microSD™/TransFlash™ Card Connectors

DM3 Series

Features

1. Extremely small size
   The width of 13.85 mm, length of 15.95 mm and height of 1.68 mm makes this connector smallest on the market.

2. Card fall-out prevention
   Built-in card tray and unique push-push ejection mechanism (patent pending) prevents accidental card ejection or fall-out.

3. Reverse card insertion protection
   Unique card slot metal tabs (patent pending) protect connector from damage when the card is attempted to be inserted in reverse.
   The card may be easily removed and re-inserted correctly.

4. Long card ejection distance
   Despite it's small size the push-push ejection will eject card for the large distance of 4.0 mm allowing easy hold and removal of the card.

5. Multiple ground and shield connections
   4 connection points of the metal cover (at each corner of the connector) to the printed circuit board surface assure reliable ground connections.

6. Rigid and strong construction
   All plastic components held by the metal top created a strong and rigid connector while retaining it's extremely small size.

7. Card detection switch
   The card detection switch is normally open.

8. Exposed termination leads
   Easy inspection and rework of solder joints.

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

Applications

Mobile phones, digital cameras, PDA’s and any other portable device requiring use of small size, high durability microSD™ memory card connectors.

*microSD is a trademark of the SD 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 M ohms 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>100m ohms max. (Initial value)</td>
<td>1mA</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: 40m ohms max. from initial value Insulation resistance: 100M ohms 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: 40m ohms max. from initial value Insulation resistance: 100M ohms min.</td>
<td>Temperature: -55°C → +5°C to +35°C → +85°C → +5°C to +35°C Duration: 30 → 5 → 30 → 5 (Minutes) 5 cycles</td>
</tr>
<tr>
<td>7. Durability (mating/un-mating)</td>
<td>Contact resistance: 40m ohms max. from initial value.</td>
<td>10,000 cycles at 400 to 600 cycles per hour</td>
</tr>
<tr>
<td>8. Resistance to soldering heat</td>
<td>No deformation of components affecting performance.</td>
<td>Reflow: At the recommended temperature profile 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 a 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 and Finish

<table>
<thead>
<tr>
<th>Part</th>
<th>Material</th>
<th>Finish</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insulator</td>
<td>Highly heat-resistant resin</td>
<td>Color: Black</td>
<td>UL94V-0</td>
</tr>
<tr>
<td>Contacts</td>
<td>Copper alloy</td>
<td>Contact area: Gold plated</td>
<td>Lead area: Gold plated</td>
</tr>
<tr>
<td>Guide cover</td>
<td>Copper alloy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other components</td>
<td>Stainless steel Piano wire</td>
<td>Nickel plated</td>
<td></td>
</tr>
</tbody>
</table>

### Ordering information

**DM3 A - SF - PEJ - *

1. Series name: DM3
2. Connector type: Standard receptacle
   - Number of contacts: 8
3. Termination type: Right-angle SMT (standard mounting)
5. Positioning boss type
   - Blank: Without positioning boss
   - 2: With positioning boss

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.
Standard (Top board mounting - Without positioning boss)

<table>
<thead>
<tr>
<th>Part number</th>
<th>CL No.</th>
<th>RoHS</th>
</tr>
</thead>
<tbody>
<tr>
<td>DM3A-SF-PEJ</td>
<td>609-0014-1</td>
<td>YES</td>
</tr>
</tbody>
</table>

Recommended PC board mounting pattern

Card insertion direction

Note: indicates the center line of the microSD card slot.

Card detection switch

<table>
<thead>
<tr>
<th>Without the card</th>
<th>Card inserted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open</td>
<td>Closed</td>
</tr>
<tr>
<td>(A)</td>
<td>(A)</td>
</tr>
<tr>
<td>(B)</td>
<td>(B)</td>
</tr>
</tbody>
</table>

No conductive traces

microSD card

Connector on the PCB
Standard (Top board mounting - With positioning boss)

<table>
<thead>
<tr>
<th>Part number</th>
<th>CL No.</th>
<th>RoHS</th>
</tr>
</thead>
<tbody>
<tr>
<td>DM3A-SF-PEJ2</td>
<td>609-0015-4</td>
<td>YES</td>
</tr>
</tbody>
</table>

Recommended PC board mounting pattern

Note: Indicates the center line of the microSD card slot.

Card insertion direction

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Packaging Specifications

- Embossed carrier tape dimensions 1,500 pieces per reel

Reel dimensions

Recommended Temperature Profile

<Recommended conditions>
Reflow system: IR/Hot air reflow
Environment: Room air
Solder composition: Paste, 96.5%Sn / 3.0%Ag / 0.5%Cu
(M705-GRN360-K2-V 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 use recommendations

1. Do not immerse or clean the entire connector with cleaning solutions as this may affect proper operation of the ejection mechanism and electrical performance of the connector.
   Clean ONLY the soldered termination areas.

2. Do not apply excessive force to connector when handling or after installation on the PC board.

3. The connector will reliably connect and function with the correctly inserted microSD™ or TransFlash™ cards. The connector will not allow reverse insertion of the card.
   Do NOT force reverse oriented card in to the connector as this may cause permanent damage to the card or connector.

4. Do not use force when removing the inserted card from the connector.

5. Protective cover recommendations.
   To avoid accidental damage to the connector or electrical discontinuity when the device may be accidentally dropped it is recommended to have a removable, sliding or hinged protective cover, as shown on the illustration below.

6. Recommended application area for surface mounting adhesive
   Surface mounting adhesive must be applied on the PCB only in the area indicated on the illustration below.
   Excessive amount of the adhesive may affect the soldered termination leads.
   Use only the minimum required amount of adhesive.

7. The connector must be correctly mounted on the PC board before the card can be inserted. Do not insert card in the un-mounted connector.
8. Mounting on the Flexible Printed Circuit (FPC)
   To assure correct performance it is recommended that a flat reinforcement plate 0.3 mm min. thick be used under
   the FPC.

9. To assure card guidance during insertion and the protection of the exposed edge when fully inserted it is
   recommended that the users housing be designed as illustrated below.

10. The edge of the moveable tray may be visually slanted as shown on the illustration below. This has no affect on
    connector performance.

11. Small visible residual manufacturing oils or tooling marks do not affect connector performance.

12. Repeated insertions and removal of the cards may leave some marks on the card itself. This will have no affect on
    the connector performance.

13. The card detection contacts are exposed.
    Exercise extra caution during handling and installation on the PC board as to avoid damage or contamination to
    them.