HAND FLEX™

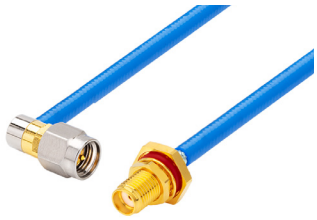
# Coaxial Cable

# 141-6SBSMR+

50Ω 6 inch DC to 18 GHz SMA Female Bulkhead to Right-Angle SMA Male

## THE BIG DEAL

- Wideband Frequency Coverage, DC to 18 GHz
- Low Insertion Loss, 0.34 dB Typ. at 18 GHz
- Excellent Return Loss, 24 dB Typ. at 18 GHz
- SMA Female Bulkhead Connector at One End
- Hand Formable to Almost Any Custom Shape Without Special Bending Tools
- 8 mm Bend Radius for Tight Installations
- Anti-Torque Nut Prevents Cable Stress During Installation
- Insulated Outer Jacket Standard
- Connector Interface, Meets MIL-STD-348
- Ideal for Interconnect of Assembled Systems



*Generic photo used for illustration purposes only*

| | |
|---|---|
| **Model No.** | 141-6SBSMR+ |
| **Case Style** | KQ1927-6 |
| **Connectors** | SMA Female Bulkhead to Right-Angle SMA Male |

**+RoHS Compliant**
The +Suffix identifies RoHS Compliance.
See our website for methodologies and qualifications

## APPLICATIONS

- Bulkhead Connector Mounts on Front Panel of Equipment Racks
- Replacement for Custom Bent 0.141" Semi-Rigid Cables
- Communication Receivers and Transmitters
- Military and Aerospace System
- Environmental and Test Chambers

## PRODUCT OVERVIEW

Mini-Circuits' 141 SBSMR+ Series Hand-Flex™ Coaxial Cables are ideal for interconnection of coaxial components or sub-systems to equipment racks. The construction includes a silver-plated copper-clad steel center conductor which maintains the shape after bending. The outer shield is copper braid, tin soaked, which minimizes signal leakage and at the same time flexible for easy bend. Dielectric is low loss PTFE. Both connectors have passivated stainless steel coupling nut. Right-angle SMA male has a gold-plated connector body, brass center conductor and SMA female has gold-plated BeCu center conductor.

## KEY FEATURES

| Feature | Advantages |
|---|---|
| Hand-Formable RF Cables | The 141 Series Hand-Flex cables are hand formable making them ideal for use integrating coaxial components and sub-assemblies without the need for special cable-bending tools and alleviating the risk of damage during the bending process typical of semi-rigid coaxial cable assemblies. |
| SMA Female Bulkhead Connector at One End | Mounts directly on equipment racks eliminating need for bulkhead adapter, thereby improving reliability. |
| Tight Bend Radius, 8 mm | Capable of only 8 mm bend radius, the 141 Hand-Flex Series is able to make connections in tight spaces making these cables ideal for dense system integration. |
| Excellent Return Loss<br>• 34 dB Typ. at 6 GHz<br>• 24 dB Typ. at 18 GHz | The 141 Series Hand-Flex cables are ideally suited for interconnecting a wide variety of RF components while minimizing VSWR ripple contribution due to mating cables & connectors. |
| Good Power Handling Capability:<br>• 546 W at 0.5 GHz<br>• 90 W at 18 GHz | 141 SBSMR+ coaxial cables can support medium to high RF power levels and can be used in the transmit path. (Power rating at sea level.) |
| Built-In Anti-Torque Nut on SMA Male Connector | Mini-Circuits 141 Series Hand-Flex cables include an anti-torque feature to support the straight SMA connector body during installation alleviating risk of stress to the connector/cable interface. |
| Right-Angle SMA Connectors | Avoids multiple right-angle bends and improves reliability. |

## ELECTRICAL SPECIFICATIONS AT +25 °C

| Parameter | Condition (GHz) | Min. | Typ. | Max. | Units |
|---|---|---|---|---|---|
| Frequency Range | | DC | | 18 | GHz |
| Length[1] | | | 6 | | inches |
| Insertion Loss | DC–2 | – | 0.07 | 0.4 | dB |
| | 2–6 | – | 0.16 | 0.6 | |
| | 6–10 | – | 0.23 | 0.8 | |
| | 10–18 | – | 0.28 | 1.1 | |
| Return Loss | DC–2 | 23 | 43 | – | dB |
| | 2–6 | 23 | 34 | – | |
| | 6–10 | 17 | 36 | – | |
| | 10–18 | 17 | 31 | – | |

1. Custom sizes available, consult factory.

## ABSOLUTE MAXIMUM RATINGS[2]

| Parameter | Ratings |
|---|---|
| Operating Temperature | -55 °C to +105 °C |
| Storage Temperature | -55 °C to +105 °C |
| Power Handling at +25 °C, Sea Level | 546 W at 0.5 GHz<br>387 W at 1 GHz<br>273 W at 2 GHz<br>156 W at 6 GHz<br>121 W at 10 GHz<br>90 W at 18 GHz |

2. Permanent damage may occur if any of these limits are exceeded.

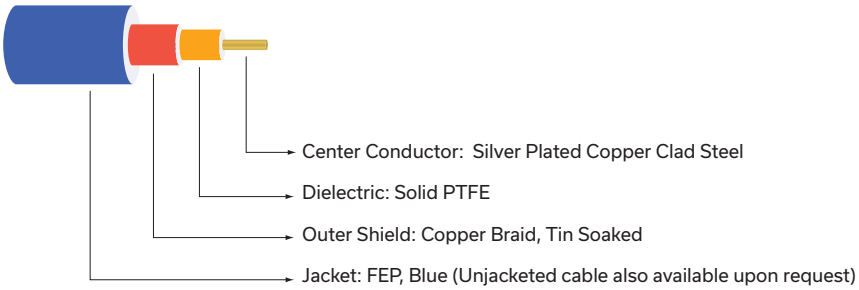
HAND FLEX™

# Coaxial Cable

## 141-6SBSMR+

50Ω 6 inch DC to 18 GHz SMA Female Bulkhead to Right-Angle SMA Male

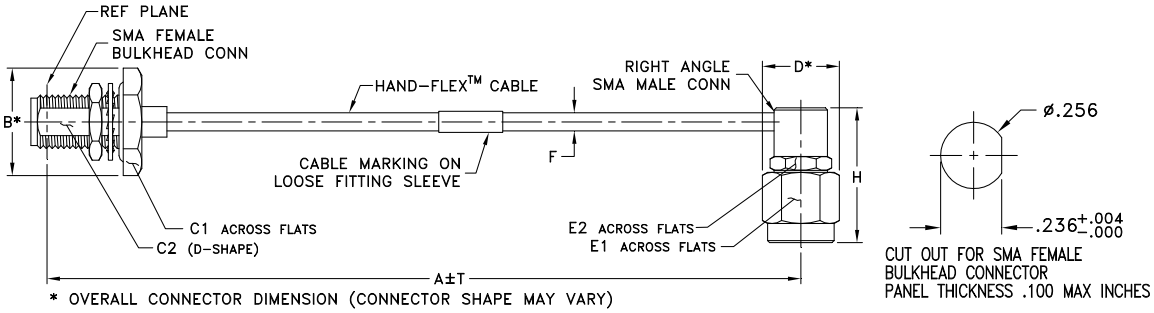
## CABLE CONSTRUCTION




Connectors:
SMA Male Connector: Coupling Nut: Stainless Steel Passivated
Body: Stainless Steel Gold Plated
Center Pin: Silver Plated Copper Clad Steel

SMA Female Bulkhead Connector: Body & Hex Nut: Stainless Steel, Gold Plated
Socket: BeCu, Gold Plated

## OUTLINE DRAWING




## OUTLINE DIMENSIONS (Inch / mm)

| A | B | C1 | C2 | D | E1 | E2 | F | H | T | wt |
|---|---|---|---|---|---|---|---|---|---|---|
| 6.0 | .51 | .438 | .232 | .36 | .313 | .250 | .163±.004 | .728±.02 | 0.05 | grams |
| 152.40 | 12.95 | 11.13 | 5.89 | 9.14 | 7.95 | 6.35 | (4.14±0.10) | 18.50±0.5 | 1.27 | 13.06 |

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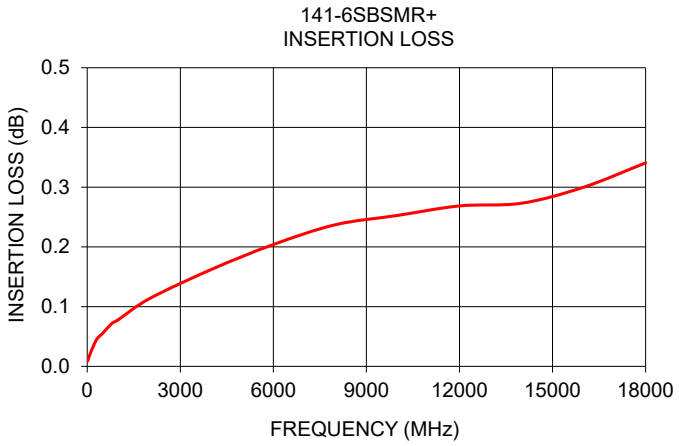
# Coaxial Cable

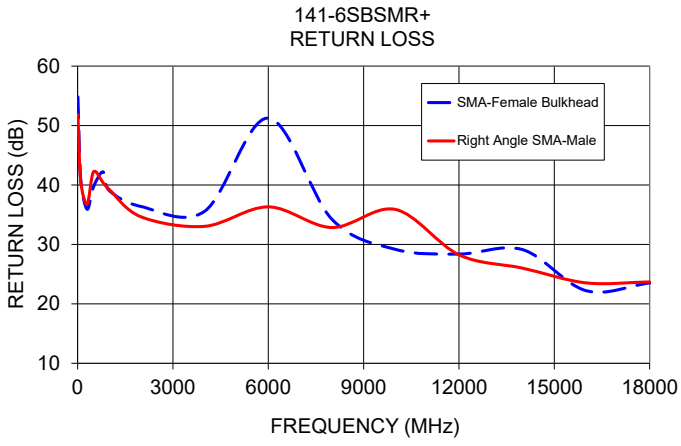
## 141-6SBSMR+

50Ω 6 inch DC to 18 GHz SMA Female Bulkhead to Right-Angle SMA Male

### TYPICAL PERFORMANCE DATA AND CHARTS

| Frequency (MHz) | Insertion Loss (dB) | Return Loss (dB) | |
|---|---|---|---|
| | | SMA Female Bulkhead | Right-Angle SMA Male |
| 10 | 0.01 | 54.83 | 51.87 |
| 100 | 0.02 | 40.82 | 40.60 |
| 300 | 0.04 | 35.91 | 36.74 |
| 500 | 0.06 | 39.67 | 42.21 |
| 800 | 0.07 | 42.20 | 40.40 |
| 1000 | 0.08 | 39.05 | 39.23 |
| 2000 | 0.11 | 36.38 | 34.64 |
| 4000 | 0.16 | 35.59 | 33.05 |
| 6000 | 0.20 | 51.26 | 36.32 |
| 8000 | 0.24 | 34.25 | 32.84 |
| 10000 | 0.25 | 29.17 | 35.89 |
| 12000 | 0.27 | 28.38 | 28.25 |
| 14000 | 0.27 | 29.13 | 26.01 |
| 16000 | 0.30 | 22.22 | 23.53 |
| 18000 | 0.34 | 23.52 | 23.69 |




NOTES

A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
C. The parts covered by this specification document are subject to Mini-Circuits standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the standard terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at www.minicircuits.com/terms/viewterm.html

# Hand-Flex Coaxial Cable 141-6SBSMR+

SMA Female Bulkhead/Right Angle SMA Male

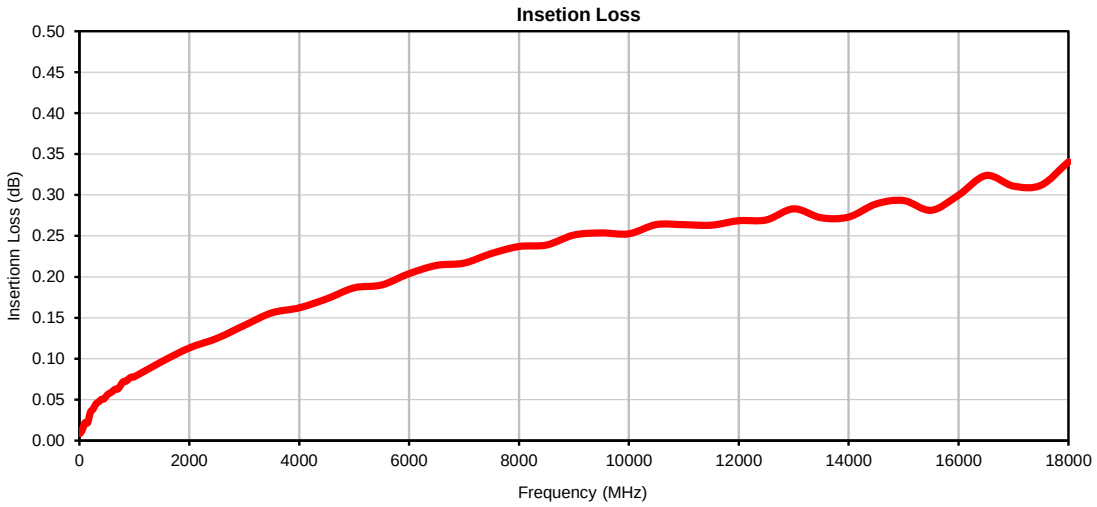
*Typical Performance Data*

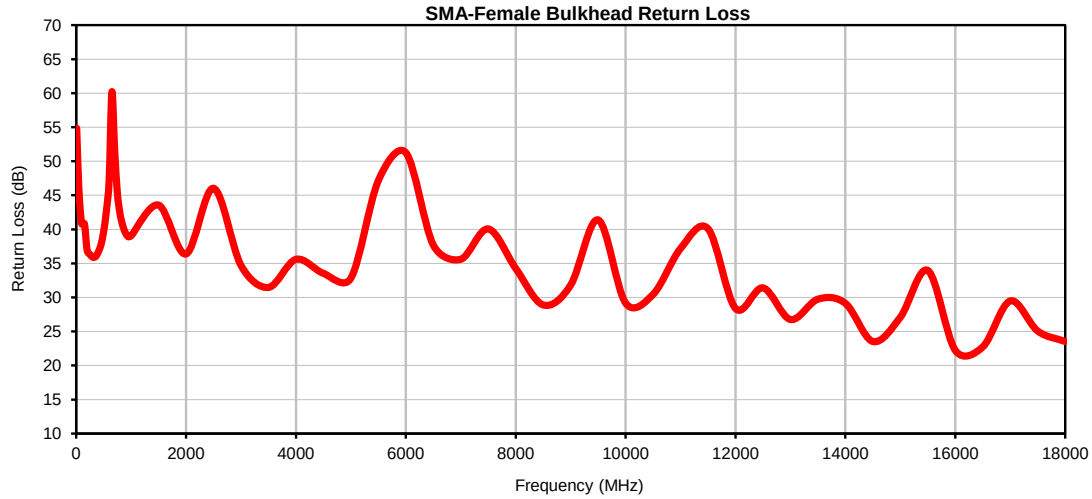
| FREQUENCY (MHz) | INSERTION LOSS (dB) | SMA-FEMALE BULKHEAD RETURN LOSS (dB) | RIGHT ANGLE SMA-MALE RETURN LOSS (dB) |
|---|---|---|---|
| 10 | 0.01 | 54.83 | 51.87 |
| 50 | 0.01 | 45.78 | 44.17 |
| 100 | 0.02 | 40.82 | 40.60 |
| 150 | 0.02 | 40.82 | 40.60 |
| 200 | 0.03 | 36.88 | 37.36 |
| 250 | 0.04 | 36.31 | 36.82 |
| 300 | 0.04 | 35.91 | 36.74 |
| 350 | 0.05 | 35.97 | 37.04 |
| 400 | 0.05 | 36.63 | 38.12 |
| 450 | 0.05 | 37.71 | 39.55 |
| 500 | 0.06 | 39.67 | 42.21 |
| 550 | 0.06 | 42.72 | 45.85 |
| 600 | 0.06 | 47.11 | 51.90 |
| 650 | 0.06 | 60.17 | 51.43 |
| 700 | 0.06 | 51.74 | 46.34 |
| 750 | 0.07 | 45.32 | 42.40 |
| 800 | 0.07 | 42.20 | 40.40 |
| 850 | 0.07 | 40.48 | 39.38 |
| 900 | 0.08 | 39.42 | 38.75 |
| 950 | 0.08 | 38.90 | 38.86 |
| 1000 | 0.08 | 39.05 | 39.23 |
| 1500 | 0.10 | 43.56 | 41.26 |
| 2000 | 0.11 | 36.38 | 34.64 |
| 2500 | 0.12 | 46.04 | 37.94 |
| 3000 | 0.14 | 34.69 | 32.86 |
| 3500 | 0.16 | 31.47 | 29.99 |
| 4000 | 0.16 | 35.59 | 33.05 |
| 4500 | 0.17 | 33.53 | 31.12 |
| 5000 | 0.19 | 32.83 | 29.75 |
| 5500 | 0.19 | 47.17 | 38.61 |
| 6000 | 0.20 | 51.26 | 36.32 |
| 6500 | 0.21 | 37.69 | 32.75 |
| 7000 | 0.22 | 35.61 | 49.70 |
| 7500 | 0.23 | 40.06 | 32.78 |
| 8000 | 0.24 | 34.25 | 32.84 |
| 8500 | 0.24 | 28.89 | 36.69 |
| 9000 | 0.25 | 31.82 | 28.56 |
| 9500 | 0.25 | 41.39 | 32.00 |
| 10000 | 0.25 | 29.17 | 35.89 |
| 10500 | 0.26 | 30.45 | 28.52 |
| 11000 | 0.26 | 37.19 | 28.89 |
| 11500 | 0.26 | 40.08 | 42.05 |
| 12000 | 0.27 | 28.38 | 28.25 |
| 12500 | 0.27 | 31.40 | 26.28 |
| 13000 | 0.28 | 26.75 | 27.14 |
| 13500 | 0.27 | 29.74 | 30.44 |
| 14000 | 0.27 | 29.13 | 26.01 |
| 14500 | 0.29 | 23.52 | 26.70 |
| 15000 | 0.29 | 27.09 | 29.23 |
| 15500 | 0.28 | 33.96 | 42.31 |
| 16000 | 0.30 | 22.22 | 23.53 |
| 16500 | 0.32 | 22.73 | 23.00 |
| 17000 | 0.31 | 29.49 | 30.78 |
| 17500 | 0.31 | 25.06 | 29.79 |
| 18000 | 0.34 | 23.52 | 23.69 |

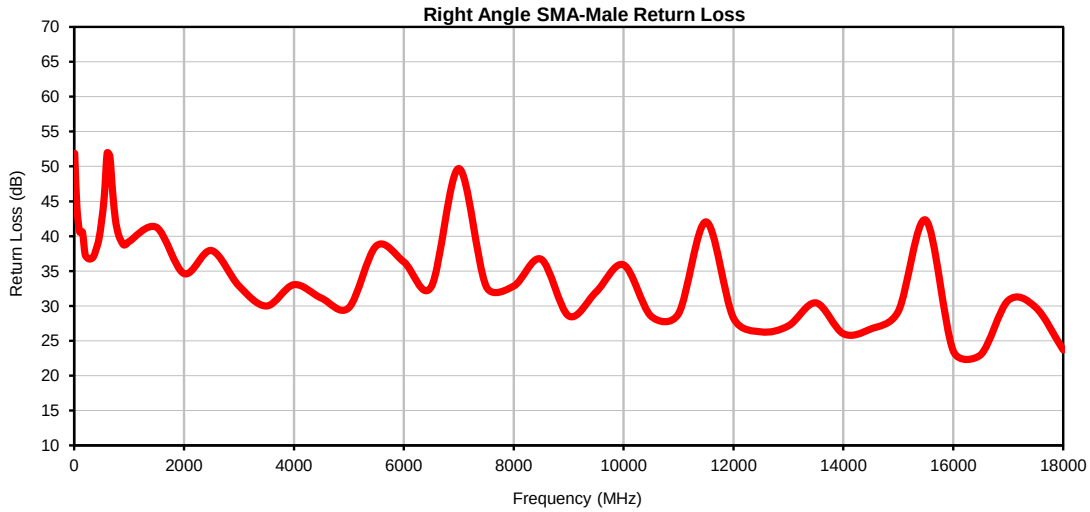
# Hand-Flex Coaxial Cable 141-6SBSMR+

SMA Female Bulkhead/Right Angle SMA Male

*Typical Performance Data*



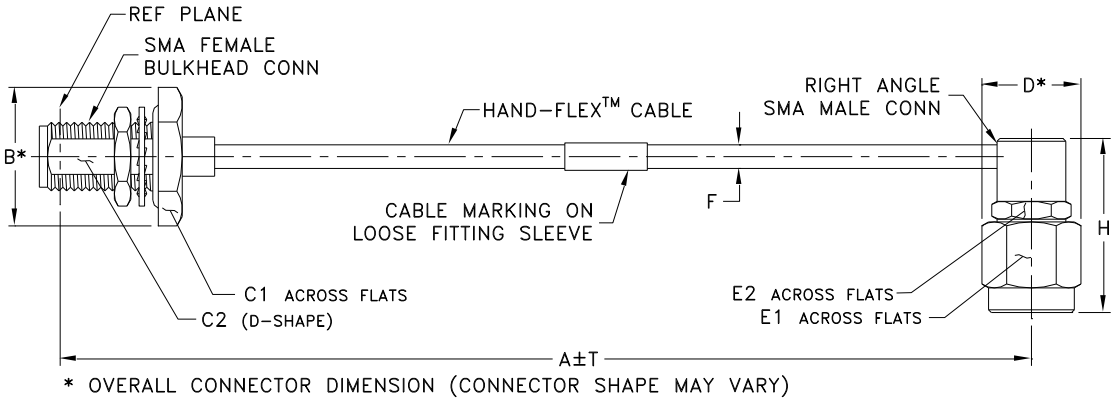



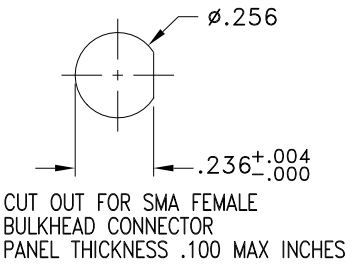



# Case Style KQ

## Outline Dimensions

**KQ1927**




KQ1927 SERIES
BULKHEAD SMA FEMALE(CONN-1)
RIGHT ANGLE SMA MALE (CONN-2)

| CASE STYLE # | A | | B | C1 | C2 | D | E1 | E2 | F | | G | H | T | | WEIGHT GRAMS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | INCH | MM | | | | | | | 141U-ASBSMR+ | 141-ASBSMR+ | | | INCH | MM | |
| KQ1927-6 | 6.00 | 152.40 | .51 (12.95) | .438 (11.13) | .232 (5.89) | .36 (9.14) | .313 (7.95) | .250 (6.35) | .139±.002 (3.53±.05) | .163±NOM (4.14 NOM) | - - | .728±.020 (18.50) | 0.05 | 1.27 | 13.06 |
| KQ1927-36 | 36.00 | 914.40 | | | | | | | | | | | 0.20 | 5.08 | 47.35 |

**Unless otherwise specified dimensions are in inches (mm).**
**Tolerances: 2Pl. ± .03; 3Pl. ± .015**

**Note:**

1. 141 Hand-Flex™ Coaxial Cable.
2. "A" represents length of cable.

Mini-Circuits

**Environmental Specifications** **ENV52**

All Mini-Circuits products are manufactured under exacting quality assurance and control standards, and are capable of meeting published specifications after being subjected to any or all of the following physical and environmental test.

| Specification | Test/Inspection Condition | Reference/Spec |
|---|---|---|
| Operating Temperature | -55° to 105° C or -55° to 85° C (see datasheet)<br>Ambient Environment | Individual Model Data sheet |
| Storage Temperature | -55° to 105° C or -55° to 85° C (see data sheet)<br>Ambient Environment | Individual Model Data Sheet |
| Thermal Shock | -55° to 100°C, 100 Cycles | MIL-STD-202F; Method 107G |
| Multiple Bend Radius | 40 mm, 5 times for 141 series cables<br>30 mm, 5 times for 086 series cables | |
| Single Bend Radius | 8 mm for 141 series cables<br>6 mm for 086 series cables | |