

50Ω DC to 18 GHz



CASE STYLE: KP1573-XX

XX= cable length in inches

The Big Deal

- Single Right-Angle SMA Connector
- DC to 18 GHz
- Tight Bend-Radius
- Ideal for interconnect of assembled systems

Product Overview

086 SMRSM model series coaxial cables are ideal for integrating coaxial components and sub-assemblies in tight spaces and dense system configurations. Single right-angle SMA connection minimizes bend-radius at one connection port and is ideal for layouts with connections between perpendicular aspects. Sturdy, hand-formable cable construction maintains shape after bending with bend-radius as small as 6mm. 086 SMRSM coaxial cables have the advantages of wide frequency range, excellent return loss, and high power handling. Available in lengths from 3" to 24".

Key Features

| Feature | Advantages |
|--|---|
| Hand-Formable | 086 SMRSM flex cables avoid the need for cable-bending tools, alleviating the risk of damage during bending processes typical of semi-rigid cable assemblies. |
| Single Right-Angle SMA Connector | Minimizes bend-radius at connection port saving space. |
| Excellent Return Loss | Typical return loss of 26 dB to 6 GHz and 19 dB to 18 GHz minimizes VSWR ripple contribution. |
| High Power Handling <ul style="list-style-type: none"> • 200W at 0.5 GHz • 35W at 18 GHz | 086 SMRSM coaxial cable 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 | Supports the straight and right-angle SMA connector bodies during installation, preventing stress to the connector/cable interface. |
| Jacketed and Unjacketed options | FEP insulator jacket reduces risk of accidental shorting of DC power lines or active pins during installation and operation. Unjacketed versions also available upon request. |

Notes

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 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.
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Coaxial Cable

50Ω 5 inch DC to 18 GHz

086-5SMRSM+



Generic photo used for illustration purposes only

CASE STYLE: KP1573-5

| Connectors | Model |
|----------------------|-------------|
| Conn1 | Conn2 |
| Right Angle SMA-Male | SMA-Male |
| | 086-5SMRSM+ |

+RoHS Compliant
The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications

Maximum Ratings

| | | |
|-----------------------------------|-----------------|--|
| Operating Temperature | -55°C to 105°C | |
| Storage Temperature | -55°C to 105°C | |
| Power Handling at 25°C, Sea Level | 211W at 0.5 GHz | |
| | 150W at 1 GHz | |
| | 101W at 2 GHz | |
| | 59W at 6 GHz | |
| | 45W at 10 GHz | |
| | 35W at 18 GHz | |

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

Features

- Right-Angle connection capable of DC to 18 GHz
- Low Loss, 0.6 dB at 18 GHz
- Excellent Return Loss, 20 dB at 18 GHz
- Hand formable to almost any custom shape without special bending tools
- 6mm bend radius for tight installations
- Anti-torque nut prevents cable stress during installation
- Insulated outer jacket standard¹
- Connector interface, meets MIL-STD-348
- **Ideal for interconnect of assembled systems**

Applications

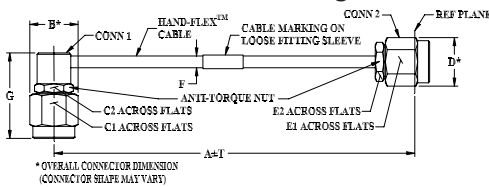
- Replacement for custom bent 0.086" semi-rigid cables
- Communication receivers and transmitters
- Military and aerospace system
- Environmental and test chambers

Electrical Specifications at 25°C

| Parameter | Condition (GHz) | Min. | Typ. | Max. | Unit |
|---------------------------|-----------------|------|------|------|--------|
| Frequency Range | | DC | | 18 | GHz |
| Length² | | | 5 | | inches |
| Insertion Loss | DC - 2 | — | 0.23 | 0.4 | |
| | 2 - 6 | — | 0.31 | 0.6 | dB |
| | 6 - 10 | — | 0.42 | 0.8 | |
| | 10 - 18 | — | 0.57 | 1.1 | |
| Return Loss | DC - 2 | 20 | 33 | — | |
| | 2 - 6 | 20 | 26 | — | dB |
| | 6 - 10 | 16 | 23 | — | |
| | 10 - 18 | 16 | 20 | — | |

1. Unjacketed cable also available upon request.
2. Custom sizes available, consult factory.

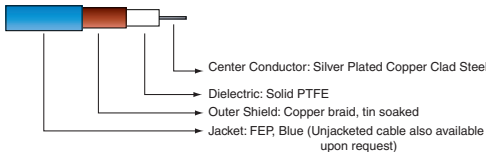
Outline Drawing



Outline Dimensions (inch/mm)

| | | | | | |
|--------|------|------|-------|------|-------|
| A | B | C1 | C2 | D | |
| 5.0 | .36 | .313 | .250 | .36 | |
| 127.00 | 9.14 | 7.95 | 6.35 | 9.14 | |
| E1 | E2 | F | G | T | wt |
| .313 | .250 | .108 | .634 | 0.05 | grams |
| 7.95 | 6.35 | 2.75 | 16.10 | 1.27 | 8.27 |

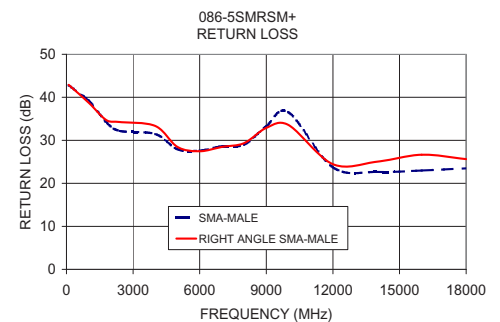
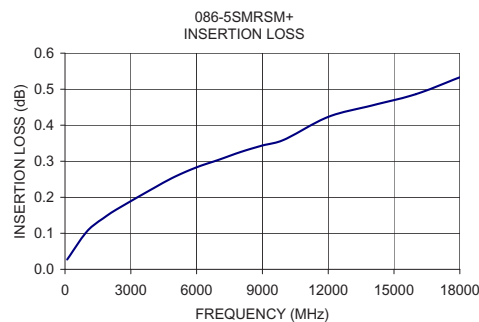
Cable Construction



Connectors: Coupling Nut: Stainless Steel Passivated
Body: Stainless Steel Gold Plated
Center Pin: Brass, Gold Plated

Typical Performance Data

| Frequency (MHz) | Insertion Loss (dB) | Return Loss (dB) | |
|-----------------|---------------------|------------------|----------------------|
| | | SMA-Male | Right Angle SMA-Male |
| 100.0 | 0.03 | 42.8 | 42.9 |
| 1000.0 | 0.11 | 39.2 | 38.7 |
| 1800.0 | 0.14 | 34.2 | 34.7 |
| 2400.0 | 0.17 | 32.2 | 34.3 |
| 4000.0 | 0.22 | 31.5 | 33.3 |
| 5000.0 | 0.26 | 27.9 | 28.5 |
| 6000.0 | 0.28 | 27.6 | 27.5 |
| 7000.0 | 0.30 | 28.6 | 28.5 |
| 8000.0 | 0.33 | 29.0 | 29.3 |
| 9000.0 | 0.34 | 33.3 | 32.9 |
| 10000.0 | 0.36 | 36.5 | 33.6 |
| 12000.0 | 0.42 | 23.7 | 24.4 |
| 14000.0 | 0.45 | 22.7 | 25.0 |
| 16000.0 | 0.49 | 23.0 | 26.7 |
| 18000.0 | 0.53 | 23.5 | 25.6 |



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Proper Cable Connection Using Anti-Torque Nut

Mini-Circuits 086-series HandFlex™ interconnect cables are constructed with an anti-torque nut adjacent to the connector coupling nut. When used properly, this feature prevents possible damage to the cable due to torquing and twisting when tightening the cable connector.

To properly tighten the cable connector:

- 1) The cable connector includes a coupling nut which rotates to fasten the connector, and an anti-torque nut, which is fixed to prevent the cable from twisting during connection.



- 2) To properly tighten the cable, use a standard 1/4-inch open end wrench to brace the anti-torque nut.
- 3) Using a 5/16-inch open end wrench, rotate the coupling nut clockwise to tighten the cable connector.



***NOTE:** Mini-Circuits recommends using a 5/16-inch open end wrench calibrated to 8 inch-pounds maximum torque to prevent damage due to over-torquing the connector.

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