

(AXA1)

Discontinued

Panasonic
ideas for life

**LOW-PROFILE,
SPACE-SAVING,
LEAD-FREE CONNECTOR
FOR SIM CARDS**

**SOCKETS FOR
miniSD CARD**

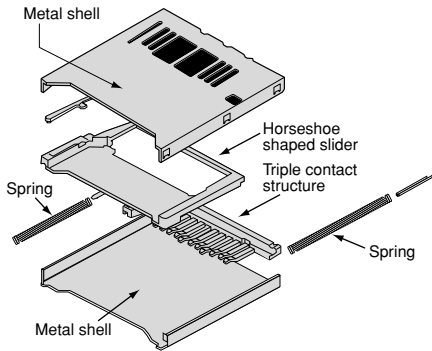
NEW



Standard mounting type



Reverse mounting type



FEATURES

1. Triple contact construction for improved prevention of minute circuit cutoff from dropping.

The terminals in the power supply section have been made with triple contacts. This construction means that there will be no circuit cutoff over 0.1 μ s even if the device is dropped.

2. Robustness and resistance to ESD and EMI have been fortified using upper and lower metal shells.

1) The socket is effective against ESD and EMI, since both the front and back of the card are covered with metal when inserted.

2) Also, since a more robust design is possible compared to single-sided plastic molding, the influence of reflow heat is reduced.

3. Constructed with double spring and horseshoe shaped slider

• Since a horseshoe shaped slider and double spring system is used and since the entire bottom of the card pushes the slider, the right-to-left balance is good, which allows smooth insertion and removal.

4. Better contact reliability through use of V notch construction in detection contact.

V notch construction, a design proven in our narrow-pitch connectors, is used in the detection contact. This increases resistance to the environment and to dust.

5. 2.3 mm ultra-thin socket thickness contributes to device compactness

Space savings realized. Width: 24.3 mm (incl. solder terminal) \times Depth: 21.5 mm (incl. lead terminal) \times Thickness: 2.3 mm

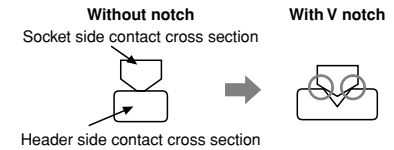
6. Simple card lock mechanism (prevents card from falling out)

5. 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.

● What is V notch construction?

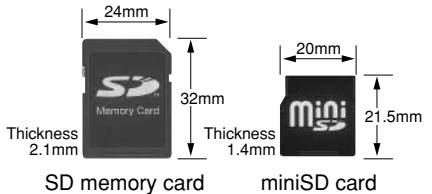
By using the edge for the contacting part and increasing contact pressure per unit area, the effectiveness in removing flux and contaminants is increased compared to its predecessor. This is also effective in preventing the trapping of contaminants.

[Cross section of contacting part]



What is a miniSD card?

To satisfy the trend toward applications that are getting thinner and more compact, the miniSD card, at 40% the volume, is an even more compact version of the SD memory card that is now enjoying a solid reputation in the market.



APPLICATIONS

Use in applications (mobile phones and voice recorders, etc.) that employ a miniSD card.

- 1) Mobile phones
- 2) Voice recorders



ORDERING INFORMATION

AXA 

1: Sockets for miniSD card

<Board mounting direction>

6: On board mounting reverse type (outside terminal)

7: On board mounting standard type (outside terminal)

<Eject type>

3: Push-push type

<Stand off height>

0: Not available (0 mm)

<Function>

1: Without card jump-out prevention function
With card presence detection SW

5: With card jump-out prevention function
With card presence detection SW

<Terminal/Positioning boss>

1: SMD terminal/with positioning boss

<Packing>

T: 40 pcs., tray package × 20 trays

P: 350 pcs. embossed tape and paper reel package × 2 reels

PRODUCT TYPES

Product name	Eject type	Card detection	Card jump-out prevention function	Mounting type	Standoff height (mm)	Part No.	Packing quantity	
							Inner carton	Outer carton
Sockets for miniSD card	Push-push type	Available	Not available	On board mounting standard type	0	AXA173011*	Asterisk "*" mark on end of Part No.; P: 350 pieces (1 reel) (Embossed tape package) T: 40 pieces (1 tray) (Tray package)	Asterisk "*" mark on end of Part No.; P: 700 pieces (2 reels) (Embossed tape package) T: 800 pieces (20 trays) (Tray package)
				On board mounting reverse type		AXA163011*		
			Available	On board mounting standard type		AXA173051*		
				On board mounting reverse type		AXA163051*		

SPECIFICATIONS

1. Characteristics (Performance when miniSD card is mated. Based on miniSD card specification Ver. 1.02.)

Item	Specifications	Condition	
Electrical characteristics	Rated voltage	7.0V DC	
	Rated current	0.5A DC/1 terminal	
	Contact resistance	Signal contact portion: Max. 100mΩ Detection contact portion: Max. 150mΩ	Measured with the HP4338B
	Insulation resistance	Min. 1,000MΩ	Using 500V DC megger (applied for 1 min.)
	Breakdown voltage	500V AC for 1 min.	Rated voltage is applied for one minute and check for short circuit or damage with a detection current of 1 mA.
Mechanical characteristics	Vibration resistance	Frequency: 10 to 55 Hz Acceleration: 20.0 m/s ² {2.0G} No current interruption for more than 0.1 μs (signal contact)	
	Card locking force	Max. 40N {4.08kgf}	
Lifetime characteristics	Insertion and removal life of card Contact resistance after testing: Signal contact portion: Max. 100mΩ Detection contact portion: Max. 150mΩ	Insertion and removal speed are at a rate of 500 times/hour or less.	
Environment characteristics	Ambient temperature	-25°C to +85°C	No freezing or condensation in low temperatures
	Storage temperature	-40°C to +85°C (The allowable storage temperature is -40°C to +50°C if unopened from original packaging)	No freezing or condensation in low temperatures
	Resistance to soldering heat	Reflow soldering: peak temperature 250°C or less manual soldering: Soldering iron tip temperature 300°C, 5 sec. or less	Sockets (shell) surface temperature for using infrared reflow soldering machine
Applicable memory card	miniSD card (based on specification Ver. 1.02)		

Note: Please consult us for card falling out prevention mechanism.

2. Material and surface treatment

Portion	Material	Surface
Signal contact	Copper alloy	Contact portion: Ni plating on base, PdNi plating + Au flash plating on surface Soldering portion: Ni plating on base, Au plating on surface
Detection contact	Copper alloy	Contact portion: Ni plating on base, Au plating on surface Soldering portion: Ni plating on base, Au plating on surface
Retention fittings	Stainless steel	Soldering portion: Ni plating on base, Au + Pd plating on surface

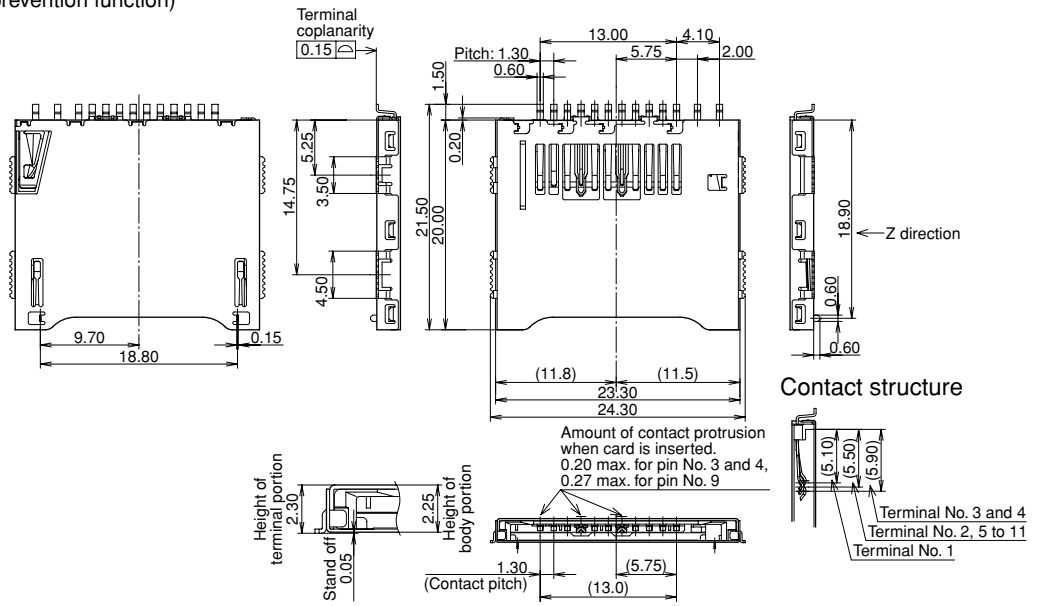
2. On board mounting reverse type (outside terminal)

mm General tolerance: ±0.2

Part No.

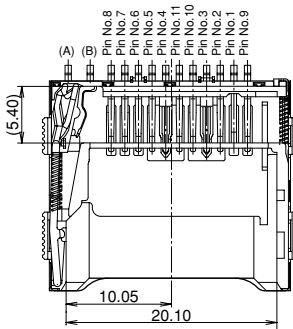
AXA163011*

AXA163051* (with card jump-out prevention function)

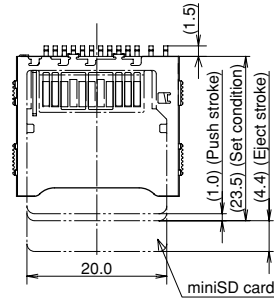


Detailed internal view

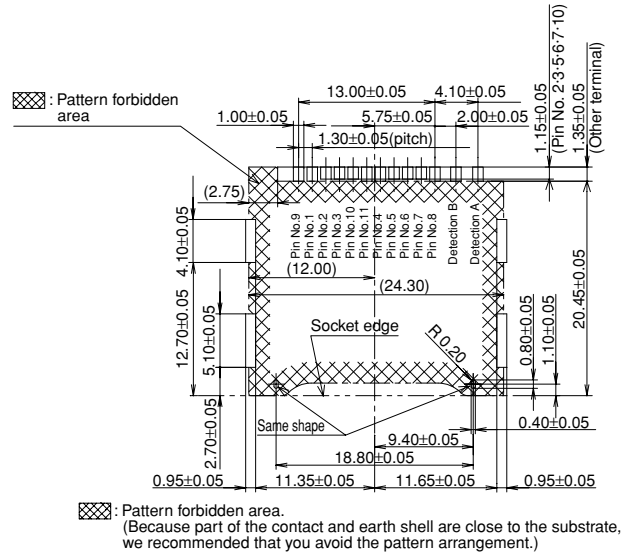
(as seen from Z direction with the cover shell removed)



View of set card



Recommended PC board pattern (TOP VIEW)



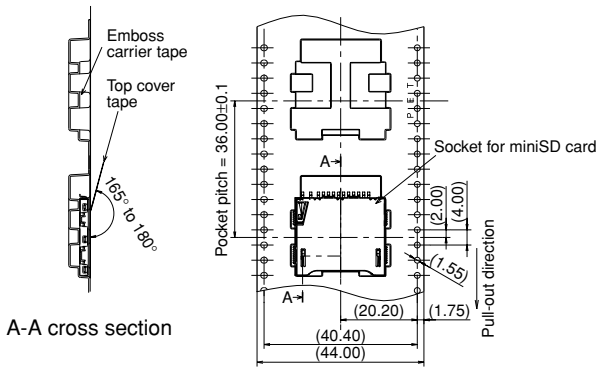
Card detection switch contact condition chart

Card attachment condition	Card detection switch
Card not attached	Open
Card attached	Closed
Terminal number	(A)-(B)

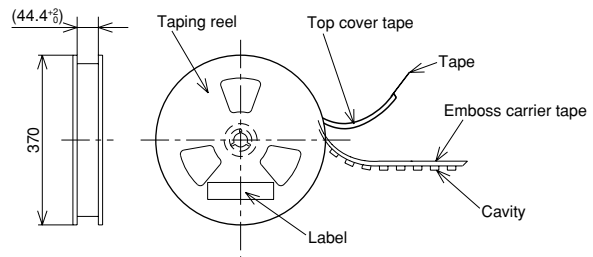
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EMBOSSED TAPE AND REEL (Unit: mm)

• Tape dimensions



• Reel dimensions



NOTES

1. Regarding the design of PC board patterns

Conduct the recommended foot pattern design, in order to preserve the mechanical strength of terminal solder areas.

2. Regarding the socket mounting

1) When reflow soldering when the slider is locked, heat will cause the slider to deform and not work. Therefore, please confirm that the slider lock is released before mounting if you have inserted and removed a card before soldering.

2) Be aware that during mounting, external forces may be applied to the connector contact surfaces and terminals and cause deformations.

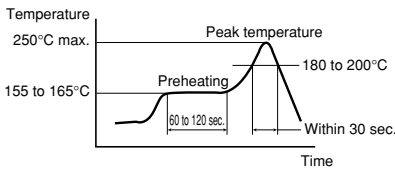
3. Soldering

1) Reflow soldering

• Screen-printing method is recommended for cream solder printing.

• Use the recommended foot pattern for cream solder printing (screen thickness: 0.15 mm).

• Use the recommended reflow temperature profile conditions shown on the right for infrared reflow soldering.



• Measure the temperature at the connector surface.

2) Hand soldering

• Set the soldering tip to 300°C, and solder for no more than 5 seconds.

4. Cleaning after soldering

Inside the socket there is a slider section and card detection contact/write protection mechanism. If anything such as flux remains inside after washing, insertion and removal will be hampered and contact will be faulty. Therefore, do not use methods that involve submersion when cleaning. (Partial cleaning of the PCB and soldered terminals is possible.)

5. After PC board mounting

1) Warping of the PC board should be no more than 0.03 mm for the entire connector length.

2) When assembling PCBs or storing them in block assemblies, make sure that undue weight is not exerted on a stacked connector.

3) Be sure not to allow external pressure to act on connectors when assembling PCBs or moving in block assemblies.

6. Handling single components

1) Make sure not to drop or allow parts to fall from work bench

2) Be cautious when handling because excessive force applied to the terminals will cause deformation and loss of terminal coplanarity.

3) Repeated bending of the terminals may break them.

7. Card fitting

1) These products are made for the design of compact and lightweight devices and therefore the molded part is very thin. For this reason, design the device to prevent undue wrenching forces from being applied to the product during use.

2) The sockets are constructed to prevent reverse card insertion. Caution is required because repeated, mistaken reverse insertion may damage the socket and card.

3) When not soldered, be careful not to insert and remove the socket's card. Doing so will cause a decrease in anchoring ability of the mated part and loss of coplanarity.

4) Forcibly removing a fitted card may degrade the card removal prevention lock. To remove a card, be sure to push the card in the insertion direction to release the slider lock before pulling out the card.

8. Device design

1) Contact failure may result if dust or dirt enters the contact section. Please take appropriate measures when designing the device to prevent this from happening, for example by adding a cover.

2) To ensure smooth insertion and removal of cards, please design the chassis so that no force is applied to the metal shell on top of the socket. If a force is present that pushes down on the metal shell, the card will be pressed, which might prevent ejection.

3) Please provide a guide or similar to keep the socket from having force applied to it when inserting and removing.

9. Others

If you coat the PCB after soldering for insulation and to prevent wear, make sure that the coating does not adhere to the socket.

Regarding general notes, please refer to page 12.

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