

Flexible Coaxial Cable

FL086 Model Series

50Ω DC to 18 GHz

The Big Deal

- Flexible
- Tight Bend Radius, 6mm
- Excellent Return Loss and Insertion Loss
- Ideal for interconnect of assembled systems



CASE STYLE: SE2635-XX

XX= cable length in inches

Product Overview

The FL086 Series Flexible Coaxial Cables are ideal for interconnection of coaxial components or sub-systems. The construction includes a silver-plated copper-clad steel center conductor. 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. SMA-Male connector have passivated stainless-steel coupling nut over a gold plated body with a gold plated brass center conductor. N-Male connector have brass coupling nut over a Nickel plated body with a gold plated brass center conductor. The FL086 Series Flexible cables are available in variety of length to meet your requirements.

Key Features

| Feature | Advantages |
|--|---|
| Flexible RF Cables | The FL086 Series Flexible cables are 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. |
| Tight Bend Radius: 6mm | Capable of only 6mm bend radius, the FL086 Flexible series is able to make connections in tight spaces making these cables ideal for dense system integration |
| Excellent Return loss <ul style="list-style-type: none">• 29 dB typ. at 6 GHz• 25 dB typ. at 18 GHz | The FL086 Series Flexible 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: <ul style="list-style-type: none">• 57W at 0.5 GHz• 33W at 18 GHz | Mini-Circuits FL086 Cable series can support medium to high RF power levels enabling these cables to be used in the transmit path. NOTE: power rating is at sea-level altitudes. |

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/MCLStore/terms.jsp



Flexible Coaxial Cable

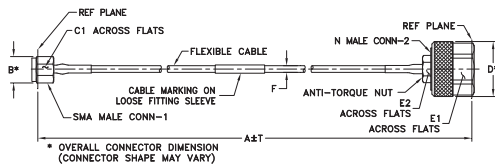
50Ω 24 inch DC to 18 GHz

Maximum Ratings

| | |
|-----------------------------------|-----------------|
| Operating Temperature | -55°C to 105°C |
| Storage Temperature | -55°C to 105°C |
| Power Handling at 25°C, Sea Level | 198W at 0.5 GHz |
| | 140W at 1 GHz |
| | 99W at 2 GHz |
| | 57W at 6 GHz |
| | 45W at 10 GHz |
| | 33W at 18 GHz |

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

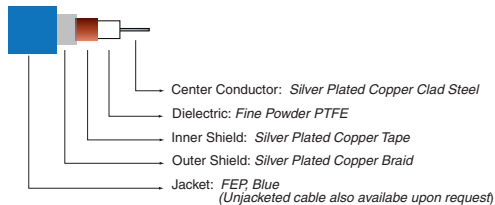
Outline Drawing



Outline Dimensions (inch/mm)

| A | B | C1 | C2 | D | E1 |
|--------|------------|------|-------|-----|-------|
| 24.0 | .36 | .313 | -- | .88 | .750 |
| 609.60 | 9.14 | 7.95 | -- | 22 | 19.05 |
| E2 | F | T | wt | | |
| .375 | 0.106±.004 | 0.15 | grams | | |
| 9.5 | 2.64±0.1 | 3.81 | 48.74 | | |

Cable Construction



SMA-Male Connector:
- Coupling Nut: Stainless Steel Passivated
- Body: Stainless Steel Gold Plated
- Center Pin: Brass, Gold Plated

N-Male Connector:
- Coupling Nut: Brass, Nickel Plated
- Body: Brass, Nickel Plated
- Center Pin: Brass, Gold Plated

Features

- Wideband frequency coverage, DC to 18 GHz
- Low Loss, 1.83 dB typ. at 18 GHz
- Excellent Return Loss, 25 dB typ. at 18 GHz
- Flexible
- 6mm bend radius for tight installations
- Insulated outer jacket standard
- 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 systems
- Environmental and test chambers
- Test accessory

FL086-24SMNM+



CASE STYLE: SE2635-24

Connectors Model
SMA-Male - N-Male FL086-24SMNM+

+RoHS Compliant

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

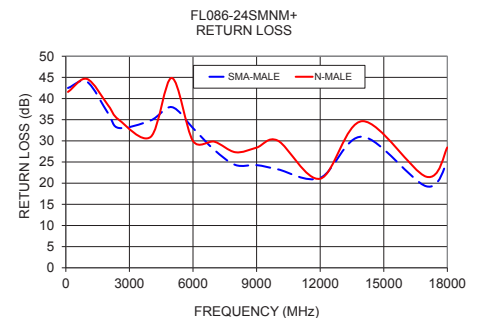
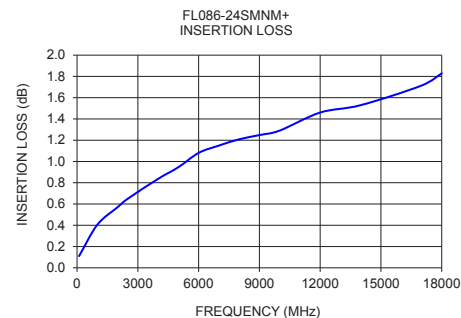
Electrical Specifications at 25°C

| Parameter | Condition (GHz) | Min. | Typ. | Max. | Unit |
|---------------------------|-----------------|------|------|------|--------|
| Frequency Range | | DC | | 18 | GHz |
| Length¹ | | | 24 | | inches |
| Insertion Loss | DC - 2 | — | 0.4 | 0.9 | dB |
| | 2 - 6 | — | 0.7 | 1.6 | |
| | 6 - 10 | — | 1.1 | 2.1 | |
| | 10 - 18 | — | 1.4 | 2.9 | |
| Return Loss | DC - 2 | 23 | 45 | — | dB |
| | 2 - 6 | 23 | 38 | — | |
| | 6 - 10 | 18 | 31 | — | |
| | 10 - 18 | 18 | 26 | — | |

1. Custom sizes available, consult factory.

Typical Performance Data

| Frequency (MHz) | Insertion Loss (dB) | Return Loss (dB) | |
|-----------------|---------------------|------------------|--------|
| | | SMA-Male | N-Male |
| 100 | 0.11 | 42.5 | 41.6 |
| 1000 | 0.41 | 44.0 | 44.6 |
| 2000 | 0.57 | 36.5 | 38.4 |
| 2500 | 0.65 | 33.0 | 35.0 |
| 4000 | 0.84 | 34.8 | 30.9 |
| 5000 | 0.95 | 38.0 | 44.9 |
| 6000 | 1.08 | 33.0 | 30.0 |
| 7000 | 1.15 | 27.9 | 29.8 |
| 8000 | 1.21 | 24.3 | 27.3 |
| 9000 | 1.25 | 24.3 | 28.4 |
| 10000 | 1.29 | 23.3 | 30.1 |
| 12000 | 1.46 | 21.2 | 21.1 |
| 14000 | 1.53 | 31.0 | 34.7 |
| 17000 | 1.71 | 19.3 | 21.5 |
| 18000 | 1.83 | 25.2 | 28.4 |



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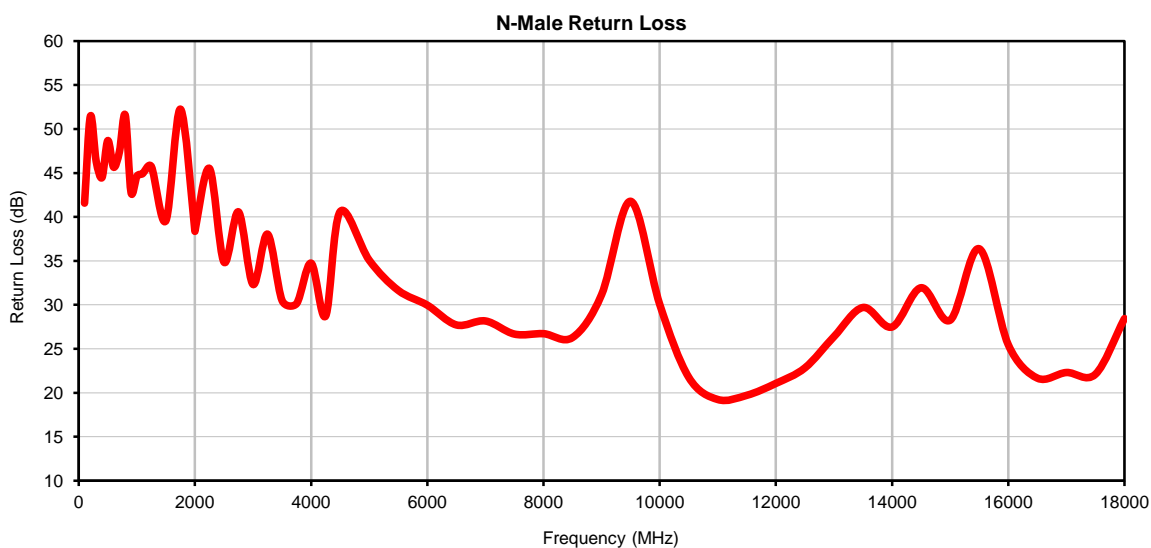
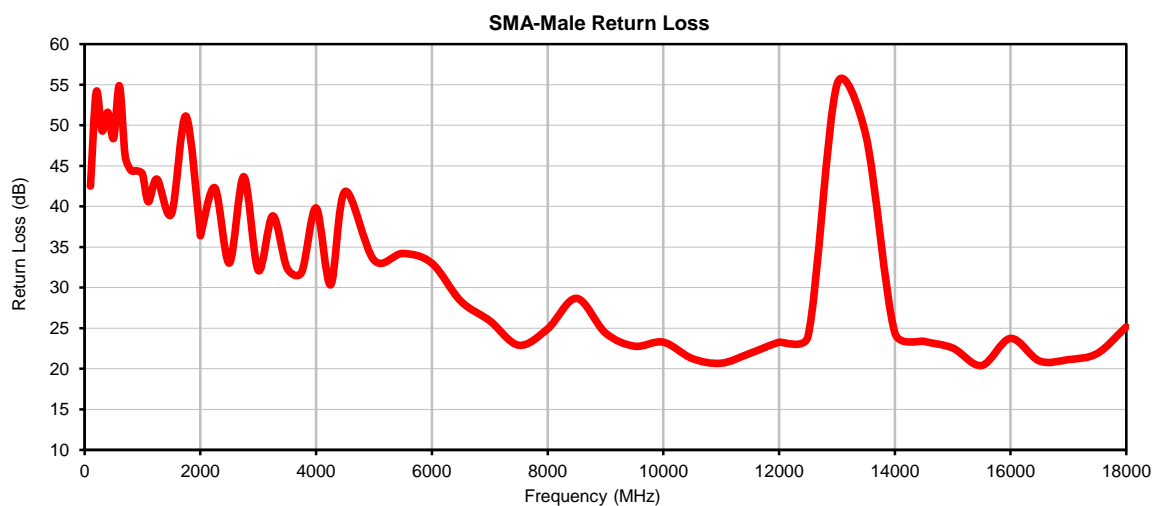
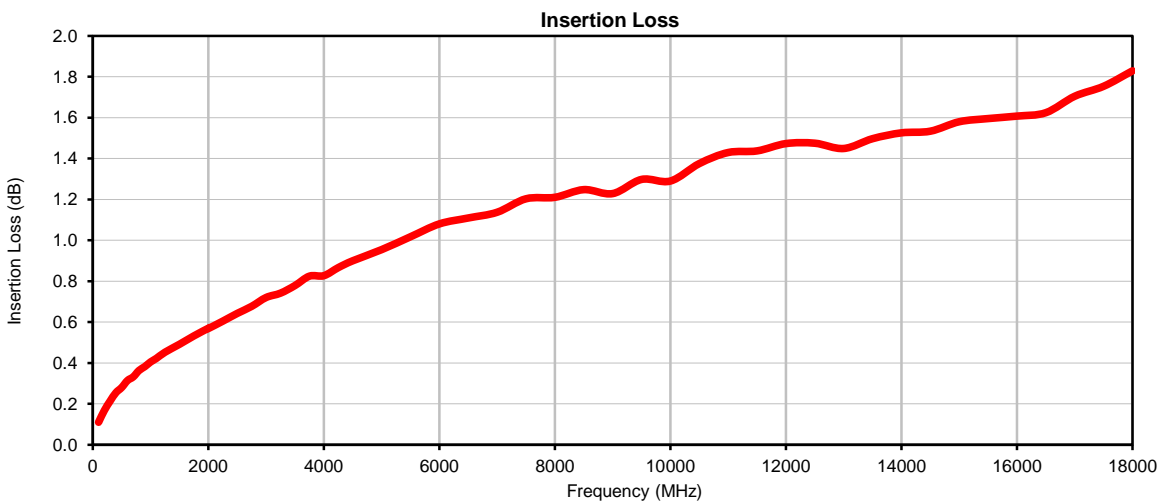
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REV. OR
M167827
FL086-24SMNM+
WP/CP/AM
180509

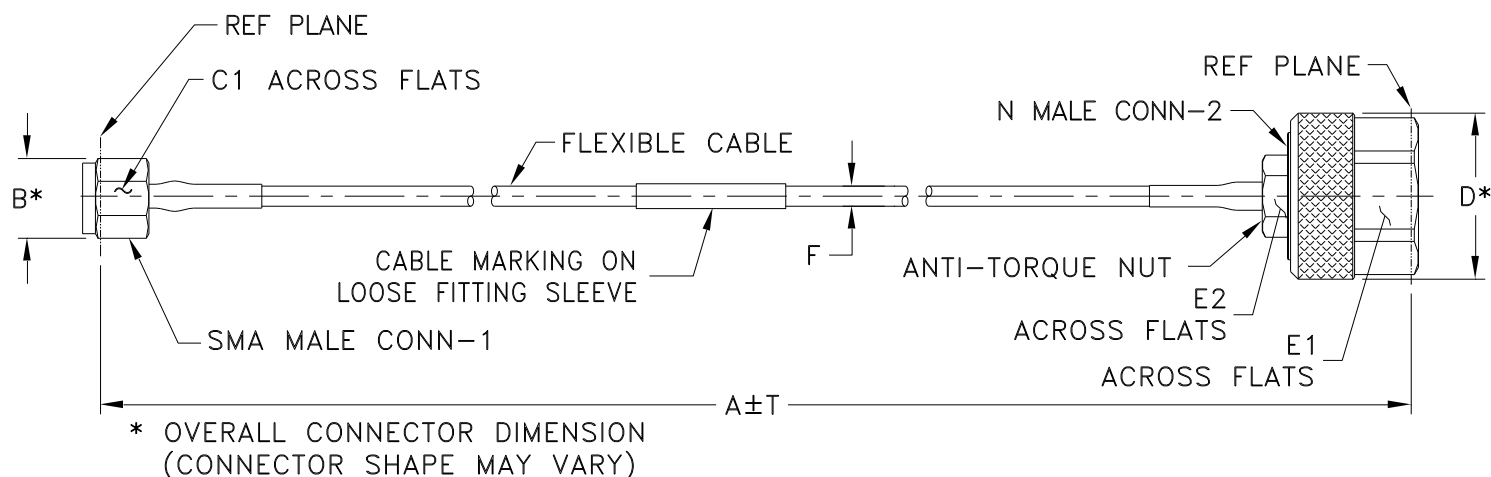
Typical Performance Data

| FREQUENCY (MHz) | INSERTION LOSS (dB) | SMA-MALE RETURN LOSS (dB) | N-MALE RETURN LOSS (dB) |
|--------------------|---------------------------|---------------------------------|-------------------------------|
| 100 | 0.11 | 42.5 | 41.6 |
| 200 | 0.17 | 54.1 | 51.4 |
| 300 | 0.21 | 49.3 | 46.3 |
| 400 | 0.25 | 51.6 | 44.5 |
| 500 | 0.28 | 48.4 | 48.7 |
| 600 | 0.31 | 54.9 | 45.7 |
| 700 | 0.33 | 46.2 | 47.4 |
| 800 | 0.36 | 44.4 | 51.6 |
| 900 | 0.38 | 44.4 | 42.8 |
| 1000 | 0.41 | 44.0 | 44.6 |
| 1100 | 0.42 | 40.6 | 44.9 |
| 1250 | 0.45 | 43.4 | 45.7 |
| 1500 | 0.49 | 39.1 | 39.6 |
| 1750 | 0.53 | 51.1 | 52.3 |
| 2000 | 0.57 | 36.5 | 38.4 |
| 2001 | 0.57 | 36.4 | 38.4 |
| 2250 | 0.60 | 42.3 | 45.5 |
| 2500 | 0.64 | 33.0 | 34.9 |
| 2750 | 0.68 | 43.7 | 40.6 |
| 3000 | 0.72 | 32.1 | 32.3 |
| 3250 | 0.74 | 38.8 | 38.0 |
| 3500 | 0.78 | 32.4 | 30.5 |
| 3750 | 0.82 | 31.9 | 30.1 |
| 4000 | 0.83 | 39.8 | 34.7 |
| 4250 | 0.87 | 30.3 | 28.7 |
| 4500 | 0.90 | 41.8 | 40.6 |
| 5000 | 0.95 | 33.4 | 35.1 |
| 5500 | 1.02 | 34.2 | 31.6 |
| 6000 | 1.08 | 33.0 | 30.0 |
| 6500 | 1.11 | 28.3 | 27.7 |
| 7000 | 1.14 | 25.9 | 28.2 |
| 7500 | 1.20 | 22.9 | 26.7 |
| 8000 | 1.21 | 24.9 | 26.7 |
| 8500 | 1.25 | 28.7 | 26.3 |
| 9000 | 1.23 | 24.4 | 31.2 |
| 9500 | 1.30 | 22.8 | 41.8 |
| 10000 | 1.29 | 23.3 | 30.1 |
| 10500 | 1.38 | 21.3 | 21.8 |
| 11000 | 1.43 | 20.7 | 19.2 |
| 11500 | 1.44 | 21.9 | 19.7 |
| 12000 | 1.47 | 23.3 | 21.1 |
| 12500 | 1.48 | 24.0 | 22.8 |
| 13000 | 1.45 | 55.0 | 26.4 |
| 13500 | 1.50 | 48.8 | 29.7 |
| 14000 | 1.53 | 24.4 | 27.5 |
| 14500 | 1.53 | 23.4 | 31.9 |
| 15000 | 1.58 | 22.6 | 28.3 |
| 15500 | 1.60 | 20.4 | 36.4 |
| 16000 | 1.61 | 23.7 | 25.5 |
| 16500 | 1.62 | 21.0 | 21.7 |
| 17000 | 1.70 | 21.1 | 22.3 |
| 17500 | 1.75 | 21.9 | 22.1 |
| 18000 | 1.83 | 25.2 | 28.4 |

Typical Performance Curves



Outline Dimensions



SE2635 SERIES

SMA MALE (CONN-1)

N MALE (CONN-2)

| CASE STYLE # | A | | B | C1 | C2 | D | E1 | E2 | F | T | | WEIGHT GRAMS |
|-----------------|------|-------|---------------|----------------|--------|---------------|----------------|---------------|-------------------------|------|------|-----------------|
| | INCH | MM | | | | | | | FL086-ASMNM+ | INCH | MM | |
| SE2635-6 | 6 | 152.4 | .36 (9.14) | .313 (7.95) | — — | .88 (22.0) | .750 (19.0) | .375 (9.5) | .106±.004 (2.64±0.1) | 0.05 | 1.27 | 40.01 |
| SE2635-12 | 12 | 304.8 | | | | | | | | 0.10 | 2.54 | 42.92 |
| SE2635-24 | 24 | 609.6 | | | | | | | | 0.15 | 3.81 | 48.74 |

Unless otherwise specified dimensions are in inches (mm).

Tolerances: 2Pl. ± .03; 3Pl. ± .015

Note:

- 086 Flexible Coaxial Cable.
- "A" Represents Length of Cable.



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 Ambient Environment | Individual Model Data Sheet |
| Storage Temperature | -55° to 105°C Ambient Environment | Individual Model Data Sheet |
| Thermal Shock | -55° to 105°C, 25 cycles | MIL-STD-202F: Method 107G |
| Multiple Bend Radius | 40mm, 5 times for FL141 series cables 30 mm, 5 times for FL086 series cables | |
| Single Bend Radius | 10 mm for FL141 series cables 6 mm for FL086 series cables | |