PRODUCT SPECIFICATION

1.0 SCOPE
Product performance and test methods for Micro-Coaxial connectors

2.0 PRODUCT DESCRIPTION
Micro-Coaxial Connector

3.0 RATINGS

A. VOLTAGE
60 Vrms

B. TEMPERATURE
-40℃ TO +90℃

C. OPERATING FREQUENCY
DC to 6 GHz

D. IMPEDANCE
50 OHM

E. VSWR
1.3 MAX (DC to 6 GHz)

4.0 TEST CONDITION

Unless otherwise specified all tests performed in accordance with MIL-STD-202

5.1 ELECTRICAL:

(1) Contact Resistance:

A. Measure contact resistance of mated pair.

B. Requirement:

Inner contact: 20 mΩ MAX

Outer contact: 10 mΩ MAX

(2) Insulation Resistance:

A. Apply 100V between inner and outer contacts in accordance with MIL-STD-202, Method 302.

B. Requirement:

500MΩ MIN

(3) Dielectric Withstand Voltage:

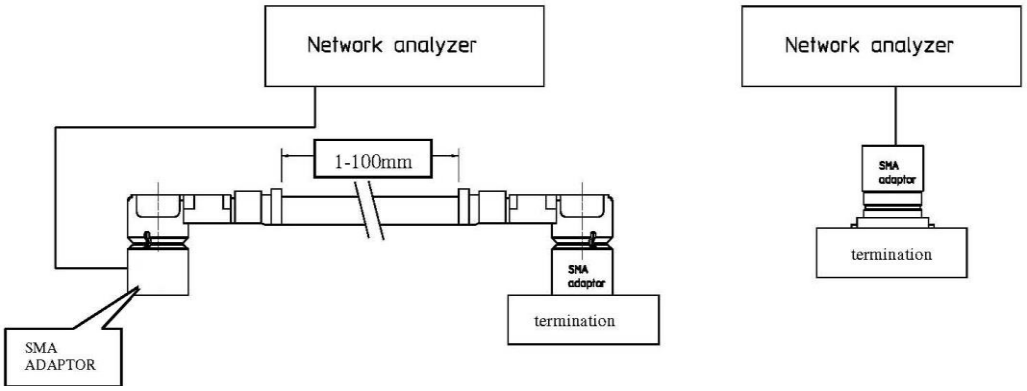
A. Apply AC 200 Vrms between inner and outer contact in accordance with MIL-STD-202, Method 301. A leakage current 6mA MAX.

B. Requirement: No breakdowns or damage to connector.

(4) VSWR

A. Measure VSWR as shown below (or using equivalent setup) from DC to 6 GHz

B. Requirement: 1.3 MAX (DC TO 6 GHz) for mated pair



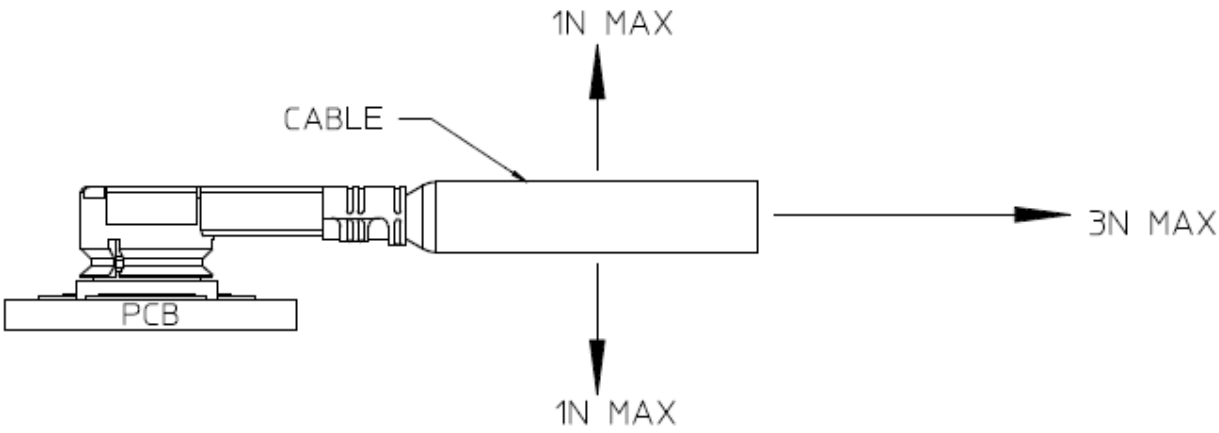
5.2 MECHANICAL:

(1) Mating & Unmating Force
A. Mate cycle parts 30 times.
B. Requirements:
Mating force: Initial 20N MAX. After 30 cycles 15N MAX.
Unmating force: Initial 5N MIN. After 30 cycles 1.5N MIN.

(2) Durability :
A. Mate cycle parts 30 times.
B. Requirements:
Inner contact resistance: Initial 20 mΩ MAX. After testing 25 mΩ MAX.
Outer contact resistance: Initial 10 mΩ MAX. After testing 15 mΩ MAX.

(3) Cable retention force (Mated status):
A. Testing: apply force on the cable as shown in Fig.3 with 100mA applied.
B. Requirements:
Appearance: No looseness, chipping, breakage or other damage.
Electrical: No discontinuity greater than 1 microsecond.

Inner contact resistance: Initial 20 mΩ MAX. After testing 25 mΩ MAX.
Outer contact resistance: Initial 10 mΩ MAX. After testing 15 mΩ MAX



Note: See E-73598-021-SK to edit above sketch

(4) Vibration
A. Apply the following vibration profile to mated connector pair while 100mA current is applied:
Frequency : 10Hz ⟶ 100Hz ⟶ 10Hz/ 15minutes
Half amplitude, peak value of acceleration : 1.5mm or 59m/s^2 (6G)
Axes: 3 mutually perpendicular directions, 5 cycles (75min) for each direction
B. Requirements:
Appearance: No looseness, chipping, breakage or other damage.
Electrical: No discontinuity greater than 1 microsecond.

Inner contact resistance: Initial 20 mΩ MAX. After testing 25 mΩ MAX.
Outer contact resistance: Initial 10 mΩ MAX. After testing 15 mΩ MAX.

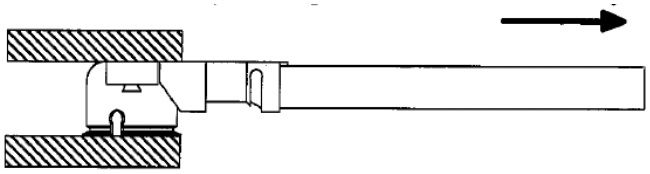
(5) Shock

A. Apply profile below to mated pair in accordance with MIL-STD-202, Method 213, condition B. During testing apply DC 100mA.
Peak value of acceleration: 735m/s^2 (75G)
Duration : 11 milliseconds
Wave Form: Half sinusoidal
Directions: 6 mutually perpendicular directions, 3 cycles in each direction

B. Requirement
Appearance: No looseness, chipping, breakage or other damage.
Discontinuity: No discontinuity greater than 1 microsecond.
Inner contact resistance: Initial 20 mΩ MAX. After testing 25 mΩ MAX.
Outer contact resistance: Initial 10 mΩ MAX. After testing 15 mΩ MAX.

(6) Cable crimp strength

A. Testing: Pull cable as shown below.



B. Requirements:
No damage after 4N pull force.

5.3 ENVIRONMENTAL:

(1) Thermal shock

A. Testing: Apply the following profile for 5 cycles:

-40℃/30 minutes ⟶ 5~35℃/5 minutes MAX.⟶ 90℃/30 minutes⟶ 5~35℃/5 minutes MAX.

B. Requirements:

Appearance: No looseness, chipping, breakage or other damage.
Inner contact resistance: Initial 20 mΩ MAX. After testing 25 mΩ MAX.
Outer contact resistance: Initial 10 mΩ MAX. After testing 15 mΩ MAX.
Insulator resistance: Initial 500MΩ MIN. After testing 100 MΩ MIN.

(2) Humidity

A. Testing: Apply the following profile in accordance with MIL-STD-202, Method 103, Condition B:

Temperature: 40±2℃
Humidity: 90~95%
Duration: 96 hours

B. Requirements:

Appearance: No looseness, chipping, breakage or other damage.
Inner contact resistance: Initial 20 mΩ MAX. After testing 25 mΩ MAX.
Outer contact resistance: Initial 10 mΩ MAX. After testing 15 mΩ MAX.
Insulator resistance: Initial 500MΩ MIN. After testing 100 MΩ MIN.

(3) High Temperature Life

A. Testing: Apply the following profile:

Temperature: 90±2℃
Duration: 96 hours

B. Requirements:

Appearance: No looseness, chipping, breakage or damage.
Inner contact resistance: Initial 20 mΩ MAX. After testing 25 mΩ MAX.
Outer contact resistance: Initial 10 mΩ MAX. After testing 15 mΩ MAX.

(4) Salt spray

A. Testing: Apply the following profile in accordance with MIL-STD-202, Method 101:

Temperature: 35±2℃
Salt percentage (by weight): 5±1%
Duration: 48 hours

B. Requirements:

Appearance: No exposure of base metal on interface or mating surface.
Inner contact resistance: Initial 20 mΩ MAX. After testing 25 mΩ MAX.
Outer contact resistance: Initial 10 mΩ MAX. After testing 15 mΩ MAX.
Insulation resistance: Initial 500MΩ MIN. After testing 100 MΩ MIN.