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JNPS-0813B

製品仕様書  
Product Specification

3M 印  
MDR  
ボードマウント リセプタクル  
ライトアングルタイプ  
102XX-52XX PX

3M Brand  
MDR  
Board Mount Receptacle  
Right Angle Type  
102XX-52XX PX

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SUMITOMO 3M LIMITED

ELECTRONIC SOLUTIONS DIVISION  
TECHNICAL DEPARTMENT

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## 1. FUNCTION

This connector is one of MDR board mount receptacle right angle series. And mating side has 2 rows of female contacts with the pitch of 1.27mm and contact tails are arranged in 1.27mm×1.905mm staggered grid. This connector can be mounted on the compatible PC board and mating with MDR plug connector enable to have the electrical performance.

## 2. COMPATIBLE OBJECTS

### 2-1 COMPATIBLE CONNECTORS

3M BRAND MDR PLUG : 101XX-XXXX XX

### 2-2 COMPATIBLE PC BOARDS

PCB with solder plating hole

See RELATED SPECIFICATION DRAWINGS recommended hole pattern.

PRODUCT No.	PCB RETENSION METHOD	PCB RETENSION HOLE DIA.	PCB THICKNESS
102XX-520X XX	SCREW LOCK	φ 2.8 mm	3.9 mm Tail: 3.0 mm Max. 2.8 mm Tail: 1.6 mm Max. 2.3 mm Tail: 1.2 mm Max.
102XX-521X XX			
102XX-524X XX		φ 3.2 mm	
102XX-52AX XX	GROUND LOCK TYPE1	φ 2.6 mm	1.6 mm
102XX-52BX XX			
102XX-52EX XX			
102XX-52DX XX	GROUND LOCK TYPE2	φ 2.8 mm	0.6 mm or 1.2 mm
102XX-52FX XX	GROUND LOCK TYPE3	φ 2.8 mm (recommended) or φ 2.6 mm	0.6 mm Min. 1.6 mm Max.
102XX-52GX XX			
102XX-52HX XX			

### 2-3 COMPATIBLE PANELS

Thickness of panels: 2.0 mm Max. (Including with the thickness of washers)

See RELATED SPECIFICATION DRAWINGS for recommended panel cut-out.

## 3. RELATED SPECIFICATION DRAWINGS

See the drawings described in JNPD-0813.

## 4. RELATED TEST STANDARDS

MIL-STD-202

JEIDA-38-1984

JIS C 0050

JNTM-0039, JNTM-0040

\*JNTM: Test Method Standard of Sumitomo 3M for Electronic and Electrical Component Parts.

## 5. APPLICATION

## PRODUCT NUMBER INFORMATION

102 XX - 5 2 X X PX

## PLATING THICKNESS SUFFIX

PL : under Nickel Plating

CONTACT AREA / Gold Plating 0.2  $\mu$ m Min.

TAIL AREA / Gold Flash Plating

with Lubricant Treatment

PE : under Nickel Plating

CONTACT AREA / Gold Plating 0.5  $\mu$ m Min.

TAIL AREA / Gold Flash Plating

PC : under Nickel Plating

CONTACT AREA / Gold Plating 0.76  $\mu$ m Min.

TAIL AREA / Gold Flash Plating

## SOLDER TAIL

2 : 3.9mm

3 : 2.8mm

4 : 2.3mm

## RETENTION FEATURE

0 : Lock Stand (M2.6mm) for Panel and Screw Lock (M2.6) for PC Board

1 : Lock Stand (M2.5mm) for Panel and Screw Lock (M2.5) for PC Board

4 : Lock Stand (No.4-40) for Panel and Screw Lock (No.4-40) for PC Board

A : Lock Stand (M2.6mm) for Panel and Ground Lock Type 1 for PC Board

B : Lock Stand (M2.5mm) for Panel and Ground Lock Type 1 for PC Board

D : Lock Stand (M2.6mm) for Panel and Ground Lock Type 2 for PC Board

E : Lock Stand (No.4-40) for Panel and Ground Lock Type 1 for PC Board

F : Lock Stand (M2.6mm) for Panel and Ground Lock Type 3 for PC Board

G : Lock Stand (M2.5mm) for Panel and Ground Lock Type 3 for PC Board

H : Lock Stand (No.4-40) for Panel and Ground Lock Type 3 for PC Board

## TYPE

2 : Standard Body

## PIN CONFIGURATIONS

5 : Board Mount Right Angle Type

## CONTACT QUANTITY

XX : XX Pos. (Exception: 100 pos. is shown "A0".)

## PRODUCT SERIES NAME

102 : MDR Receptacle

## 6. QUALITY PERFORMANCE

### 6-1 RATING

ITEM	RATING
CURRENT VOLTAGE TEMPERATURE	0.5A Max. AC: 150V Max. / DC: 200V Max. -55°C ~ 85°C

### 6-2 PHYSICAL SPECIFICATIONS

\* The value in ( ) is reference.

TEST DESCRIPTION	REQUIREMENT	TEST CONDITION	RELATED STANDARD
CONTACT RETENTION FORCE	7.85N (0.8 kgf) Min.	Tensile speed 5mm / min.	_____
INSERTION & WITHDRAWAL FORCE	Insertion Force: 1.47N (150 gf) Max. Withdrawal Force: 0.39N (40 gf) Min.	Tensile speed 5mm / min with Compatible connector. Spec. Value is estimated by one contact pin.	_____
CONTACT SOLDER ABILITY	Wetting: 95% Min. or Zero cross time: 3 seconds Max.	Solder: Sn-3Ag-0.5Cu - Wetting Measurement: 245°C, 3 seconds - Wetting Balance Method: 245°C	JNTM-0039 JIS C 0050
SOLDERING HEAT RESISTANCE	Connector should not have any defect portions after test.	Dip soldering: 260°C, 10 seconds, 2 times or 263°C, 5seconds, 2 times * Pre-heat Condition: Temp. of Components 100°C Max. Duration 60 seconds Max. Soldering iron: 390°C, 3 seconds, 2 times	JNTM-0040

## 6-3 ELECTRICAL SPECIFICATIONS

TEST DESCRIPTION	REQUIREMENT	TEST CONDITION	RELATED STANDARD
DIELECTRIC WITHSTANDING VOLTAGE	No appearance of arcing and break down. Leak current: 1mA Max.	Impressed voltage is AC 500V rms. between adjacent two contacts for one minute.	_____
INSULATION RESISTANCE	500M $\Omega$ Min.	Impressed voltage is DC 500V between adjacent two contacts for one minute.	_____
DISCONTINUITY	Less than 1 $\mu$ s	- Vibration test * as the part of 3M SEQUENCE-II - Mechanical sock test	See Table 1.
CONTACT RESISTANCE	Initial / for each plating spec. 35m $\Omega$ Max.	Contact resistance is measured at Short Circuit. Current: 1.5mA Open Circuit Voltage: 20mV by 4 terminal method. * Measurement values include the resistance of contact pins as conductive material.	See Table 1.
	Change of contact resistance after evaluation tests/ for each plating spec. $\pm$ 25m $\Omega$ Max.	(1) <u>PL Plating</u> 3M SEQUENCE -I / mating (30 cycles) $\rightarrow$ moisture $\rightarrow$ salt spray 3M SEQUENCE -II / thermal shock $\rightarrow$ humidity $\rightarrow$ vibration 3M SEQUENCE -III / thermal life H <sub>2</sub> S GAS SEQUENCE / mating (30 cycles) $\rightarrow$ H <sub>2</sub> S gas DURABILITY / 300 cycles MECHANICAL SHOCK /  (2) <u>PE Plating and PC Plating</u> 3M SEQUENCE -I / mating (50 cycles) $\rightarrow$ moisture $\rightarrow$ salt spray 3M SEQUENCE -II / thermal shock $\rightarrow$ humidity $\rightarrow$ vibration 3M SEQUENCE -III / thermal life H <sub>2</sub> S GAS SEQUENCE / mating (50 cycles) $\rightarrow$ H <sub>2</sub> S gas DURABILITY / 500 cycles  * NOTE: See Table 1. for environmental tests.	

**Table 1: ENVIROMENTAL TEST**

ITEM	TEST CONDITION	RELATED STANDARD
MOISTURE	-10 ~ 65°C, Relative Humidity 95% / 10 cycles	MIL-STD-202F106D
SALT SPRAY	NaCl 5% solution, 35°C / 48 hours	MIL-STD-202F101D
THERMAL SHOCK	-55°C→25°C→85°C→25°C / 5 cycles	MIL-STD-202F107G
HUMIDITY (STEADY STATE)	40°C, Relative Humidity 95% / 96 hours	MIL-STD-202F103B
THERMAL LIFE	Steady Current: Current Rating × 110%, 85°C / 1000 hours	—————
H <sub>2</sub> S GAS	3 ± 1 ppm, 40°C, Relative Humidity 70 ~ 80% / 96 hours	JEIDA-38-1984
VIBRATION	Sweep Freq.: 10 ~ 55Hz, Amplitude: 1.52mm (or 98 m/s <sup>2</sup> ) Sweep Cycle: 1 min., Sweep time: 2 hours Sweep Directions: X, Y, Z	MIL-STD-202F201A
MECHANICAL SHOCK	490 m/s <sup>2</sup> , 11ms, Half sine shock pulse. 3 times / X,Y,Z directions (Total 9 times)	MIL-STD-202E213B

## 7. PLATING SPEC INDICATION ON CONNECTOR

The first letter, in stamped 3 letters on the connector body for lot numbering, identified the following plating specs.

R XX : PL plating

Z XX : PE plating

Y XX : PC plating

\* XX : two alphabet letters

## 8. PACKAGE & IDENTIFICATION

These products are packed with plastic tray and carton box for transit.

Carton box is identified by part number, quantity, maker name and lot number.

## 9. STORAGE

This products shall be stored in a room, ambient temperature 5 ~ 35°C, and ambient humidity 40 ~ 70%.

## 10. ATTENTIONS

### 10-1 FIXING OF CONNECTOR

The connector should be fixed on panel by screws.