

**KEY FEATURES**

- Wideband frequency coverage DC to 6 GHz
- Hand-formable into almost any custom shape without special bending tools
- 6 mm bend radius for tight installations
- Insulated outer jacket standard

**APPLICATIONS**

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

*Generic photo used for illustration purposes only***PRODUCT OVERVIEW**

The 086 Series Hand-Flex™ Coaxial Cables are ideal for interconnection of coaxial components or subsystems. The construction includes a silver-plated copper steel center conductor which maintains its shape after bending. The outer shield is copper braid, tin-soaked, which minimizes signal leakage while remaining flexible for easy bending. Dielectric is low-loss PTFE. These cables are presently available in lengths of 6, 12, 18 and 24 inches; for custom lengths, please contact the Mini-Circuits Sales Department.

**ELECTRICAL SPECIFICATIONS<sup>1</sup>**

|                                   |                   |
|-----------------------------------|-------------------|
| Operating Frequency (GHz)         | 6                 |
| Impedance (Ω)                     | 50                |
| Velocity of Propagation (%)       | 70                |
| Shielding Effectiveness Min. (dB) | 100               |
| Voltage Withstand Max. (VDC)      | 2000              |
| Return Loss Typ. [VSWR Typ.]      | 32.26 dB [1.05:1] |
| Return Loss Max. [VSWR Typ.]      | 17.69 dB [1.3:1]  |

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

**MECHANICAL & ENVIRONMENTAL SPECIFICATIONS<sup>1</sup>**

|                                              |                   |
|----------------------------------------------|-------------------|
| Operating Case Temperature <sup>2</sup>      | -45 °C to +125 °C |
| Storage Temperature                          | -45 °C to +125 °C |
| Bend Radius: Installation mm [in]            | 6 [0.236]         |
| Bend Radius: Repeated mm [in]                | 30 [1.18]         |
| Cable Weight <sup>3</sup> (g/m) [lbs/1000ft] | 28.87 [19.40]     |

2. Temperature extremes are not intended for continuous normal operation.

3. Total connector weight is 1.8 g per cable.

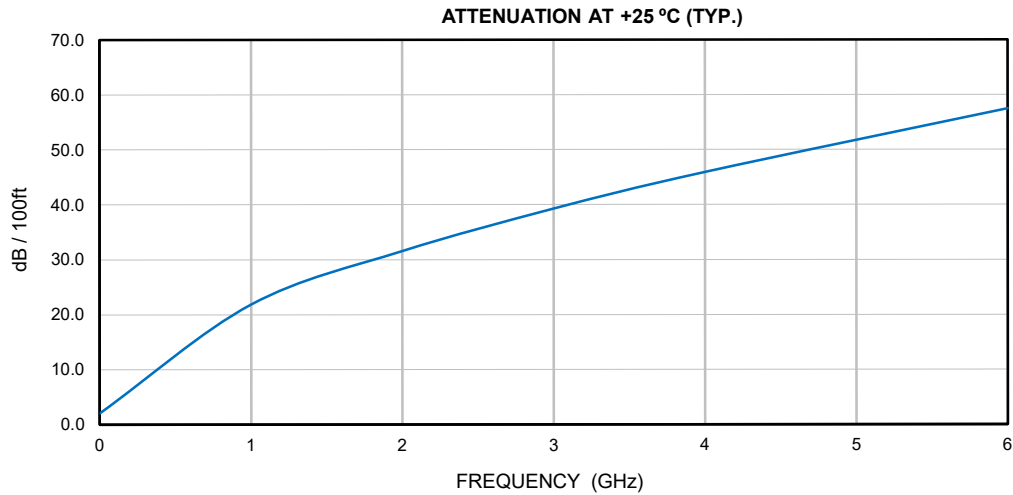


**HAND  
FLEX™**

# Coaxial Cables

**086-XXMCR+ SERIES**

50Ω DC to 6 GHz MCX Right Angle Male to MCX Right Angle Male



**Attenuation (Typical @ +25 °C & VSWR = 1.0) dB**

| Frequency (MHz)    | 1000  | 2000   | 3000   | 4000   | 6000   |
|--------------------|-------|--------|--------|--------|--------|
| <b>dB / 100 m</b>  | 71.68 | 103.51 | 128.77 | 150.65 | 188.51 |
| <b>dB / 100 ft</b> | 21.85 | 31.56  | 39.26  | 45.93  | 57.47  |

$$\text{Calculate Max Attenuation}^4 = [K1 * \sqrt{FMHz} + K2 * FMHz] * 1.1 \text{ dB}$$

|                    |      |         |      |           |
|--------------------|------|---------|------|-----------|
| <b>dB / 100 m</b>  | K1 = | 2.1516  | K2 = | 0.0036417 |
| <b>dB / 100 ft</b> | K1 = | 0.65598 | K2 = | 0.00111   |

4. For cable only, include 0.5 dB loss for connectors

**Max Power (VSWR = 1.0; +25 °C; Sea Level) W**

| Frequency (MHz)       | 1000 | 2000  | 3000  | 4000  | 6000  |
|-----------------------|------|-------|-------|-------|-------|
| <b>Avg. Power (W)</b> | 277  | 195.7 | 160.6 | 138.2 | 112.8 |



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## COAXIAL CONNECTIONS

| Description    | Connector 1 | Connector 2 |
|----------------|-------------|-------------|
| Connector Type | MCX Male    | MCX Male    |
| Orientation    | Right Angle | Right Angle |

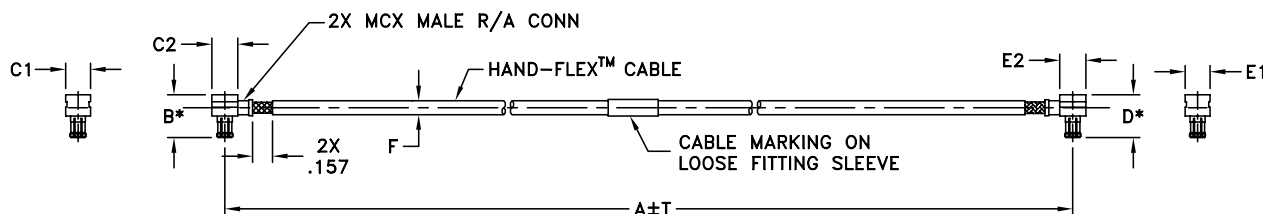
## CABLE CONSTRUCTION



- Center Conductor: Silver-Plated Copper Steel
- Dielectric: Solid PTFE
- Outer Shield: Copper Braid, Tin-Soaked
- Jacket: FEP, Blue (Unjacketed cable also available upon request)

Connectors: Body: Brass, Gold Plated  
Center Pin: Brass, Gold Plated

## CASE STYLE DRAWING



\* OVERALL CONNECTOR DIMENSION  
[CONNECTOR SHAPE MAY VARY]

Dimensions are in inches [mm]

| A    |        | B             | C1            | C2           | D             | E1            | E2           | F                      | T    |       | Wt.<br>grams |
|------|--------|---------------|---------------|--------------|---------------|---------------|--------------|------------------------|------|-------|--------------|
| Inch | mm     |               |               |              |               |               |              |                        | Inch | mm    |              |
| 6    | 15.40  | .335<br>[8.5] | .197<br>[5.0] | .22<br>[5.6] | .335<br>[8.5] | .197<br>[5.0] | .22<br>[5.6] | .108 NOM<br>[2.74 NOM] | ±.05 | ±1.27 | 6.14         |
| 12   | 304.80 |               |               |              |               |               |              |                        | ±.10 | ±2.54 | 8.89         |
| 18   | 457.20 |               |               |              |               |               |              |                        | ±.15 | ±3.81 | 11.63        |
| 24   | 609.60 |               |               |              |               |               |              |                        | ±.15 | ±3.81 | 14.37        |

**PRODUCT MARKING\*:** 086-XXMCR+

\*Marking may contain other features or characters for internal lot control.

**Mini-Circuits**

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ADDITIONAL INFORMATION IS AVAILABLE ON OUR DASHBOARD

[CLICK HERE](#)

|                           |                                              |
|---------------------------|----------------------------------------------|
| Performance Data & Graphs | Data                                         |
|                           | Graphs                                       |
|                           | S-Parameter (S2P Files) Data Set (.zip file) |
| Case Style                | KP3498                                       |
| RoHS Status               | Compliant                                    |
| Environmental Ratings     | ENV157                                       |

#### 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)

