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PRODUCT SPECIFICATION

NO.SPEC-ANB-5001

RF -V TYPE BOARD END CONNECTOR
(Product NO. ANB16401-511)

	APPROVED	CHECKED	PREPARED	ISSUED BY :
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Date	2022-01-10	2022-01-10	2022-01-10	

***** **REVISION HISTORY** *****

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Rev.	Date	Revision Page No.	Notes
A	2022-01-10	New Reversion	初次发行
B			
C			
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1. SCOPE

This product described in this document is a SMT Type Micro Coaxial RF Receptacle, whose part name in our comply is RF REC. It is special for micro strip-to -Coaxial adapter in RF circuit, such as Mobile Phone, Wireless Net, Mini PCI, Bluetooth, PDA, GPS, Electric Measurement Instruments and so on.

2. REQUIREMENT

2.1. PRODUCT DIMENSION

Product shall be intermateable with industry standard product of opposite gender. This connector shall have the dimensions as shown in Drawing .

2.2. PCB/PANEL LAYOUT

The recommended PCB layout is shown in Drawing .

2.3. BILL OF MATERIAL

The bill of material and product number of Connectors are described in Drawing .

2.4. MECHANICAL & ELECTRICAL CHARACTERISTIC

The connector shall have the mechanical and electrical performance as described in Table I.

2.5. PACKAGING

Parts shall be packaged according to requirements specified in purchase order for safe delivery. Connector container and the packing specification are shown in Drawing .

2.6. HARMFUL MATERIAL CONTROL

Harmful material controls please follow the Doc. No. QW-QA-10.

3. Part No., construction, material and finish

- (1) Part No. Receptacle: ANB16401-511 Plug: ANCZ1***-***,
- (2) Construction, material and finish of the connector are covered as each drawing.
- (3) The plug side application cable requirements

Characteristic impedance: $50 \pm 5 \Omega$ by TDR method

Nominal capacitance (Reference value) : 96 pF/m

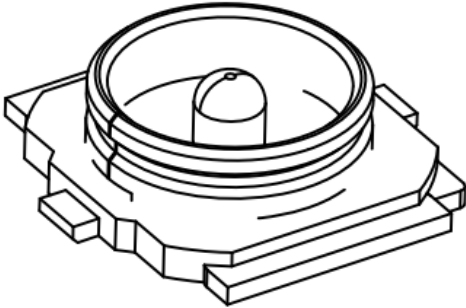
Conductor resistance of inner conductor at 293K (20°C) (Reference value) : 1400 ohm/km

Insulation resistance: 1000 mega-ohm.km MIN.

Dielectric withstand voltage: no breakdown at AC500V for 1 minutes.

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4. PRODUCT PICTURE



5. Ratings

Rated voltage	AC60Vrms
Nominal characteristic Impedance	50 ohm
Frequency	DC~8GHz
VSWR	Plug: 0.1~3GHZ 1.3Max. 3~6GHZ 1.5Max. 6~8GHZ 1.6Max. Receptacle: 0.1~3GHZ 1.3Max. 3~6GHZ 1.4Max. 6~8GHZ 1.5Max.
Service Temperature	233K~363K(-40°C~90°C)
Storage condition	Temperature:248K~333K(-25°C~+60°C) Humidity:85% Max. (No condensation)

6. Test and Performance

Test Condition

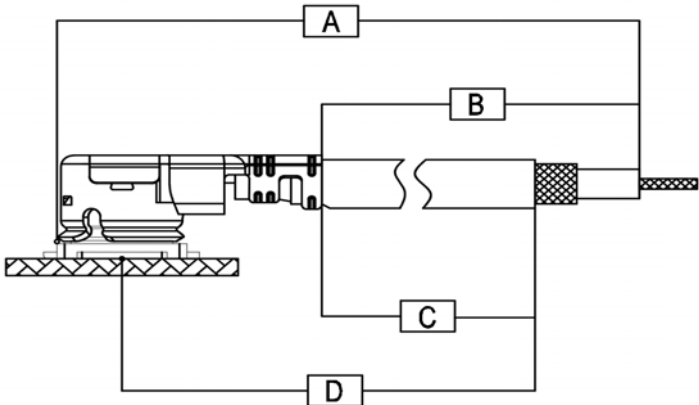
Unless otherwise specified, all tests and measurements shall be performed under the following condition in accordance with MIL-STD-202G.

Temperature -----288K~308K(15°C~35°C)

Humidity -----45~75%R.H.

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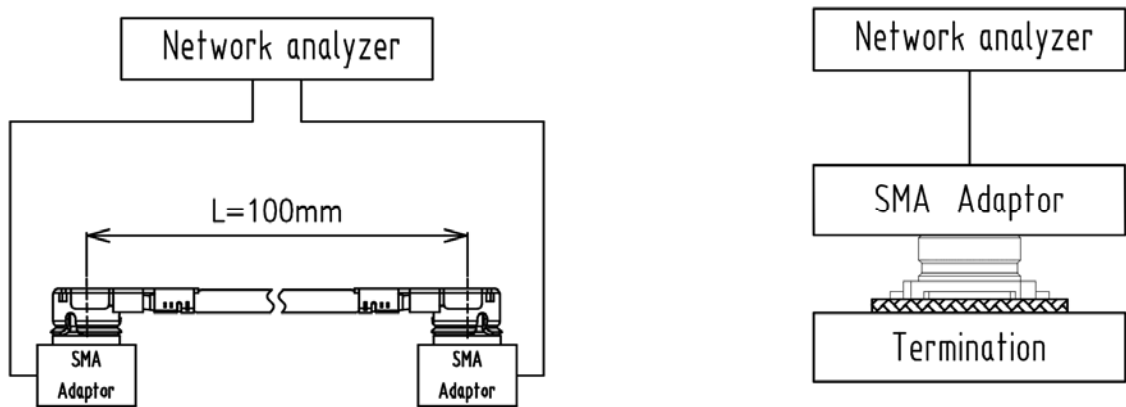
6-1 Electrical Performance

NO	Item	Test conditions	Specifications
1	Contact resistance	<p>Solder the receptacle connector to the test board and mate the plug connector together, then measure the contact resistance as shown in Fig.1 by the four terminal method. Apply the low level condition in accordance with MIL-STD-202G, Method307.</p> <p>Open circuit voltage: 20mV Max.</p> <p>Circuit current :10mA Max. (DC or AC1kHz)</p> <p>Contact resistance of Inner contact=A-B</p> <p>Contact resistance of Ground contact=D-C</p>	<p>Contact resistance of inner contact Initial: 20 mΩ Max. After testing: ΔR20 mΩ Max.</p> <p>Contact resistance of ground contact Initial: 20 mΩ Max. After testing: ΔR20 mΩ Max.</p>
<p>Fig. 1</p> 			
2.	Insulation Resistance	<p>Mate the receptacle and plug connector together, and then apply DC 100V between the inner contact and the ground contact in accordance with MIL-STD-202G, Method 302.</p>	<p>Initial :500MΩ Min. After testing :100 MΩ Min.</p>

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NO	Item	Test conditions	Specifications
3	Dielectric Withstanding Voltage	Mate the receptacle and plug connector together, and then apply AC 200V rms between the inner contact and the ground contact for a minute in accordance with MIL-STD-202G, Method 301.	No creeping discharge, flashover, no insulator breakdown shall occur.
4.	VSWR	Measure the VSWR as shown in Fig. 2 by the network analyzer. Frequency: 100M~8GHz	1.3Max. at 0.1~3GHz 1.4Max.at 3~6GHz 1.5Max.at6~8GHz

Fig. 2

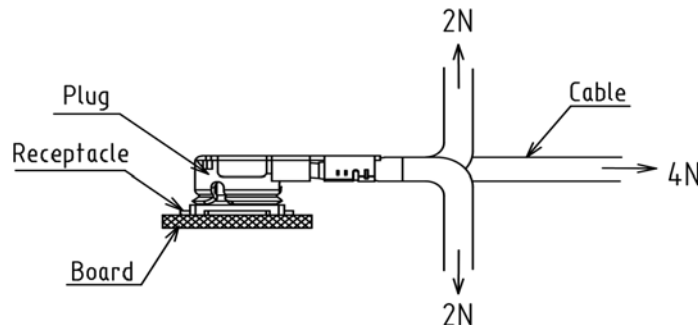


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6-2 Mechanical Performance

NO	Item	Test conditions	Specifications
1	Mating Force And Un-mating Force	Solder the receptacle connector to the test board, then place the board and plug on push-on/pull-off machine, measure of initial and mating/un-mating 30 cycles at speed 25 ± 3 mm/min. along the mating axis.	Mating Initial : 30 N Max. 30cycles: 30 N Max. Total un-mating force Initial :4N Min. After 30 cycles:2N Min
2	Durability	Mate and un-mate the receptacle connector(soldered to the test board) and plug connector 30 cycles at speed 25 ± 3 mm/minutes along the mating by the push-on / pull-off machine.	[Appearance] No abnormality [Contact Resistance] Shall meet 6.1.1
3	Contact resistance with force on the cable	Apply force on the cable as shown in Fig.4 During the testing, run 100mA DC to check electrical discontinuity.	[Appearance] No abnormality [Electrical discontinuity] No electrical discontinuity grater than $1 \mu s$ shall occur.

Fig.3



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NO	Item	Test conditions	Specifications
5	Vibration	<p>Apply the following vibration to the mating connector.</p> <p>During the testing, run 100mA DC to check electrical discontinuity.</p> <p>Frequency: 10Hz → 100 Hz → 10Hz/approx 20 minutes.</p> <p>Half amplitude, Peak value of acceleration : 1.5mm or 59m/s²(6G)</p> <p>Directions, cycle: 3 mutually perpendicular direction,3 cycles about each direction.</p>	<p>[Appearance] No abnormality</p> <p>[Contact Resistance] Shall meet 6.1.1</p> <p>[Electrical discontinuity] No electrical discontinuity grater than 1 μ s shall occur.</p>
6	Shock	<p>Apply the following shock to the mating connector in accordance with MIL-STD-202G,Method 213,Condition B.</p> <p>During the testing, run 100mA DC to check electrical discontinuity.</p> <p>Peak value of acceleration: 735 m/s²(75G)</p> <p>Duration :11msec</p> <p>Wave Form :half sinusoidal</p> <p>Direction, cycle :6 mutually perpendicular direction, 3cycle about each direction.</p>	<p>[Appearance] No abnormality</p> <p>[Contact Resistance] Shall meet 6.1.1</p> <p>[Electrical discontinuity] No electrical discontinuity grater than 1 μ s shall occur.</p>

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6-3 Environmental Performance

NO	Item	Test conditions	Specifications
1	Thermal Shock	Apply the following environment to the mating connector in accordance with MIL-STD-202G, Method 107G, Condition A Temperature : 218K (-55°C)/ 30 minutes → 358K(85°C)/30 minutes. Transition time: 5min.Max. No. of cycles : 5 cycles	[Contact Resistance] Shall meet 6.1.1 [Insulation Resistance] Shall meet 6.1.2. [Dielectric Withstanding Voltage] Shall meet 6.1.3. [Appearance] No abnormality
2	Humidity (Steady State)	Apply the following environment to the mating connector in accordance with MIL-STD-202G, Method 103, Condition B. Temperature : 313±2K (40±2°C) Humidity : 90~95%RH Duration : 96 hours	[Contact Resistance] Shall meet 6.1.1 [Insulation Resistance] Shall meet 6.1.2. [Dielectric Withstanding Voltage] Shall meet 6.1.3. [Appearance] No abnormality
3	Salt Water Spray	Solder the receptacle connector to the test board, then mate plug connector, and expose them to the following environment in accordance with MIL-STD-202, Method 101, Condition B. Temperature : 308±2K (35±2°C) Salt water density : 5±1%(by weight) Duration : 48 hours	[Contact Resistance] Shall meet 6.1.1 [Appearance] No abnormality

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4	High Temperature Life	Apply the following environment to the mating connector Temperature : 363±2K (90±2°C) Duration : 96 hours	[Contact Resistance] Shall meet 6.1.1 [Appearance] No abnormality
5	H2S Gas	Apply the following environment to the mating connector. Temperature : 313±2K (40±2°C). Relative Humidity : 80±5%RH Gas: H2S 3±1ppm Duration:96 hours	[Contact Resistance] Shall meet 6. 1.1 [Appearance] No abnormality adversely affecting the performance shall occur.

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6-4 Soldering

NO	Item	Test conditions	Specifications
1	Solder ability	Dip the soldering point of the contacts in the solder bath at $518 \pm 5K(245 \pm 5^{\circ}C)$ for 5 ± 0.5 seconds after immersing the tine in the flux of RMA type for 5 to 10 seconds in accordance with MIL-STD-202F,Method 208E.	More than 95%of the dipped surface becomes wet and the pinhole that should not gather at one point is less than 5%
2	Soldering Heat Resistance	Reflow temperature profile.:Fig.5 The number of reflow is 2 times. Metal mask size:Fig-6	No abnormality Adversely Affecting the performance shall not occur.

Fig.5

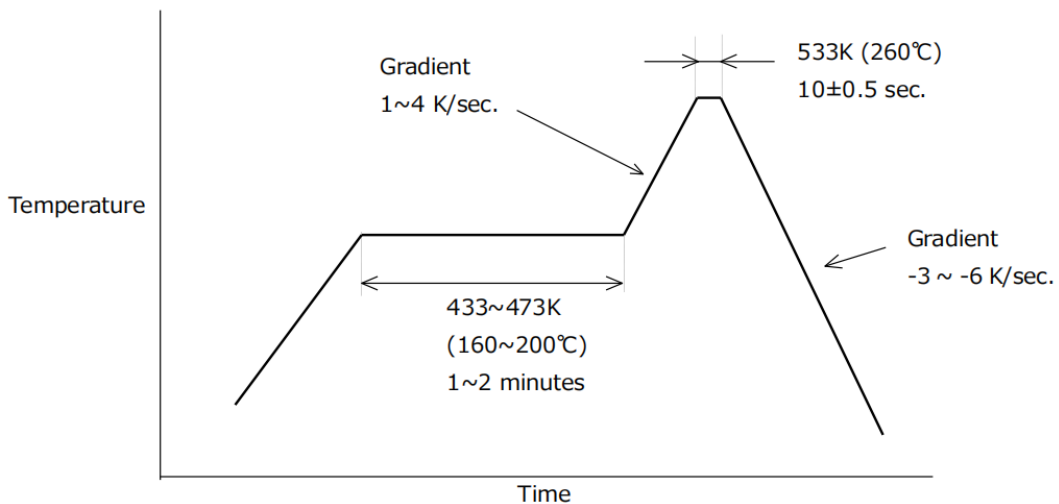


Table II: Test Sequence and Sample Quantity

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Test: Measurement or Examination	A	B	C	D	E	F	G	H	I	J	K	L	M
1.Contact Resistance				1,3	1,3	1,3	1,3	1,5	1,5	1,3	1,3	1,3	
2.Insulation Resistance								2,6	2,6				
3.Dielectric Withstanding Voltage								3,7	3,7				
4.VSWR	1												
5.Un-mating force		1											
6.Durability			2										
7.Contact resistance with force on the cable				2									
8.Vibration					2								
9.Shock						2							
10. Thermal Shock							4						
11. Humidity								4					
12. Salt Water Spray									2				
13. High Temperature Life										2			
14.H2S Gas											2		
15. Solder ability												2	
16.Soldering Heat Resistance													1
Sample QTY.	10	10	10	10	10	10	10	10	10	10	10	10	10