microSD™ Card Connectors
DM3 Series

■ Features
◆ Common to the entire Series
1. Extremely small in size
   Small external dimensions and the above-the-board height make the connectors the smallest on the market.
2. Reverse card insertion protection
   Unique card slot design (patented) protects the connector from damage when the card is attempted to be inserted in reverse, allowing it to re-inserted correctly.
3. Effective ground and shield configuration
   4-connection points of the metal cover to the printed circuit board assures secure connection of the ground circuit and provides EMI protection.
4. Rigid and strong construction
   Despite its small size, high-strengths materials used in the connectors produced a strong and rigid structure.
5. Card detection switch
   The card detection switch is Normally Open

◆ DM3AT and DM3BT (Push - Push, with ejection mechanism)
  • Card fall-out prevention
    Built-in card tray and the unique push insertion-push ejection mechanism (patented) prevent accidental card ejection or fall-out.
    Despite its small size the connectors will eject the card to a distance of 4.0mm, allowing easy hold and removal of the card.
  • Exposed termination leads
    Easy inspection and rework of the solder termination joints.

◆ DM3CS (Hinge, Push-Pull, manual, without ejection mechanism)
  • Simple and reliable card insertion
    Hinged metal cover provides location and guides the card during the insertion / removal. Closing of the cover confirms the electrical and mechanical connection with a tactile click sensation.
  • Reliable contact with the card contact pads
    Unique contact design and card slide action will clean the contact areas of the card.
  • Accessible termination areas
    Contact solder terminations may be inspected and reworked.

◆ DM3D (Push -Pull, manual, without ejection mechanism)
  • Partial card insertion hold
    Card will not fall-out even when it is not fully inserted. Full insertion and electrical / mechanical connection is confirmed with a distinct tactile feel.
  • Accessible termination areas
    An inner lead system that can be reworked is used in this design. Contact solder terminations may be inspected and reworked.
DM3 Series●microSD™ Card Connectors

■Product Specifications (DM3 Series)

<table>
<thead>
<tr>
<th>Item</th>
<th>Specification</th>
<th>Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Insulation resistance</td>
<td>1000MΩ min. (Initial value)</td>
<td>Measure at 500V DC</td>
</tr>
<tr>
<td>2. Withstanding voltage</td>
<td>No flashover or insulation breakdown</td>
<td>500 V AC / 1 minute</td>
</tr>
<tr>
<td>3. Contact resistance</td>
<td>100mΩ max. (Initial value)</td>
<td>1mA</td>
</tr>
<tr>
<td>4. Vibration</td>
<td>No electrical discontinuity of 100 ns or longer</td>
<td>Frequency: 10 to 55Hz, single amplitude of 0.75mm, 3 directions for 2 hours</td>
</tr>
<tr>
<td>5. Humidity</td>
<td>Contact resistance: 40mΩ max. (change from initial value)</td>
<td>96 hours at of 40 ± 2°C, and humidity of 90 to 95%</td>
</tr>
<tr>
<td>6. Temperature cycle</td>
<td>Contact resistance: 40mΩ max. (change from initial value)</td>
<td>-55°C → 5 to 35°C → -5°C to 35°C → 5 to 35°C</td>
</tr>
<tr>
<td>7. Durability</td>
<td>Contact resistance: 40mΩ max. (change from initial value)</td>
<td>Times: 30 min. → 5 min. → 30 min. → 5 min. 5 cycles</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 long period prior to mounting and use.

■Materials / Finish

**DM3AT, DM3BT**

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

**DM3CS, DM3D**

<table>
<thead>
<tr>
<th>Part</th>
<th>Material</th>
<th>Finish</th>
<th>Remarks</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insulator</td>
<td>LCP</td>
<td>Color: Black</td>
<td></td>
<td>UL94V-0</td>
</tr>
<tr>
<td>Contacts</td>
<td>Copper alloy</td>
<td>Contact area: Gold plated</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Lead area: Gold plated</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Guide cover</td>
<td>Stainless steel</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(DM3CS)</td>
</tr>
<tr>
<td>Other components</td>
<td>Piano wire</td>
<td></td>
<td></td>
<td>Tin plated (DM3D)</td>
</tr>
</tbody>
</table>

■Product Number Structure

Refer to the chart below when determining the product specifications from the product number.
Please select from the product numbers listed in this catalog when placing orders.

| 1 Series name : DM3 | 2 Connector type : AT Push-Push (ejection mechanism), Top board mounting (Standard) BT Push-Push (ejection mechanism), Bottom board mounting (Reverse) CS Hinge, Push-Pull (no ejection mechanism), Top board mounting (Standard) D Push-Pull (no ejection mechanism), Top board mounting (Standard) | 3 Termination type : SF Right-angle SMT (Standard) DSF Right-angle SMT (Reverse) | 4 Card ejection code : PEJM5, PEJS None : Manual card insertion/ejection | Number of contacts : 8 |
DM3 Series • microSD™ Card Connectors

■ DM3AT Push-Push (ejection mechanism), Top board mounting (Standard)

- Recommended PCB mounting pattern

- Card detection switch:
  - Without the card: Open
  - Card inserted: Closed

- No conductive traces.
-packaging Specifications

● Embossed carrier tape dimensions (1,500 pcs/reel)

● Reel Dimensions
DM3 Series ● microSD™ Card Connectors

DM3BT, Push-Push (ejection mechanism), Bottom board mounting (Reverse)

Part No. | HRS No.
--- | ---
DM3BT-DSF-PEJS | 609-0029-9

Recommended PCB mounting pattern

Note
1. Q indicates the center line of the microSD card slot.
2. Card detection switch

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

3. Oblique-hatched area is projection of contact.
4. No conductive traces.

All dimensions : mm
Packaging Specifications

- Embossed carrier tape dimensions (1,200 pcs/reel)

Reel Dimensions

All dimensions : mm
DM3 Series ● microSD™ Card Connectors

DM3CS, Hinge, Push - Pull (no ejection mechanism), Top board mounting (Standard)

- Recommended PCB mounting pattern

<table>
<thead>
<tr>
<th>Part No.</th>
<th>HRS No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>DM3CS-SF</td>
<td>609-0032-3</td>
</tr>
</tbody>
</table>

![Image of microSD™ Card Connectors](image)

Note:
1. Q indicates the center line of the microSD card slot.
2. Card detection switch
   - Without the card: all GND pins are open.
   - Card inserted: GND(1), GND(2), GND(3), GND(4) are closed.
3. No conductive traces.

All dimensions: mm

May.1.2017 Copyright 2017 HIROSE ELECTRIC CO., LTD. All Rights Reserved.
**Packaging Specifications**

- Embossed carrier tape dimensions (1,300 pcs/reel)

All dimensions: mm

- Reel Dimensions
DM3D, Push-Pull (no ejection mechanism), Top board mounting (Standard)

- Recommended PCB mounting pattern

<table>
<thead>
<tr>
<th>Part No.</th>
<th>HRS No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>DM3D-SF</td>
<td>609-0025-8</td>
</tr>
</tbody>
</table>

**Note**

1. Indicates the center line of the microSD card slot.
2. Card detection switch
   - Without the card: Open
   - Card inserted: Closed
   - (A) Without the card: (B) Card inserted
3. No conductive traces.

All dimensions: mm
● Embossed carrier tape dimensions (2,000 pcs/reel)

● Reel Dimensions
**Recommended temperature profile**

![Recommended temperature profile graph]

**Precautions**

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.

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

3. The connectors will reliably connect and operate with the correctly inserted microSD™ cards. Follow the correct insertion / ejection procedure for the specific connector in use. Attempts of incorrect insertion of the card may cause damage to the connector or the card.

4. The connector must be correctly mounted on the PC board before the card can be inserted. Do not insert the card in the un-mounted connector.

5. 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.

6. Small visible residual manufacturing fluids or tooling marks do not affect connector’s performance.

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

**HRS test condition**

- **Solder method**: Reflow, IR/hot air
- **Environment**: Room air
- **Solder composition**: Paste, 96.5%Sn/3.0%Ag/0.5%Cu
  - (Senju Metal Industry, Co., Ltd.’s Part Number:M705-GRN360-K2-V)
- **Test board**: Glass epoxy 60mm×100mm×1.0mm thick
- **Metal mask**: 0.12mm thick
- **Number of reflow cycles**: 2cycles max.

The temperature profiles shown are 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.

<table>
<thead>
<tr>
<th>HRS test condition details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solder method</td>
</tr>
<tr>
<td>Environment</td>
</tr>
<tr>
<td>Solder composition</td>
</tr>
<tr>
<td>(Senju Metal Industry, Co., Ltd.’s Part Number:M705-GRN360-K2-V)</td>
</tr>
<tr>
<td>Test board</td>
</tr>
<tr>
<td>Metal mask</td>
</tr>
<tr>
<td>Number of reflow cycles</td>
</tr>
</tbody>
</table>

**Refer to applicable Operation Manual listed below for additional precautions.**

<table>
<thead>
<tr>
<th>Series</th>
<th>Operation Manual Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>DM3AT Series</td>
<td>ETAD-F0345</td>
</tr>
<tr>
<td>DM3BT Series</td>
<td>ETAD-F0324</td>
</tr>
<tr>
<td>DM3CS Series</td>
<td>ETAD-F0335</td>
</tr>
<tr>
<td>DM3D Series</td>
<td>ETAD-F0353</td>
</tr>
</tbody>
</table>
DM3 Series microSD™ Card Connectors

The characteristics and the specifications contained herein are for reference purpose. Please refer to the latest customer drawings prior to use.
The contents of this catalog are current as of date of 01/2017. Contents are subject to change without notice for the purpose of improvements.

USA:
HIROSE ELECTRIC (U.S.A.), INC. HEADQUARTERS CHICAGO OFFICE
2300 Warrenville Road, Suite 150,
Downers Grove, IL 60515
Phone: +1-630-282-6700
http://www.hirose.com/us/

THE NETHERLANDS:
HIROSE ELECTRIC EUROPE B.V.
Hogeheilweg #8 1101 CC Amsterdam Z-O
Phone: +31-20-6557460
Fax: +31-20-6557469
http://www.hirose.com/eu/

GERMANY:
HIROSE ELECTRIC EUROPE B.V. GERMAN BRANCH
Schoenestraße 20, 73760 Ostfildern
Phone: +49-711-456002-1
Fax: +49-711-456002-299
http://www.hirose.com/eu/

GERMANY:
HIROSE ELECTRIC EUROPE B.V. NUREMBERG OFFICE
Neumeyerstrasse 22-26, 90411 Nuremberg
Phone: +49-911 32 68 89 63
Fax: +49-911 32 68 89 69
http://www.hirose.com/eu/

FRANCE:
HIROSE ELECTRIC EUROPE B.V. PARIS OFFICE
Rogers La Garenne Colombes, Place de La Bélaigne,
71 Boulevard National La Garenne Colombes, 92250, France
Phone: +33 (0) 1 70 82 31 70
Fax: +33 (1) 70 82 31 01
http://www.hirose.com/eu/

UNITED KINGDOM:
HIROSE ELECTRIC EUROPE BV (UK BRANCH)
4 Newton Court, Kelvin Drive, Knowhills,
Milton Keynes, MK5 8NH
Phone: +44-1908 202050
Fax: +44-1908 202058
http://www.hirose.com/eu/

CHINA:
HIROSE ELECTRIC (SHANGHAI) CO., LTD.
1601, Henderson Metropellan, NO300, East NanJing Road, HuangPu District, Shanghai, China 200001
Phone: +86-21-6391-3355
Fax: +86-21-6391-3335
http://www.hirose.com.cn/

HONG KONG:
HIROSE ELECTRIC HONGKONG TRADING CO., LTD.
Room 1001, West Wing, Tim Tai Tsui Centre, 66 Mody Road, Tim Tai Tsui East, Kwun Tong, Hong Kong
Phone: +852-2803-5338
Fax: +852-2591-6560
http://www.hirose.com/hk/

SINGAPORE:
HIROSE ELECTRIC SINGAPORE PTE. LTD.
10 Anson Road #26-16, International Plaza 079903, Singapore
Phone: +65-6324-6113
Fax: +65-6324-6123
http://www.hirose.com/sg/

MAKELAYS:
PENANG REPRESENTATIVE OFFICE
1-21-01, Suntech @ Penang Cybercity (1164), Lintang Mayang Pasir 311950, Bayan Baru, Penang, Malaysia.
Phone: +604-619-2564
Fax: +604-619-2574
http://www.hirose.com/sg/

THAILAND:
BANGKOK OFFICE (REPRESENTATIVE OFFICE)
Unit 4703, 47th FL., 1 Empire Tower, South Sathorn Road, Yanawa, Sathorn, Bangkok 10120 Thailand
Phone: +66-2-686-1255
Fax: +66-2-686-2433
http://www.hirose.com/sg/

TAWAI:
HIROSE ELECTRIC TAIWAN CO., LTD.
103 S8, No.87, Zhengzhoud Rd., Taipeh
Phone: +886-2-2555-7350
Fax: +886-2-2555-7377
http://www.hirose.com/tw/

INDIA:
HIROSE ELECTRIC SINGAPORE PTE. LTD. DELHI LIABIN OFFICE
Office NO.552, Regent-Green Boulevard, Level5, Tower C, Sec28, Plot B-94, Block B, Noida, 201307, Uttar Pradesh, India
Phone: +91-12-660-8018
Fax: +91-12-4804949
http://www.hirose.com/sg/

INDIA:
HIROSE ELECTRIC SINGAPORE PTE. LTD. BANGALORE LIABIN OFFICE
Unit No.403, 4th Floor, No-104, Barton Centre, Mahatma Gandhi (MG) Road, Bangalore 560 001, Karnataka, India
Phone: +91-80-4120 1907
Fax: +91-80-4120 9908
http://www.hirose.com/sg/

The characteristics and the specifications contained herein are for reference purpose. Please refer to the latest customer drawings prior to use.
The contents of this catalog are current as of date of 01/2017. Contents are subject to change without notice for the purpose of improvements.

HIROSE ELECTRIC CO., LTD.
2-6-3, Nakagawa Chuo, Tsuzuki-Ku, Yokohama-Shi 224-8540, JAPAN
TEL: +81-45-620-3526 Fax: +81-45-591-3726
http://www.hirose.com
http://www.hirose-connectors.com
Hirose Electric: