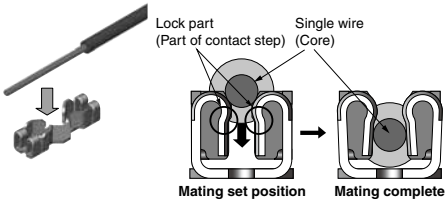
For Wire connection type

High Current Connectors L2

RoHS compliant

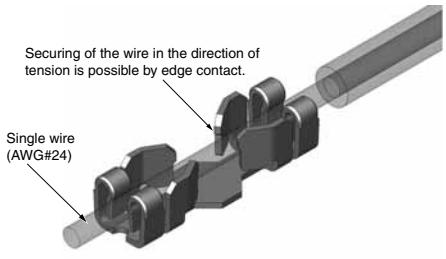
FEATURES

1. Easy connecting with vertical mating structure a click feed back.
The structure design prevents loose mating and makes it easy to visually check the mating.



When the wire goes through the lock part, click feedback is given, and the structure design prevents loose mating.

2. Original terminal shape provides strong pull strength and less concern on half mating.



3. More design ability of your board by small, low profile, and 1 pin connection.
4. The high capacity 3 A, 250 V allows the connector to serve a wide variety of connection purposes.
5. Dedicated mating jig available.

APPLICATIONS

- **Wire connection for power supply and between PC boards connection of LED light bulbs, LED down-light and line lighting, etc.**
- **Power supply connection in the devices**

ORDERING INFORMATION

AYL	2		1	1	0	0

2: L2

Product type
1: Receptacle
9: Mating jig

Wire type
1: Solid wire

Wire range
1: #24

PRODUCT TYPES

■ Receptacle

Product height	Part No.	Packing	
		Inner carton (1-reel)	Outer carton
1.35mm	AYL211100	12,000 pieces	24,000 pieces

Note: Order unit:
For volume production: 1-inner carton (1-reel) units
For samples, please contact our sales office.

■ Mating jig

Part	Part No.	Packing
		Outer carton (Individual packaging)
Mating jig	AYL291100	10 pieces

Note: Order unit:
For volume production: Outer carton (10 pieces) units

SPECIFICATIONS

1. Characteristics

Item		Specifications	Conditions
Electrical characteristics	Rated current	Max. 3.0A	
	Rated voltage	Max. 250V AC/DC	
	Contact resistance	Initial: Max. 30mΩ After environmental examination: Max. 45mΩ	Include the conductor resistance of 30 mm long applicable wire. Based on the contact resistance measurement method specified by JIS C 5402.
Mechanical characteristics	Wire insertion force	Max. 30N (Initial)	Mating a wire to the receptacle, so that a wire and PC board are kept parallel. Measure using mating jig or dedicated jig.
	Wire retention force (Vertically)	Min. 4N (Initial)	Unmating a wire from the receptacle, so that a wire and PC board are kept parallel. Measure using dedicated jig.
	Wire retention force (Axial)	Min. 5N (Initial)	Apply an axial pull-off load to wire.
	Insertion and removal life	3 times (Containing initial mating)	Use a new wire. Must be inserted and removed by the designated method.
Environmental characteristics	Ambient temperature (Operating temperature)	–40°C to +115°C	No icing or condensation.
	Storage temperature	–40°C to +85°C (Products only) –40°C to +50°C (Packaging structure)	No icing or condensation.
	Thermal shock resistance (Receptacle and wire mated)	200 cycles, contact resistance max. 45mΩ	Conformed to MIL-STD-202F, method 107G Order / Temperature (°C) / Time (minutes) 1 / -40^{0}_{-3} / 30 2 / ⟆ / Max. 5 3 / 115^{+3}_{0} / 30 4 / ⟆ / Max. 5 -40^{0}_{-3}
	Humidity resistance (Receptacle and wire mated)	500 hours, contact resistance max. 45mΩ	Bath temperature 85°C±2°C, humidity 80% to 85% R.H.
	Saltwater spray resistance (Receptacle and wire mated)	24 hours, contact resistance max. 45mΩ	IEC60068-2-11 Bath temperature 35°C±2°C, saltwater concentration 5%±1%
	H_2S resistance (Receptacle and wire mated)	48 hours, contact resistance max. 45mΩ	Bath temperature 40°C±2°C, gas concentration 3 ppm ±1 ppm, humidity 75% to 80% R.H.
Soldering temperature resistance (Receptacle)		The initial specification must be satisfied electrically and mechanically	Reflow soldering: Max. peak temperature of 260°C (PC board surface temperature near the receptacle)
Solder paste thickness		The initial specification must be satisfied electrically and mechanically	Recommendation t = 0.12 mm

2. Material and plating

1) Receptacle

Part	Material	Color	Plating
Contact	Copper alloy	—	Sn plating over Ni

2) Mating jig

Part	Material	Color	Plating
Mating jig	Polycarbonate resin	Transparence	—

3. Applicable wires

Wire range	Number of conductors/Diameter of conductor (Number of conductors/mm)	Diameter of insulation (mm)	Wire core
AWG #24	1/0.511±0.010	Max. 1.35	Tin plating annealed copper wire (Min. 0.3µm)

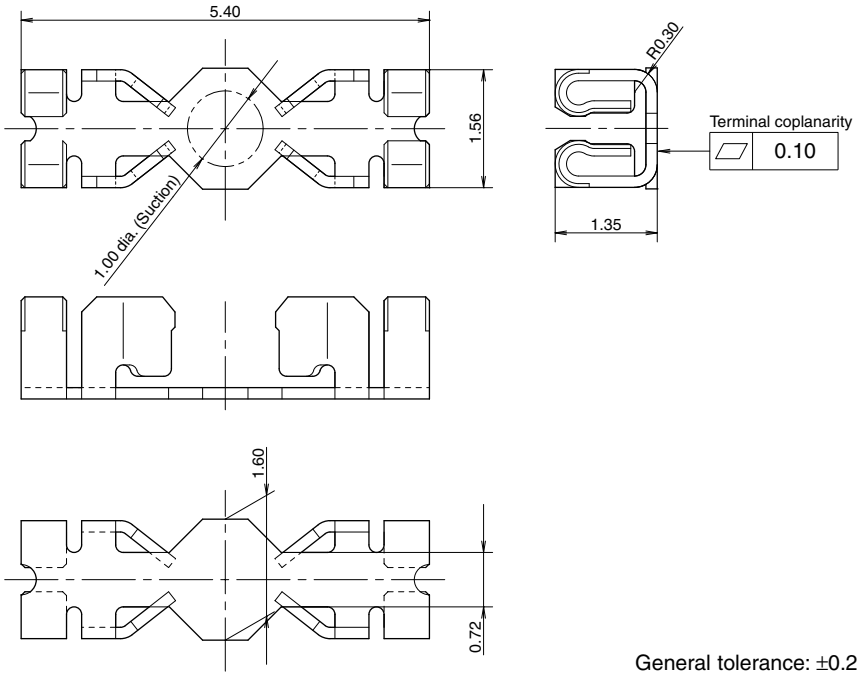
Note: This product is not designed to be used for stranded wires (including spare solder).

DIMENSIONS (Unit: mm)

The CAD data of the products with a CAD Data mark can be downloaded from: http://industrial.panasonic.com/ac/e/

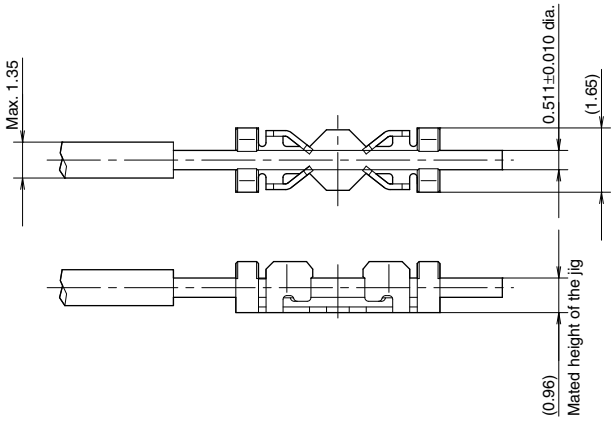
Receptacle

CAD Data

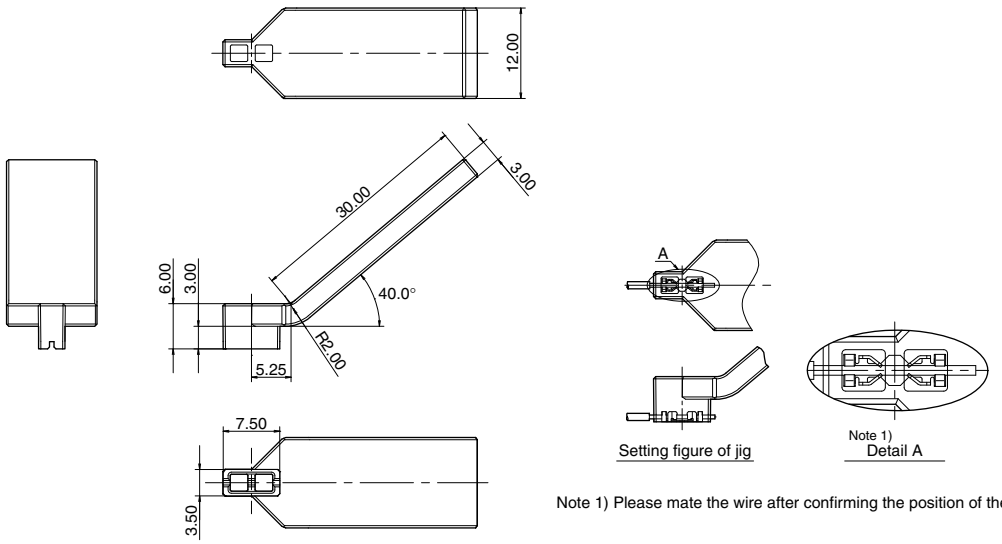


General tolerance: ±0.2

Receptacle and Wire are mated



Mating jig

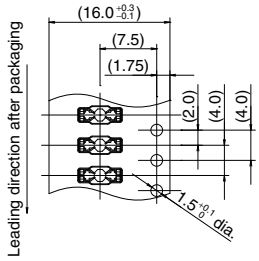


Note 1) Please mate the wire after confirming the position of the receptacle from the jig hole.

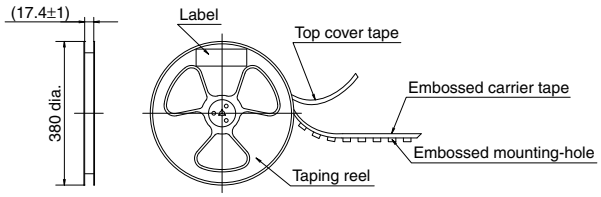
General tolerance: ±0.5

EMBOSSED TAPE DIMENSIONS (Unit: mm)

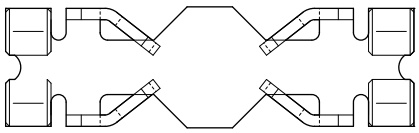
• Tape packed status
Receptacle



• Specifications for the plastic reel
(In accordance with EIAJ ET-7200B.)



• Connector orientation with respect to embossed tape feeding direction

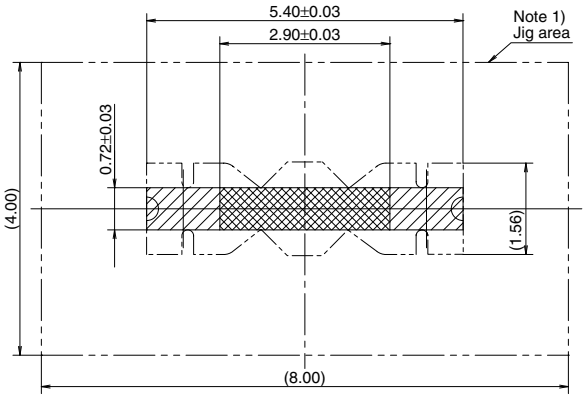
Direction of tape progress \ Type	L2
⬇	

NOTES

1. Design of PC board patterns
Conduct the recommended foot pattern design, in order to preserve the mechanical strength of terminal solder areas.

2. PC board and recommended metal mask patterns
In order to reduce solder and flux rise, solder bridges and other issues make sure the proper levels of solder is used.
The following figures are recommended metal mask patterns. Please use them as a reference.

Recommended PC board Pattern (Unit: mm)
(mounting pad layout)
(TOP VIEW)



Notes: 1) Do not mount any parts in the jig area.
2) ▨ Pad area (Two pads must be connected.)
3) ▩ Resist processing on the copper foil. (For solder outflow prevention.)
4) The open window area of solder screen is the same as pad area.
[t = 0.12 mm (Screen thickness)]

Please refer to the latest product specifications when designing your product.

Notes on Using High Current Connector L2

■ Safety precautions

Observe the following safety precautions to prevent accidents and injuries.

1) Do not use these connectors beyond the specification sheets. The usage outside of specified rated current, dielectric strength, and environmental conditions and so on may cause circuitry damage via abnormal heating, smoke, and fire.

2) In order to avoid accidents, your thorough specification review is appreciated.

Please contact us if your usage is out of the specifications. Otherwise, Panasonic Corporation cannot guarantee the quality and reliability.

3) Panasonic Corporation is consistently striving to improve quality and reliability.

However, the fact remains that electrical components and devices generally cause failures at a given statistical probability. Furthermore, their durability varies with use environments or use conditions. In this respect, please check for actual electrical components and devices under actual conditions before use. Continued usage in a state of degraded condition may cause the deteriorated insulation, thus result in abnormal heat, smoke or firing. Please carry out safety design and periodic maintenance including redundancy design, design for fire spread prevention, and design for malfunction prevention so that no accidents resulting in injury or death, fire accidents, or social damage will be caused as a result of failure of the products or ending life of the products.

■ Mounting of receptacle

1) Receptacle mounting

• When mounting, if there is too much suction nozzle pressure, the receptacle might deform and break. Please check beforehand.

• To mount the receptacle, place the adsorption nozzle within the adsorption range shown in the specification diagram and pay careful attention not to cause the receptacle to deform.

• In case of dry condition, please note the occurrence of static electricity. The product may be adhered to the embossed carrier tape or the cover tape in dry condition. Recommended humidity is from 40%RH to 60%RH and please remove static electricity by ionizer in manufacturing process.

2) Soldering

(1) Manual soldering

This product is not designed to be mounted by manual soldering.

(2) Reflow soldering

• When cream solder printing is used, screen method is recommended.

• The relation between the screen opening area and PC board foot pattern area should be referred to “Recommended PC board Pattern”.

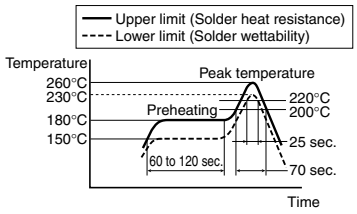
• Please avoid the excessive solder. Because the excessive solder makes contact failure by creepage.

• When applying the different thickness of a screen, please contact us.

• There may be a case of difficult self-alignment depending on the connector positions.

In that case, please be careful to align terminals and solder pads.

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



• Infrared reflow soldering is able to passed two times.

• The temperature is measured on the PC board surface near the receptacle.

• The condition of solder or flux creepage and wettability depend on the type of solder and flux. Please set the reflow temperature and oxygen level by considering the solder and flux characteristics.

• When the coating material is used for preventing PC board isolation deterioration after soldering, please assure the coating material is not adhered on any part of receptacle.

• Do not use resin-containing solder. Otherwise, the contacts might be firmly fixed.

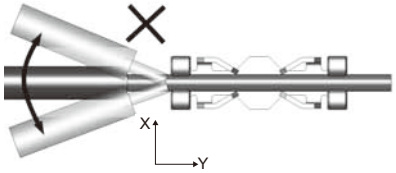
• As the excessive force on the receptacle may cause the deformation and the integrity of solderability will be lost during reflow soldering, please avoid dropping or rough handling of the receptacle.

• When cutting the PC board after mounting the receptacle, please avoid the stress at the soldering portion.

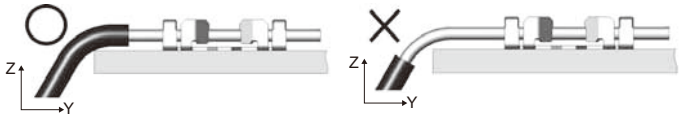
■ Remarks

1) This product has simple lock structure for mating. However, applying load to the wire or drop impact may cause the wire to be disconnected. Please take countermeasures at the equipment for preventing removal of wire.
2) Provide a sufficient insulation distance between receptacles and between the ground and receptacle. Make sure that the insulation distance is based on the safety standards of each country.
3) Design the line to have redundancy by leaving some extra length for the wire so as not to cause the tensile force of the wire generated by the thermal expansion and contraction of PC board to apply load to the receptacle.

4) Do not use the wire at the movable part. Doing so will cause the receptacle to become deformed or the wire to be disconnected.



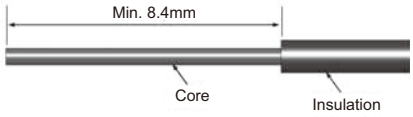
5) If the wire needs to be bent at the edge of the PC board, mount the receptacle so that the wire will bend at its insulation portion. Bending the wire at its core portion may cause the wire to get broken.



6) Do not remove or insert the electrified wire (in the state of carrying current or applying voltage).

■ Applicable wires

1) The following diagram shows wire strip length for stripping the wire.

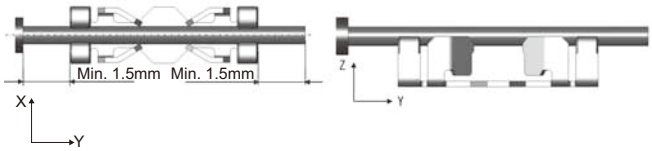


2) To strip the insulation, keep the core straight and protect it from any flaw and deformation. Deformation of the core will cause the receptacle to be deformed.

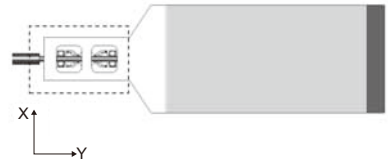
3) This product is not designed to be used for stranded wires (including spare solder).

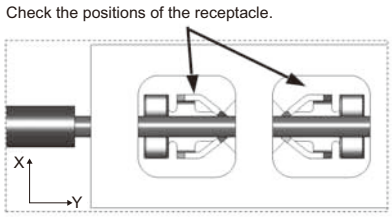
■ Mating of wire

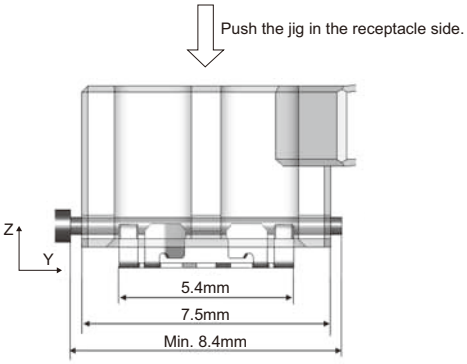
1) When mating the wire, use the recommended mating jig.
(1) Positioning of wire
Position the wire so that it will come to the center of the receptacle.



(2) Setting of the mating jig
Check the positions of the receptacle through the hole in the jig, and then push the jig in the receptacle side.
When pushing the jig in the receptacle side, pay careful attention not to cause the jig to become misaligned. Misalignment of the jig will damage the receptacle.

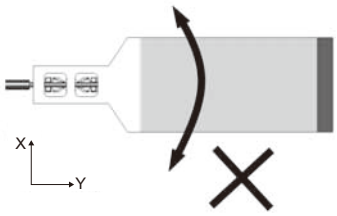




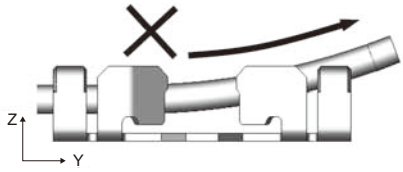


(3) Mating state
Ensure that the wire is connected to the given position.
(The core must be lower than the receptacle lock part.)

2) Do not twist the jig to insert it. Doing so will cause the receptacle to be deformed or broken down, or the soldered portion to be peeled off.



3) Do not use the receptacle in a half-mating state. Doing so will result in a conduction failure. Ensure that the wire is completely connected.

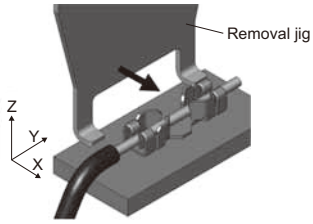


4) When the soldering is not completed, do not connect the wire to the receptacle. And the external compulsory force to the receptacle may cause the coplanarity failures.
5) Secure jig areas shown in the recommended PC board pattern.

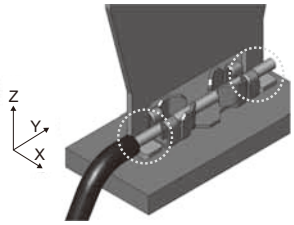
■ Removal of wire

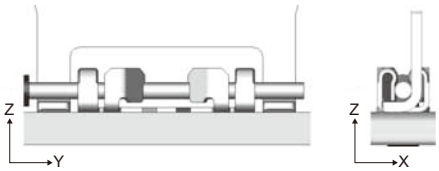
1) Prepare for a removal jig by reference to drawing and follow the steps for removal as shown below.
(For a removal jig drawing, please contact our sales office.)

(1) Setting of removal jig
Insert the tip of the removal jig under the wire from the side of receptacle.

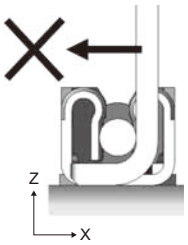


(2) Positioning of removal jig
Make sure that the tip of the removal jig is under the wire.

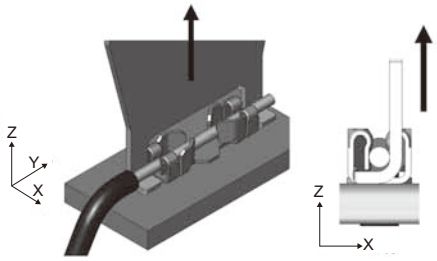




Pay attention to the position of the jig and do not apply an excessive load to the wire. Otherwise, the receptacle may be deformed.



(3) Removal way of wire
Remove the wire by lifting the jig straight up at a vertical angle to the receptacle. Lifting the jig at a slant may cause the deformation of receptacle.



2) Reuse of disconnected wire is not allowed. The disconnected wire has a scratch and a deformed shape.

Please contact .....

Panasonic Corporation
Electromechanical Control Business Division
■ 1006, Oaza Kadoma, Kadoma-shi, Osaka 571-8506, Japan
industrial.panasonic.com/ac/e/

Panasonic®

ACCTB59E 201701-T