Micro-Miniature Interface Connectors For Power Supply/Signaling
MQ172 Series

Features

1. Ultra Miniature/Low Profile SMT Design
   With dimensions of 3.9mm(H) x 6.4mm (W) x 6mm (D) for the 3 contact type, this series is ideal for today’s miniature, lightweight electronic products.

2. Automatic Mounting:
   SMT receptacles are packaged in embossed tape and reel for automatic pick and place installation.

3. Reliable contact:
   The 2-point contact design and lead construction provide a contact which is resistant to vibration and shocks.

4. High current capacity:
   Unique contact design ensures high current capacity (e.g., 3A for 3-position), small as it is.

5. Positive Locking
   Use of a snap-lock system provides the sensation of locking at the time of insertion.

6. Wide variety of suitable cables:
   A wide selection of cable types can be utilized since the plug is of the soldered wiring type.
   Additionally, the plug case and cord bushing are integrated into a one piece body, allowing for easy assembly by simply pressing the case into place after the harness work.

6. Keys for preventing incorrect insertion:
   Both 3 and 4-contact types have keys to prevent incorrect insertion.

Applications

Portable remote terminals, portable telephones, PHS(personal handy phone system), Notebook PCs, Electronic measuring instruments, etc.
Product Specifications

**RATINGS**

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>SPECIFICATIONS</th>
<th>REQUIREMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Insulation resistance</td>
<td>1000MΩ or more</td>
<td>Should be measured at DC 100V.</td>
</tr>
<tr>
<td>2. Voltage resistance</td>
<td>No flashover/dielectric Breakdown</td>
<td>Should be powered at AC 250V for 1 minute.</td>
</tr>
<tr>
<td>3. Contact resistance</td>
<td>30mΩ or less</td>
<td>Measured at 10mA.</td>
</tr>
<tr>
<td>4. Vibration resistance</td>
<td>No instantaneous electric Disconnection of 1µsec or more</td>
<td>10~55Hz , one-sided amplitude 0.75mm, 3 directions for 2 hours, respectively</td>
</tr>
</tbody>
</table>
| 5. Humidity resistance | Contact resistance: 50mΩ or less Insulation resistance: 10MΩ or more | Leave under the condition of 40±2°C in temperature and of 90-95% in humidity for 96 hours.
(85°C: 30 minutes, 15-35°C:max. 5 minutes, 85°C: 30 minutes × 15-35°C:max. 5 minutes) 5 cycles |
| 6. Temperature cycle | Contact resistance: 50mΩ or less Insulation resistance: 1000MΩ or more | 5,000 times |
| 7. Plugging/unplugging life | Contact resistance: 50mΩ or less | SMT type reflow: at recommended temp. profile |

(Note.1) For 4-contact type, rated current is 2A, or 3A for optional 2 terminals and 0.5A for other 2 terminals.
(Note.2) Above-stated specifications are typical of this series. For respective formal contract, please refer to "Delivery Specifications".

Material Quality

<table>
<thead>
<tr>
<th>Parts</th>
<th>Material</th>
<th>Processing</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dielectric</td>
<td>Synthetic resin</td>
<td>Black color</td>
<td>UL94V-0</td>
</tr>
<tr>
<td>Terminal</td>
<td>Phosphor bronze</td>
<td>Engagement area...Gold plating of 0.2µm Lead section...Solder-plating</td>
<td></td>
</tr>
<tr>
<td>Cover case(plug)</td>
<td>Synthetic resin</td>
<td>Black color</td>
<td>UL94V-0</td>
</tr>
<tr>
<td>Metal fittings(receptacle)</td>
<td>Stainless steel</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lock case(plug)</td>
<td>Stainless steel</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Product Number Configuration

This is available for you to determine the product specifications from its format.

When ordering, please select any one among all formats shown in page 3-4 of this catalog.

**RECEPTACLE**

MQ172 X - 4 P A (11)

1 Series name: MQ172
2 Series configuration symbol: none...unshielded type X...shielded type
3 Number of contacts: 3, 4
4 Connector type: P...receptacle S...plug
5 Key type symbol: A (only for A type)
6 Packing type: none...tray-based packing (11)...embossed tape packing
7 Cover case type: CV...standard product (color: black)
### Plugs

**3-Position type**

<table>
<thead>
<tr>
<th>Parts No.</th>
<th>HRS No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MQ172-3SA-CV</td>
<td>CL206-0951-7</td>
</tr>
</tbody>
</table>

**4-Position type**

<table>
<thead>
<tr>
<th>Parts No.</th>
<th>HRS No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MQ172X-4SA-CV</td>
<td>CL206-2001-9</td>
</tr>
</tbody>
</table>

### Harness Tool

<table>
<thead>
<tr>
<th>Tool name</th>
<th>Parts No.</th>
<th>HRS No.</th>
<th>Parts name of adaptive plugs</th>
<th>Adaptive cable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cable caulking jig</td>
<td>MQ172-3S/CK-MP</td>
<td>CL902-2069-4</td>
<td>MQ172-3SA-CV</td>
<td>Outside diameter: #3.5</td>
</tr>
<tr>
<td></td>
<td>MQ172-4S/CK-MP</td>
<td>CL902-2070-3</td>
<td>MQ172X-4SA-CV</td>
<td>AWG#24-#32</td>
</tr>
</tbody>
</table>

(Note.) As the crimp height after crimping depends on cable type, please consult factory about your designated cable.
Receptacles

3-Position type

Illustration Of Receptacle
Set Installed

4-Position type

(Note.) For MQ172, mounting to circuit boards is SMT type. For the purpose of more adequate fixing against external force, it is desirable to affix the entire set after setting as shown in the figure above.
Recommended Land Pattern Dimensions Diagram

**3-Position type**

![Diagram of 3-Position type]

**4-Position type**

![Diagram of 4-Position type]

Note.) Mounting of this product to circuit boards is the SMT type.
To provide more adequate fixing, use of adhesive for board-installed area is recommended.
Embossed Tape Carrier Dimensions Diagram (JIS-C-0806 dependent)

Carrier Dimensions Diagram

(Note.) The figure above provides the case of a 3 contact type, dimensions shown in such figure are the same as those of a 4 contact type.

Reel Status Diagram
**Recommended Temperature Profile**

![Temperature Profile Graph](image)

- **Board**
  - Dimensions: 50X33X0.8(mm)
  - Material: glass epoxy

- **Cream soldering**
  - Composition: 63Sn/37Pb
  - (flux content: 10Wt%)
  - Metal mask thickness: 0.15mm

- **Reflow method**
  - IR reflow

- **Measurement spot of setting temperature**
  - Housing (mold) surface

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**Cleaning Requirements**

(1) **Organic solvent-based cleaning**

<table>
<thead>
<tr>
<th>Solvent</th>
<th>Normal temp</th>
<th>Heating</th>
</tr>
</thead>
<tbody>
<tr>
<td>IPA</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>(Isopropyl Alcohol)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HCFC</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>(Hydro-chloro-fluoric carbon)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(2) **Water-based cleaning**

When using water-based detergent (e.g., terpene or alkali saponifier, etc.), select appropriate detergent on the basis of those lists describing effects on metals/resins issued by each detergent manufacturer. Further be careful not to leave any moisture.

(3) **Cautions on cleaning**

In cleaning with organic solvent or water-based detergent, residual flux or detergent on the connector may cause excessive degradation of electrical performance. Check fully that reliable cleaning is provided.