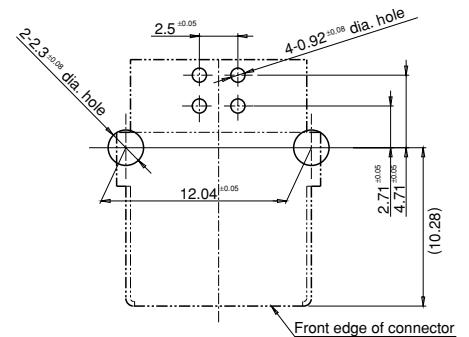
| Part no.  | A   | Applicable PC board thickness |
|-----------|-----|-------------------------------|
| AXJ112202 | 3.7 | 0.8mm to 1.2mm                |
| AXJ112302 | 4.3 | 1.6mm                         |

## 5. Series B 1 port DIP terminal without flange

Recommended PC board pattern (TOP VIEW)



Note) Since product bottom is a metal shell, do not make pattern circuits (to prevent shorting).



## NOTES

1. Use of a cover is recommended when using this device in order to prevent scraps, dust, dirt, etc., from getting inside the receptacle.
2. Since these products come with metal retainers, the foot patterns for two retainers (in the case of 1 port) or for 4 retainers (in the case of 2 ports) must be fabricated. (Refer to the diagram for the recommended PCB processing.) Furthermore, the retainers must be soldered to the PCB to anchor them in place.
3. In the case of automatic soldering, ensure that the solder bath temperature is less than 260°C and that the immersion time does not exceed 10 seconds.
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. 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.
6. Repeated bending of terminals and holding parts can result in terminals breaking.
7. The compatible PCB thickness is either 0.8mm to 1.2mm or 1.6mm for the DIP type of mounting.

In regard to the compatible PCB thickness range from 0.8mm to 1.2mm, it should be added that the only trouble when using the connector with a PCB which is less than 0.8mm thick is that play may develop between the PCB and metal retainers. The connector can therefore be used if it is clamped or some other measure is taken to secure it. The same applies when the 1.6mm type connector is used with a PCB which is less than 1.6mm thick.

8. **Please take care of excessive force to flange. (Recommended torque tension: 0.25 N·m to 0.29 N·m)**

Tightening too much may damage the threads or screw head. Please be careful.

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