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-

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

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.

Card insertion-ejection	Series	Image	Page
Push-Push	DM3AT	Have	2~4
Pusti-Pusti	DM3BT	AMMIN V2	5~6
Hinge-manual insertion/ ejection	DM3CS	A THITTE	7~8
Push-Pull manual insertion/ ejection	DM3D		9~10

■Product Specifications (DM3 Series)

Ratings

Current rating: 0.5A
Voltage rating: 125V AC

Operating temperature range: -25°C to +85°C (Note 1)
Storage temperature range: -40°C to +85°C (Note 2)

(No condensation)

Operating humidity range: RH 95% max.
(No condensation)

Item	Specification	Conditions	
Insulation resistance	1000MΩ min. (Initial value)	Measure at 500V DC	
2. Withstanding voltage	No flashover or insulation breakdown	500 V AC / 1 minute	
3. Contact resistance	100mΩ max. (Initial value)	1mA	
4. Vibration	No electrical discontinuity of 100 ns or longer No damage, cracks or parts dislocation. No electrical discontinuity of 100 ns or longer No damage, cracks or parts dislocation. Frequency: 10 to 55Hz, single amplitude of 0		
Contact resistance : 40mΩ max. (change from initial value) 5. Humidity Insulation resistance : 100MΩ min. No damage, cracks or parts dislocation.		96 hours at of 40 \pm 2°C, and humidity of 90 to 95%	
Contact resistance : 40mΩ max. (change from initial value) 6. Temperature cycle Insulation resistance : 100MΩ min. No damage, cracks or parts dislocation.		-55°C → 5 to 35 °C →85°C → 5 to 35 °C Times : 30 min. → 5 min. → 30 min. → 5 min. 5 cycles	
7 Durability Contact resistance : 40mg max. (change from Initial Value)		10,000 cycles, 400 to 600 cycles per hour (DM3AT, DM3B) 5,000 cycles, 400 to 600 cycles per hour (DM3C, DM3D)	
8. Resistance to soldering heat	No deformation of components affecting performance.	Reflow : At the recommended temperature pro Manual soldering : 350°C for 3 seconds	

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

Part	Material	Finish	Remarks
Insulator	LCP	Color : Black	UL94V-0
Contacts	Copper alloy	Contact area : Gold plated Lead area : Gold plated	
Guide cover	Stainless steel (DM3AT) Copper alloy (DM3BT)	Lead area : Gold plated	
Other components	Stainless steel (DM3AT, DM3BT) Piano wire (DM3BT)	Nickel plated	

DM3CS, DM3D

Part	Material	Finish	Remarks
Insulator	LCP	Color : Black	UL94V-0
Contacts	Copper alloy	Contact area : Gold plated Lead area : Gold plated	
Guide cover	Stainless steel	———— (DM3CS) Tin plated (DM3D)	

■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.

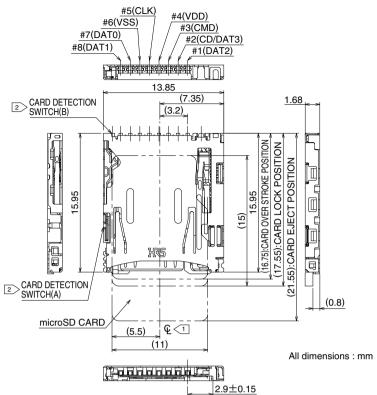
DM3	AT	- SF -	PEJM5
-	9	<u> </u>	

Ser	ries name : DM3		3 Termination type:	SF Right-angle SMT(Standard)
Cor	nnector type	: AT Push-Push (ejection mechanism), Top board mounting (Standard)		DSF Right-angle SMT(Reverse)
		BT Push-Push (ejection mechanism), Bottom board mounting (Reverse)	4 Card ejection code	e: PEJM5, PEJS
		CS Hinge, Push-Pull (no ejection mechanism), Top board mounting (Standard)		(Push insert/push eject)
		D Push-Pull (no ejection mechanism), Top board mounting (Standard)	None	: Manual card
Nur	mber of contacts	: 8		insertion/ejection

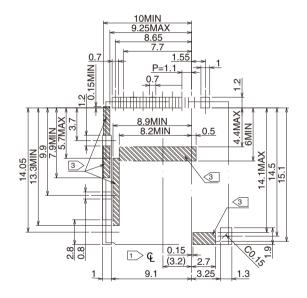
■DM3AT Push-Push (ejection mechanism), Top board mounting (Standard)



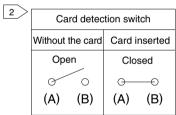
Part No.	HRS No.
DM3AT-SF-PEJM5	609-0031-0



■Recommended PCB mounting pattern



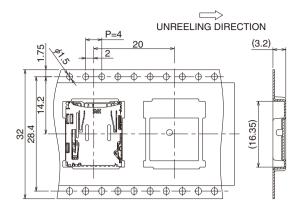
Note 1 > 4 indicates the center line of the microSD card slot.



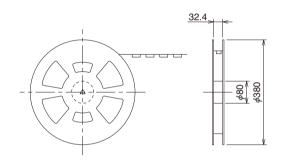
No conductive traces.

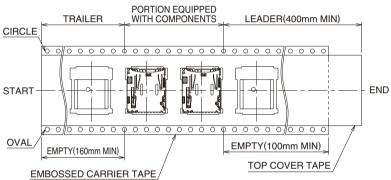
All dimensions: mm

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



All dimensions : mm

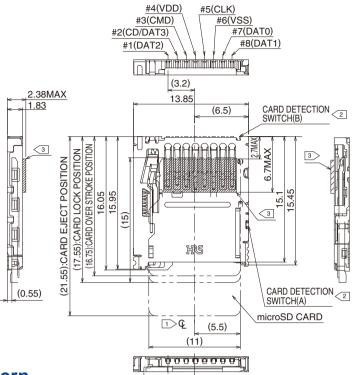




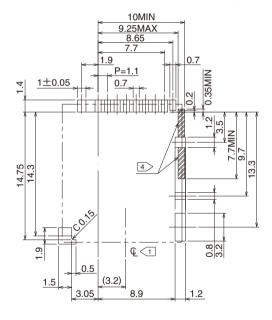
■DM3BT, Push-Push (ejection mechanism), Bottom board mounting (Reverse)



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

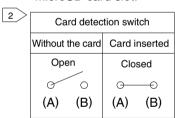


■Recommended PCB mounting pattern



6 indicates the center line of the microSD card slot.

2.9±0.15

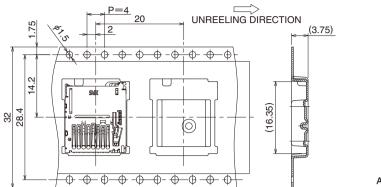


- 3 Oblique-hatched area is projection of contact.
- No conductive traces.

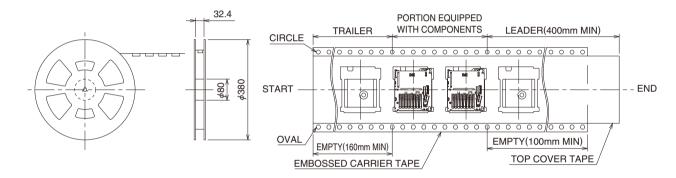
All dimensions : mm

All dimensions : mm

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



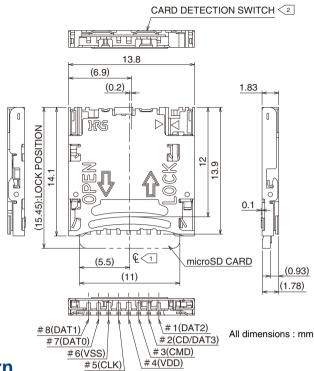
All dimensions : mm



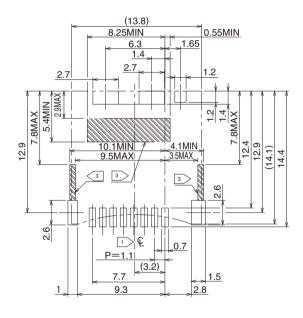
■DM3CS, Hinge, Push -Pull (no ejection mechanism), Top board mounting (Standard)



Part No.	HRS No.	
DM3CS-SF	609-0032-3	



■Recommended PCB mounting pattern



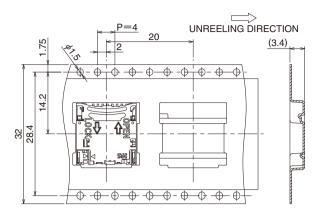
6 indicates the center line of the microSD card slot.

2	Card detection switch			
	Without the card		Card i	nserted
	Ope	n	Clo	osed
		—⊖ GND(1)		→ GND(1)
		⊖ GND(2)	0 0	⊖ GND(2)
	9 9	⊖ GND(3)	0	— GND(3)
		—⊖ GND(4)		→ GND(4)

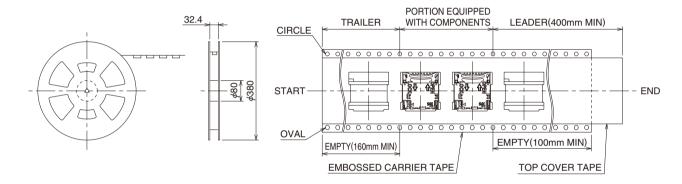
3 No conductive traces.

All dimensions: mm

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

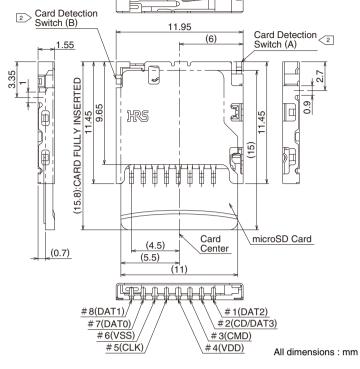


All dimensions : mm

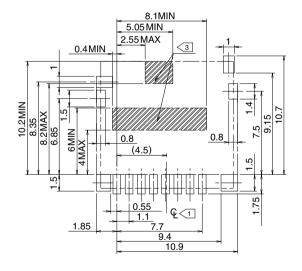


■DM3D, Push-Pull (no ejection mechanism), Top board mounting (Standard)

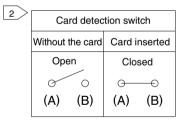




■Recommended PCB mounting pattern



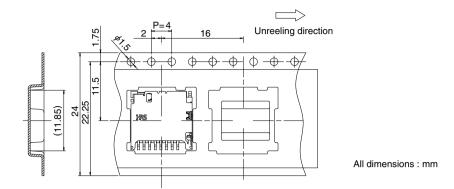
Q indicates the center line of the microSD card slot.

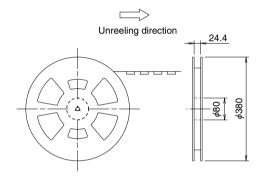


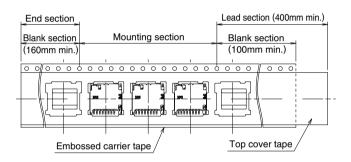
No conductive traces.

All dimensions : mm

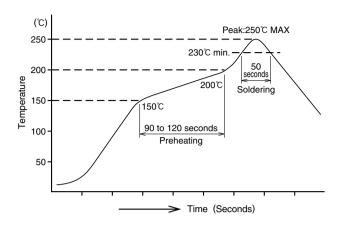
• Embossed carrier tape dimensions (2,000 pcs/reel)







◆ Recommended temperature profile



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.

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.
- 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.

Refer to applicable Operation Manual listed below for additional precautions.

0	O C Marchall Marchael
Series	Operation Manual Number
DM3AT Series	ETAD-F0345
DM3BT Series	ETAD-F0324
DM3CS Series	ETAD-F0335
DM3D Series	ETAD-F0353

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.

Hogehillweg #8 1101 CC Amsterdam Z-0

Phone: +31-20-6557460 Fax: +31-20-6557469 http://www.hirose.com/eu/

GERMANY:

HIROSE ELECTRIC EUROPE B.V. HANOVER OFFICE

Bayernstr. 3, Haus C 30855 Langenhagen, Germany Phone: +49-511 97 82 61 30 Fax: +49-511 97 82 61 35

CHINA:

HIROSE ELECTRIC (SHANGHAI) CO., LTD.

1601, Henderson Metropolitan, NO.300, East Nanjing Road, Huangpu District, Shanghai, China 200001

Phone: +86-21-6391-3355 Fax: +86-21-6391-3335 http://www.hirose.com/cn/

http://www.hirose.com/eu/

HONG KONG:

HIROSE ELECTRIC HONGKONG TRADING CO., LTD.

Room 1001, West Wing, Tsim Sha Tsui Centre, 66 Mody Road, Tsim Sha Tsui East, Kowloon, 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/

MALAYSIA:

PENANG REPRESENTATIVE OFFICE

1-21-01, Suntech @ Penang Cybercity (1164), Lintang Mayang Pasir 3,11950, Bayan Baru, Penang, Malaysia. Phone: +604-619-2564

Fax: +604-619-2574 http://www.hirose.com/sg/

USA:

HIROSE ELECTRIC (U.S.A.), INC. SAN JOSE OFFICE

2841 Junction Ave, Suite 200 San Jose, CA. 95134 Phone: +1-408-253-9640 Fax: +1-408-253-9641 http://www.hirose.com/us/

GERMANY:

HIROSE ELECTRIC EUROPE B.V. GERMAN BRANCH

Schoenbergstr. 20, 73760 ostfildern

Phone: +49-711-456002-1 Fax: +49-711-456002-299 http://www.hirose.com/eu/

FRANCE:

HIROSE ELECTRIC EUROPE B.V. PARIS OFFICE

Regus La Garenne Colombes, Place de La Belgique, 71 Boulevard National La Garenne Colombes, 92250, France Phone: +33 (0) 1 7082 3170

Fax: +33 (1) 7082 3101 http://www.hirose.com/eu/

CHINA:

HIROSE ELECTRIC (SHANGHAI) CO.,LTD. BEIJING BRANCH

A1001, Ocean International Center, Building 56# East 4th Ring Middle Road, ChaoYang District, Beijing, 100025

Phone: +86-10-5165-9332 Fax: +86-10-5908-1381 http://www.hirose.com/cn/

TAIWAN:

HIROSE ELECTRIC TAIWAN CO., LTD.

103 8F, No.87, Zhengzhou Rd., Taipei

Phone: +886-2-2555-7377 Fax: +886-2-2555-7350 http://www.hirose.com/tw/

INDIA:

HIROSE ELECTRIC SINGAPORE PTE. LTD. DELHI LIAISON OFFICE

Office NO.552, Regus-Green Boulevard, Level5, Tower C, Sec62, Plot B-9A, Block B, Noida, 201301, Uttar Pradesh, India

Phone: +91-12-660-8018 Fax: +91-120-4804949 http://www.hirose.com/sg/

THAILAND:

BANGKOK OFFICE (REPRESENTATIVE OFFICE)

Unit 4703, 47th FL., 1 Empire Tower, South Sathorn Road, Yannawa, Sathorn, Bangkok 10120 Thailand

Phone: +66-2-686-1255 Fax: +66-2-686-3433 http://www.hirose.com/sg/

USA:

HIROSE ELECTRIC (U.S.A.), INC. DETROIT OFFICE (AUTOMOTIVE)

17197 N. Laurel Park Drive, Suite 253,

Livonia, MI 48152 Phone: +1-734-542-9963 Fax: +1-734-542-9964 http://www.hirose.com/us/

GERMANY:

HIROSE ELECTRIC EUROPE B.V. NUREMBERG OFFICE

Neumeyerstrasse 22-26, 90411 Nurnberg

Phone: +49-911 32 68 89 63 Fax: +49-911 32 68 89 69 http://www.hirose.com/eu/

UNITED KINGDOM:

HIROSE ELECTRIC EUROPE BV (UK BRANCH)

4 Newton Court, Kelvin Drive, Knowlhill, Milton Keynes, MK5 8NH Phone: +44-1908 202050

Phone: +44-1908 202050 Fax: +44-1908 202058 http://www.hirose.com/eu/

CHINA:

HIROSE ELECTRIC TECHNOLOGIES (SHENZHEN) CO., LTD.

Room 09-13, 19/F, Office Tower Shun Hing Square, Di Wang Commercial Centre, 5002 Shen Nan Dong Road, Shenzhen City, Guangdong Province, 518008

Phone: +86-755-8207-0851 Fax: +86-755-8207-0873 http://www.hirose.com/cn/

KOREA:

HIROSE KOREA CO.,LTD.

250, Huimanggongwon-ro, Siheung-si, Gyeonggi-do, Korea, 15083 Phone: +82-31-496-7000 or 7124

Fax: +82-31-496-7100 http://www.hirose.co.kr/

INDIA:

HIROSE ELECTRIC SINGAPORE PTE. LTD. BANGALORE LIAISON OFFICE

Unit No-403, 4th Floor, No-84, 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/



HIROSE ELECTRIC CO.,LTD.

2-6-3,Nakagawa Chuoh,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