



FLEXIBLE

# Coaxial Cable

**FL086-4KM+**

50Ω 4 inch DC to 40 GHz 2.92mm-Male

## THE BIG DEAL

- Wideband frequency coverage, DC to 40 GHz
- Low Loss, 0.6 dB typ. up to 40 GHz
- Excellent Return Loss, 28 dB up to 40 GHz
- 6mm bend radius for tight installations
- Insulated outer jacket standard
- Connector interface, meets MIL-STD-348
- Ideal for interconnect of assembled systems



Generic photo used for illustration purposes only

|                   |             |
|-------------------|-------------|
| <b>Model No.</b>  | FL086-4KM+  |
| <b>Case Style</b> | SE2929-4    |
| <b>Connectors</b> | 2.92mm-Male |

## APPLICATIONS

- Replacement for custom bent 0.086" semi-rigid cables
- Communication Receivers and Transmitters
- Military and Aerospace Systems
- Environmental and Test Chambers
- Test Accessory

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

## 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. Connectors have brass coupling nut over 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                                                                                                                    | 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"> <li>• 31 dB typ. up to 18 GHz</li> <li>• 28 dB typ. up to 40 GHz</li> </ul> | 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"> <li>• 198W at 0.5 GHz</li> <li>• 13W up to 40 GHz</li> </ul>       | 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.                                                                                    |





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## ELECTRICAL SPECIFICATIONS AT +25°C

| Parameter           | Frequency (GHz) | Min. | Typ. | Max. | Units  |
|---------------------|-----------------|------|------|------|--------|
| Frequency Range     |                 | DC   | —    | 40   | GHz    |
| Length <sup>1</sup> |                 | 4    |      |      | inches |
| Insertion Loss      | DC - 6          | —    | 0.2  | 0.5  | dB     |
|                     | 6 - 18          | —    | 0.3  | 0.9  |        |
|                     | 18 - 26.5       | —    | 0.4  | 1.1  |        |
|                     | 26.5 - 40       | —    | 0.6  | 1.3  |        |
| Return Loss         | DC - 18         | 19   | 31   | —    | dB     |
|                     | 18 - 40         | 17   | 29   | —    |        |

1. Custom sizes available, consult factory.

## ABSOLUTE MAXIMUM RATINGS

| Parameter                         | 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<br>140W at 1 GHz<br>99W at 2 GHz<br>57W at 6 GHz<br>45W at 10 GHz<br>33W at 18 GHz<br>16W at 26.5 GHz<br>13W up to 40 GHz |

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





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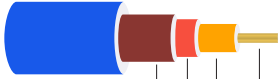
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Mini-Circuits

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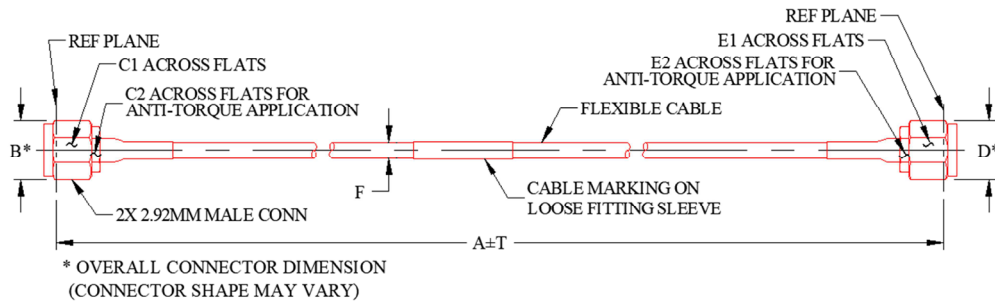
## CABLE CONSTRUCTION



- Center Conductor: Silver Plated Copper Clad Steel
- Dielectric: Fine Powder PTFE
- Inner Shield: Silver Plated Copper Tape
- Outer Shield: Silver Plated Copper Braid
- Jacket: FEP, Blue  
(Unjacketed cable also available upon request)

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

## OUTLINE DRAWING



## OUTLINE DIMENSIONS (Inch/mm)

| A      | B    | C1   | C2 | D    | E1   | E2 | T    | wt    |
|--------|------|------|----|------|------|----|------|-------|
| 4.0    | .36  | .315 | -- | .36  | .315 | -- | 0.05 | grams |
| 101.60 | 9.14 | 8.00 | -- | 9.14 | 8.00 | -- | 1.27 | 8.40  |





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# Coaxial Cable

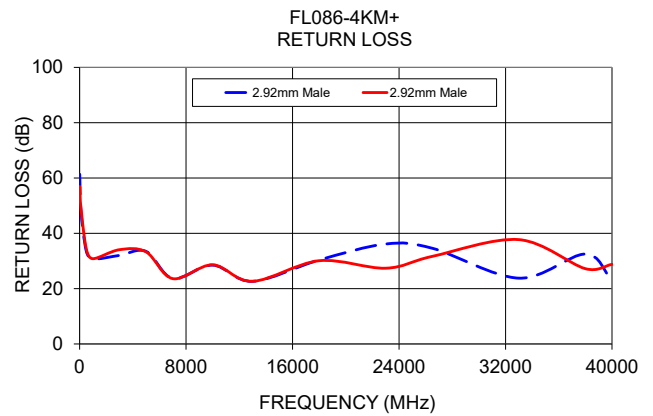
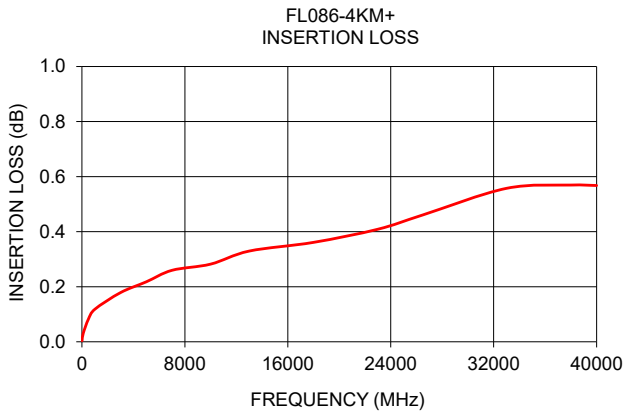
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### TYPICAL PERFORMANCE DATA AND CHARTS

| Frequency (MHz) | Insertion Loss (dB) | Return Loss (dB) |             |
|-----------------|---------------------|------------------|-------------|
|                 |                     | 2.92mm-Male      | 2.92mm-Male |
| 10              | 0.00                | 61.35            | 56.94       |
| 100             | 0.03                | 48.26            | 49.26       |
| 500             | 0.08                | 33.63            | 34.41       |
| 1000            | 0.12                | 30.72            | 30.83       |
| 3000            | 0.18                | 32.03            | 34.09       |
| 5000            | 0.22                | 33.45            | 33.27       |
| 7000            | 0.26                | 23.68            | 23.61       |
| 10000           | 0.28                | 28.50            | 28.62       |
| 13000           | 0.33                | 22.65            | 22.65       |
| 18000           | 0.36                | 30.37            | 30.10       |
| 23000           | 0.41                | 36.15            | 27.39       |
| 26500           | 0.46                | 34.60            | 31.68       |
| 33000           | 0.56                | 23.79            | 37.72       |
| 38000           | 0.57                | 32.50            | 27.21       |
| 40000           | 0.57                | 22.91            | 28.79       |



#### 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](http://www.minicircuits.com/terms/viewterm.html)

