miniSD™ Card Connectors

DM2 Series

Features

1. Extremely small size
   Board footprint as well as the length, width and height of the connector has been reduced in order to minimize use of valuable space in today’s miniature devices. With the miniSD™ card inserted the overall length is shortest in the industry.

2. Push-in / Push-out card ejection
   Inserted card is securely held in place with an approximate force of 4 N, assuring reliable connection and retention in the connector, even when subjected to accidental shock. When pushed again, the card will self-eject to distance of 4 mm, allowing safe removal from the connector.

3. Protection against card loss
   Built-in card retention springs will keep the card inserted when card may be accidentally partially pulled-out.

4. Protection against reverse card insertion
   The ejection mechanism is designed not to lock when the card is inserted in reverse, alerting the user to insert it correctly. Reverse card insertion will not damage the contacts.

5. Effective grounding and shielding
   The VSS contacts connect directly to the metal cover, assuring superior ground connection (Patents pending.) In addition, metal cover will connect with the PC board surface at four points, providing highly effective grounding and shielding of the connector.

6. Durable, load-resistant construction
   While miniature in size and lightweight, the use of metal cover assures it’s reliable and stable performance.

7. Two-point contact
   Two-point contact offers high contact reliability.

8. Built-in card detection switch
   The card detection switch is a normally closed, opening when the card is inserted.

9. RoHS Compliant
   All components and materials comply with the requirements of EU Directive 2002/95/EC.

Applications

Mobile phones, digital cameras, PDA’s and any other portable device requiring use of miniSD™ memory card. *miniSD™ is a trademark of the SD Card Association.
**Product Specifications**

<table>
<thead>
<tr>
<th>Item</th>
<th>Specification</th>
<th>Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Insulation resistance</td>
<td>1000 MΩ min. (Initial value)</td>
<td>500V DC</td>
</tr>
<tr>
<td>2. Withstanding voltage</td>
<td>No flashover or insulation breakdown.</td>
<td>500V AC / one minute</td>
</tr>
<tr>
<td>3. Contact resistance</td>
<td>100mΩ max. (Initial value)</td>
<td>100mA DC</td>
</tr>
<tr>
<td>4. Vibration</td>
<td>No electrical discontinuity of 100 ns or more.</td>
<td>Frequency: 10 to 55 Hz, single amplitude of 0.75mm, 2 hours / 3 axis</td>
</tr>
<tr>
<td>5. Humidity</td>
<td>Contact resistance : 40mΩ max. from initial value</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Insulation resistance : 100MΩ min.</td>
<td>96 hours at 40°C±2°C and humidity of 90% to 95%.</td>
</tr>
<tr>
<td>6. Temperature cycle</td>
<td>Contact resistance : 40mΩ max. from initial value</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Insulation resistance : 100MΩ min.</td>
<td>Temperature: -55°C→+5°C to +35°C→+85°C→+5°C to +35°C</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Duration: 30→+5→30→5 (Minutes)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5 cycles</td>
</tr>
<tr>
<td>7. Durability (mating/unmating)</td>
<td>Contact resistance : 40mΩ max. from initial value</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>10000 cycles at 400 to 600 cycles per hour</td>
</tr>
<tr>
<td>8. Resistance to soldering heat</td>
<td>No deformation of components affecting form, fit or function.</td>
<td>Reflow: At the recommended temperature profile</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Manual soldering: 350°C for 3 seconds</td>
</tr>
</tbody>
</table>

Note 1: Includes temperature rise caused by current flow.  
Note 2: The term "storage" refers to products stored for long period of time prior to mounting and use. Operating temperature range and humidity range covers non-conducting condition of installed connectors in storage, shipment or during transportation.

**Materials / Finish**

<table>
<thead>
<tr>
<th>Component</th>
<th>Material</th>
<th>Finish</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insulator</td>
<td>Heat resistant thermoplastic compound</td>
<td>Color: Black</td>
<td>UL94V-0</td>
</tr>
<tr>
<td>Contacts</td>
<td>Phosphor bronze</td>
<td>Contact area : Gold plated</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Termination area : Gold plated</td>
<td></td>
</tr>
<tr>
<td>Cover</td>
<td>Copper alloy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other components</td>
<td>Stainless steel</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Steel wire</td>
<td>Nickel plated</td>
<td></td>
</tr>
</tbody>
</table>

**Ordering information**

DM2 * - * - PEJ - *

1. Series name : DM2
2. Connector type: A: Standard receptacle  
   B: Reverse receptacle  
   Number of contacts: 11
3. Termination type:  
   SFW: Right angle SMT (Standard mounting)  
   DSFW: Right angle SMT (Reverse mounting)
5. Ground terminal type:  
   S: SMT - at 4 points  
   D1S: Through hole at 2 points + SMT at 4 points
Standard (Top board mounting)

- Card detection switch (A)
- Card detection switch (B)

PCB mounting pattern

1. Indicates the center line of card slot.
2. Card detection switch
   - When card is ejected
   - When card is inserted

- No conductive traces
- GND
- Terminal
Reverse (Bottom board mounting)

PCB mounting pattern

The product information in this catalog is for reference only. Please request the Engineering Drawing for the most current and accurate design information.

All non-RoHS products have been discontinued, or will be discontinued soon. Please check the products status on the Hirose website RoHS search at www.hirose-connectors.com, or contact your Hirose sales representative.

<table>
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<tr>
<th>Part number</th>
<th>CL No.</th>
<th>Packaging</th>
<th>RoHS</th>
</tr>
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<tbody>
<tr>
<td>DM2B-DSFW-PEJ-S</td>
<td>609-0009-1</td>
<td>800 pcs. per reel</td>
<td>YES</td>
</tr>
</tbody>
</table>

Indicates the center line of card slot.

Card detection switch

When card is ejected

When card is inserted

Closed

Open

(A) [ ]

(B) [ ]
■Reverse (Bottom board mounting - additional locating tabs)

![Image of reverse connector]

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<tbody>
<tr>
<td>DM2B-DSFW-PEJ-D1S</td>
<td>609-0012-6</td>
<td>800 pcs. per reel</td>
<td>YES</td>
</tr>
</tbody>
</table>

- **Card detection switch (A)**
  - OPEN
  - CLOSED

- **Card detection switch (B)**
  - OPEN
  - CLOSED

- **Indicates the center line of card slot.**

- **PCB mounting pattern**

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Packaging Specifications

- Embossed carrier tape dimensions (800 pieces per reel)

Reel dimensions

Recommended temperature profile

<Recommended conditions>

- Reflow system: IR/Hot air
- Environment: Room air
- Solder composition: Paste, 96.5%Sn / 3.0%Ag / 0.5%Cu (M705-221CM5-42-10.5 manufactured by Senju Metal Industry Co., Ltd.)
- Test board: Glass epoxy 60mm x 100mm x 1mm thick
- Metal mask thickness: 0.12 mm

This temperature profile is based on the above conditions. In individual applications the actual temperature may vary, depending on solder paste type, volume/thickness and board size/thickness. Consult your solder paste and equipment manufacturer for specific recommendations.

Precautions and recommendations

1. Washing recommendations
   - Do not wash the entire connector. Intrusion of washing fluids in the connector may affect the operation of the ejection mechanism, card insertion or electrical performance.
   - If required, wash only soldered joints, exercising caution not to allow intrusion of washing solution inside the connector.

2. Use correct card
   - The connector is designed for miniSD™ card.
   - Although it will withstand reverse card insertion attempts without damage, care should be taken NOT to subject it to extreme insertion forces, angle insertion or card twisting.

3. Do not apply excessive external force
   - Application of excessive external force during card insertion or removal may cause malfunction or damage to the connector or card.