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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 COMPAIBLE 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 µm Min.
  TAIL AREA / Gold Flash Plating
  with Lubricant Treatment
- PE : under Nickel Plating
  CONTACT AREA / Gold Plating 0.5 µm Min.
  TAIL AREA / Gold Flash Plating
- PC : under Nickel Plating
  CONTACT AREA / Gold Plating 0.76 µm 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	0.5A Max.
VOLTAGE	AC: 150V Max. / DC: 200V Max.
TEMPERATURE	-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 RESIDENSE	500MΩ Min.	Impressed voltage is DC 500V between adjacent two contacts for one minute.	———
DISCONTINUITY	Less than 1μs	- Vibration test * as the part of 3M SEQUENCE-II - Mechanical sock test	See Table 1.
CONTACT RESISTANCE	Initial / for each plating spec. 35mΩ 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. ± 25mΩ Max.	(1) PL Plating 3M SEQUENCE -I / mating (30 cycles) → moisture → salt spray 3M SEQUENCE -II / thermal shock → humidity → vibration 3M SEQUENCE -III / thermal life H_2S GAS SEQUENCE / mating (30 cycles)→ H_2S gas DURABILITY / 300 cycles MECHANICAL SHOCK / (2) PE Plating and PC Plating 3M SEQUENCE -I / mating (50 cycles) → moisture → salt spray 3M SEQUENCE -II / thermal shock → humidity → vibration 3M SEQUENCE -III / thermal life H_2S GAS SEQUENCE / mating (50 cycles)→ H_2S 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_2S 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^2) Sweep Cycle: 1 min., Sweep time: 2 hours Sweep Directions: X, Y, Z	MIL-STD-202F201A
MECHANICAL SHOCK	490 m/s^2, 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.