



Receptacle:  
Horizontal type



Receptacle:  
Vertical type

Compliance with RoHS Directive

## FEATURES

**1. High-level impedance matching performance based on HDMI Standards**

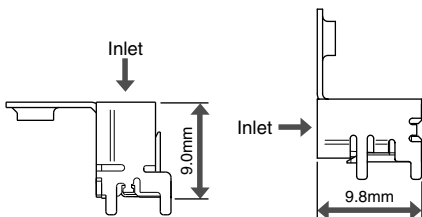
**2. Space-saving size**

Horizontal type: 9.8 mm in depth

Vertical type: 9.0 mm in height

Vertical type

Horizontal type

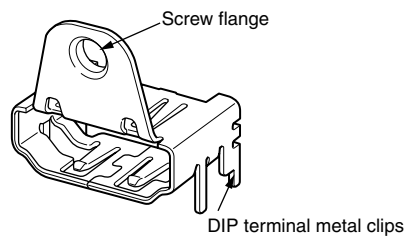


**3. Horizontal and vertical type receptacles are usable on the same foot pattern.**

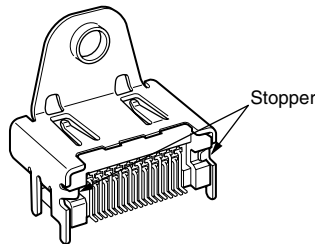
Either the horizontal or vertical type can be used on the same printed circuit board, reducing the design cost and the number of components to be controlled in the target equipment.

**4. Shell having a GND structure for EMI prevention**

The screw flange and the metal clips have enhanced grounding performance.

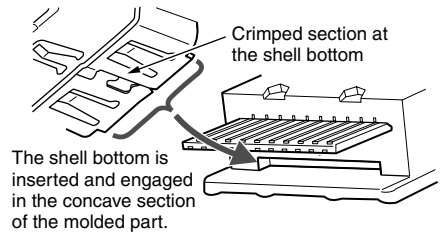


**5. Structure with high resistance to the excessive press-in force of a plug**



**6. Structure with high resistance to twisting forces**

The resistance has been increased by adopting a structure with a screw flange and DIP terminal metal clips fixed to the housing and circuit board, crimping the shell bottom, and holding it with the molded part.



## ORDERING INFORMATION

AXJ 3 1 4 2 T

3: HDMI connectors

<Receptacle/Plug>

1: Receptacle

<Number of terminals/Inlet direction>

1: 19/Horizontal

2: 19/Vertical

<Metal clip shape/Positioning projections>

4: DIP metal clips/Without positioning projections

<Flange>

2: Center flange

<Package>

T: Tray packaging

## PRODUCT TYPES

Number of terminals	Inlet direction	Part No.	Packing quantity	
			Inner carton (tray)	Outer carton
19 terminals	Horizontal type	AXJ31142T	100	1,000
	Vertical type	AXJ31242T		

# SPECIFICATIONS

## 1. Characteristics

	Item	Specifications	Test conditions
Electrical characteristics	Rated current	0.5 A/terminal	
	Rated voltage	40V AC (rms.)	
	Contact resistance	Contact: Max. 50mΩ Shell: Max. 50mΩ	EIA-364-23 (Except wire conductor resistance) EIA-364-06A-83
	Dielectric withstanding voltage	Unmated: Apply 500V AC for 1minute between adjacent terminal or ground. No breakdown. Mated: Apply 300V AC for 1minute between adjacent terminal or ground. No breakdown.	EIA-364-20 Detection current: 1mA
	Insulation resistance	Unmated: Min. 100MΩ between adjacent terminal or ground. Mated: Min. 10MΩ between adjacent terminal or ground.	EIA-364-21 Unmated: Using 500V DC megger Mated: Using 150V DC megger
	Electrostatic discharge	No evidence of discharge to contacts at 8 kV	IEC-801-2 Test unmated connector from 1 kV to 8 kV in 1 kV steps using 8 mm probe.
	T.M.D.S Impedance	100Ω ±15%	EIA-364-108 Draft Proposal Rise time: 200 p sec. (10% to 90%) Differential measurement specimen environment impedance: 100Ω differential Source-side receptacle connector mounted on a controlled impedance PCB fixture.
	T.M.D.S Cross talk FEXT	Max. 5 % (Max. -26 dB)	EIA-364-90 Draft Proposal Rise time: 200 p sec. (10% to 90%) Differential measurement specimen environment impedance: 100Ω differential Source-side receptacle connector mounted on a controlled impedance PCB fixture. Driven pair and victim pair.
Mechanical characteristics	Insertion force (initial)	Max. 44.1N {4.5kg}	EIA-364-13 Mate and un-mate connector at maximum rate of 25mm per minute
	Removal force (initial)	Min. 9.8N {1.0kg}, Max. 39.2N {4.0kg}	EIA-364-13 Mate and un-mate connector at maximum rate of 25mm per minute
	Screw tightening torque	Use M3 screw Recommended torque: 0.294N-m {3.0kgf-cm} Max. permissible torque: 0.343N-m {3.5kgf-cm}	Put the connector to PC board, then tighten the screw at following torque.
	Durability	After 10,000 cycles Contact resistance: Change from initial requirement Contact: Max. 30mΩ Shell: Max. 50mΩ	100±50 cycles per hour
Environmental characteristics	Ambient temperature	0°C to +50°C	No freezing or condensation
	Storage condition	-20°C to +60°C (-20°C to +50°C for packaging materials)	No freezing or condensation
	Vibration	Appearance: No breakdown Contact resistance: Change from initial requirement Contact: Max. 30mΩ Shell: Max. 50mΩ Discontinuity: Max. 1μsec	EIA-364-28 Method 5A Amplitude: 1.52 mm P-P or 147 m/s <sup>2</sup> (15G) Sweep time: 50-2000-50 Hz in 20 minutes Duration: 12 times in each (total of 36 times) X, Y, Z axes. Electrical load: 100 mA DC current shall be flowed during the test.
	Physical shock	Appearance: No breakdown Contact resistance: Change from initial requirement Contact: Max. 30mΩ Shell: Max. 50mΩ Discontinuity: Max. 1μsec	EIA-364-27 Condition A Pulse width: 11msec Wave form: half sine 490 m/s <sup>2</sup> (50 G) Direction: 6 sides (X, Y, Z direction) Number of impacts: 3 times each (total 18 times)
	Thermal shock (mating)	After 10 cycles Appearance: No breakdown Contact resistance: Change from initial requirement Contact: Max. 30mΩ Shell: Max. 50mΩ	EIA-364-32 Condition I Order Temperature Time (min.) 1 -55±3°C 30 2 ~ Max. 5 3 85±2°C 30 4 ~ Max. 5
	Humidity resistance A (mating)	After 4 cycles (96 hours) Appearance: No breakdown Contact resistance: Change from initial requirement Contact: Max. 30mΩ Shell: Max. 50mΩ	EIA-364-31 Mate connectors and expose to humidity at figure1. Temperature: +25°C to +85°C Relative humidity: 80 to 95% Upon completion of the test specimens shall be conditioned at ambient room conditions for 24 hours, after which the specified measurements shall be performed.
	Humidity resistance B (unmating)	After 4 cycles (96 hours) Appearance: No breakdown Dielectric withstanding voltage: Must meet dielectric withstanding voltage of electrical characteristics Insulation resistance: Must meet contact resistance of electrical characteristics	EIA-364-31 Unmate connectors and expose to humidity at figure1. Temperature: +25°C to +85°C Relative humidity: 80 to 95% Upon completion of the test specimens shall be conditioned at ambient room conditions for 24 hours, after which the specified measurements shall be performed.
	Heat resistance (mating)	After 250 hours Appearance: No breakdown Contact resistance: Change from initial requirement Contact: Max. 30mΩ Shell: Max. 50mΩ	EIA-364-17 Under mating condition Temperature: 105°C±2°C Upon completion of the test specimens shall be conditioned at ambient room conditions for 1 to 2 hours, after which the specified measurements shall be performed.
Soldering temperature resistance	Reflow soldering	Peak temperature: Max. 260°C	
	Manual soldering	300±10°C: Max. 5 s 350±10°C: Max. 3 s	

# AXJ3

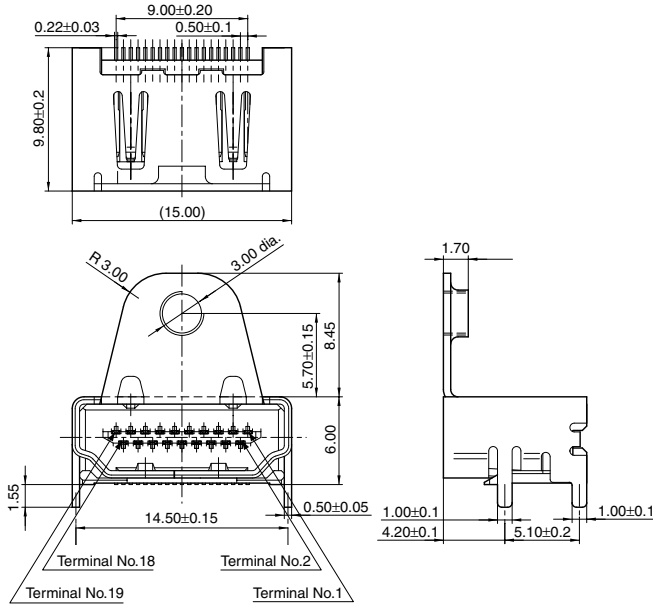
## 2. Material and surface treatment

Part name	Material	Surface treatment
Receptacle	Molded portion	LCP resin (UL94V-0), Color: Black
	Post	Copper alloy
	Shell	Copper alloy
		Contact portion: Au flash plating on PdNi over Ni Terminal portion: Au flash plating over Ni (except for top of the terminal) Sn plating over Ni

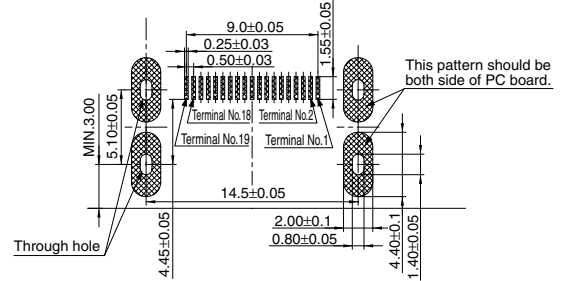
## DIMENSIONS (Unit: mm)

### • Receptacle: Horizontal type

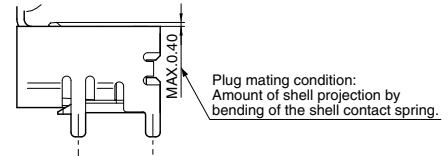
AXJ31142T



### Recommended board pattern (Reference)



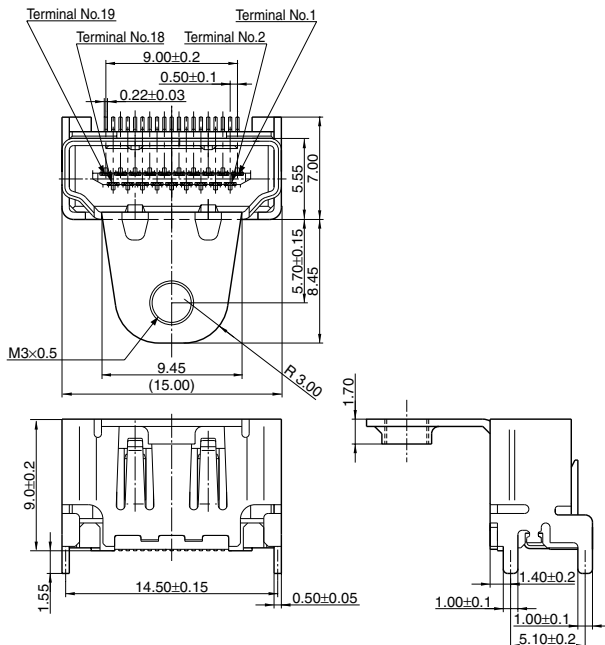
### Amount of shell projection by bending of the shell contact spring



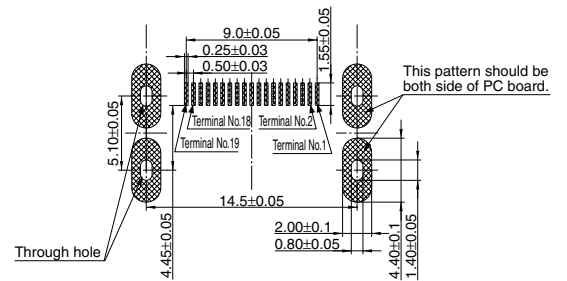
General tolerance: ±0.3

### • Receptacle: Vertical type

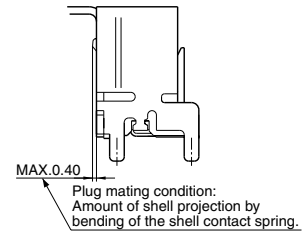
AXJ31242T



### Recommended board pattern (Reference)



### Amount of shell projection by bending of the shell contact spring



General tolerance: ±0.3

## NOTES

**1. A cover for receptacle is recommended to prevent dusts.**

**2. Regarding PC board design**

Refer the recommended PC board pattern for keeping the strength of soldering.

**3. Regarding soldering**

1) Manual soldering

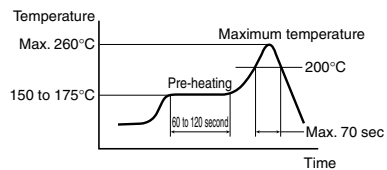
- Please use the soldering iron under specification's temperature and times.
- In case of exercise care not to contaminate the contacts with solder flux from the soldering iron tip. And make sure that the contacts are not contaminated to dispersed solder flux with a magnifying glass and so on. Please pay attentions. Not to deform terminals when apply an excessive force to terminals, or the posts.
- Please soldering iron is cleaning.

2) Reflow soldering

- Please use screen soldering regarding cream solder printing.
- A screen thickness of 0.15 mm is recommended during cream solder printing.
- When applying the different thickness of a screen, please consult us.
- There may be a case of difficult self-alignment depending on the connector size. In that case, please pay attentions to align terminals and solder pads.

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

**The recommended conditions for the reflow 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.
- After soldering, we recommend the solder of the addition to the terminal dip of the shell for the strength securing.

**4. Rework of soldering portion**

- 1) Rework is one time.
- 2) In case of soldering rework of bridges. Please use a flat-head soldering iron and don't use supplementary solder flux.
- 3) Please use the soldering iron under specification's temperature.

**5. 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.**

**6. PC board warpage should be controlled to 0.03 mm max. after soldering to a PC board.**

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

**8. Please do the screw tightening of the flange by the tightening torque below recommended torque. Please note that tightening more than the permissible limit torque has danger of causing the transformation of the shell.**

**9. Regarding after soldering connectors on PC boards**

- 1) After mounting connectors on PC boards, do not apply excessive loads to the connector by piling up the boards.
- 2) Please do not add the force to the connector during assembled connector on PC board.

**10. 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.**

**11. Other notes**

After soldering is no coating. In case of using coating, please do not stick to the terminal.

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