HAND FLEX™

Coaxial Cables

086-XXMCR+ SERIES

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

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



Generic photo used for illustration purposes only

APPLICATIONS

- Replacement for Custom Bent 0.086" Semi-Rigid Cables
- Communication Receivers and Transmitters
- Military and Aerospace Systems
- Environmental Test Chambers

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[1]

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 Max.]	17.69 dB [1.3:1]

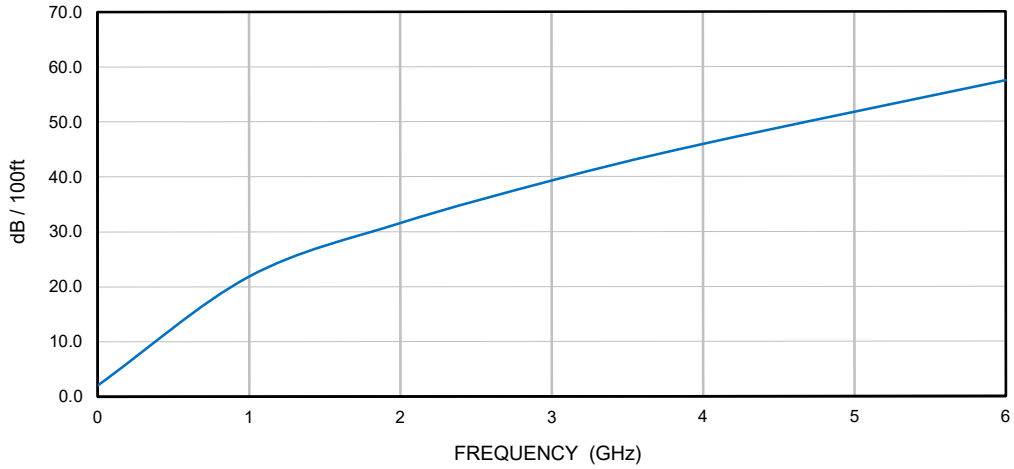
1. Permanent damage may occur if any of these limits are exceeded

MECHANICAL & ENVIRONMENTAL SPECIFICATIONS[1]

Operating Case Temperature[2]	-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[3] (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.

ATTENUATION AT +25 °C (TYP.)



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

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

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

dB / 100 m	K1 =	2.1516	K2 =	0.0036417
dB / 100 ft	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
Avg. Power (W)	277	195.7	160.6	138.2	112.8

HAND FLEX™

Coaxial Cables

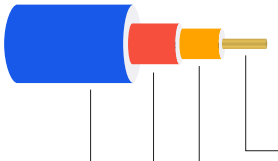
086-XXMCR+ SERIES

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

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

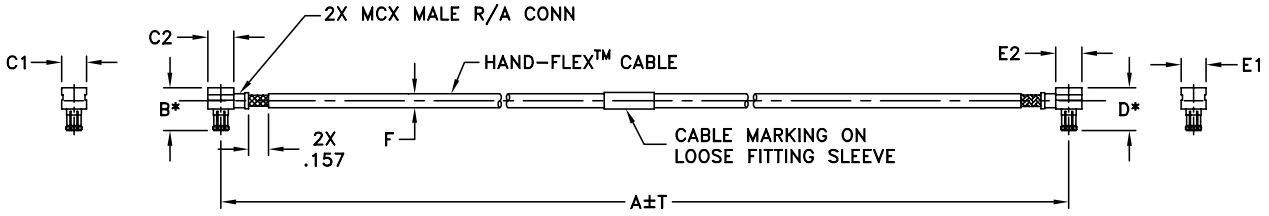
Dielectric: Solid PTFE

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.
Inch	mm								Inch	mm	grams
6	152.40	0.335 [8.5]	0.197 [5.0]	0.22 [5.6]	0.335 [8.5]	0.197 [5.0]	0.22 [5.6]	0.108 NOM [2.74 NOM]	±0.05	±1.27	6.14
12	304.80								±0.10	±2.54	8.89
18	457.20								±0.15	±3.81	11.63
24	609.60								±0.15	±3.81	14.37

PRODUCT MARKING*: 086-XXMCR+

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

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-Circuits' 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

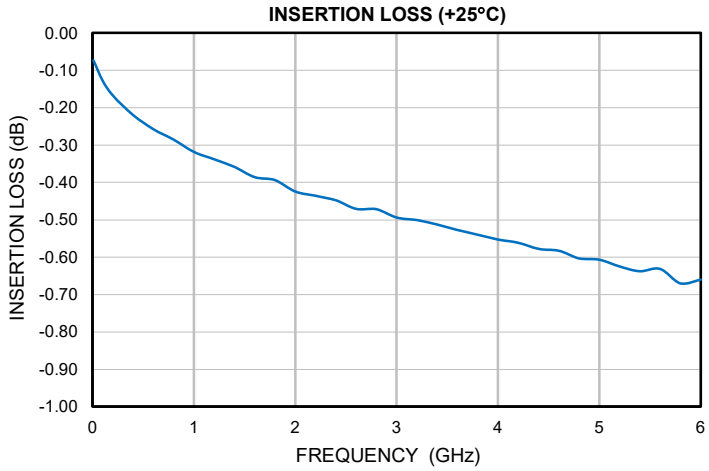
Handflex Cable, MCX RA to MCX RA, 12" 086-12MCR+

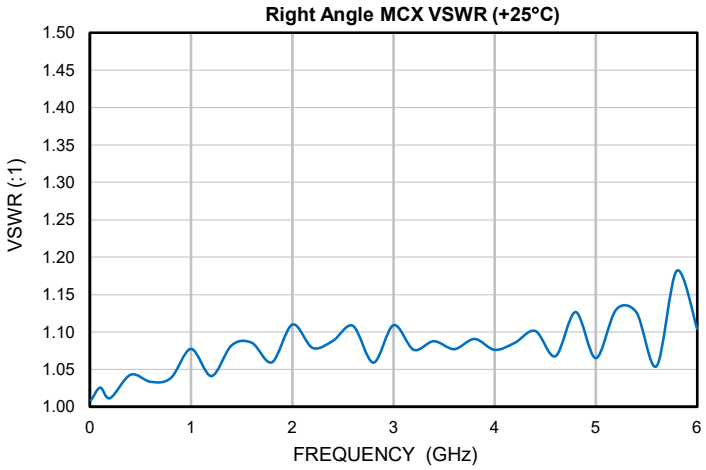
Typical Performance Data

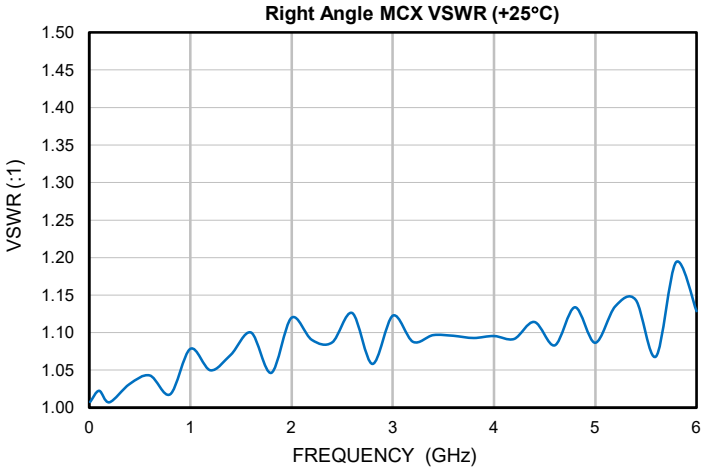
FREQ.	INSERTION LOSS	Right Angle MCX VSWR	Right Angle MCX VSWR
(GHz)	(dB)	(:1)	(:1)
0.01	-0.07	1.01	1.01
0.10	-0.13	1.03	1.03
0.20	-0.17	1.02	1.01
0.40	-0.22	1.05	1.04
0.60	-0.26	1.03	1.03
0.80	-0.29	1.04	1.02
1.00	-0.32	1.07	1.07
1.20	-0.34	1.03	1.04
1.40	-0.36	1.08	1.07
1.60	-0.38	1.08	1.09
1.80	-0.39	1.05	1.04
2.00	-0.42	1.11	1.12
2.20	-0.43	1.06	1.07
2.40	-0.45	1.10	1.09
2.60	-0.47	1.10	1.11
2.80	-0.47	1.07	1.07
3.00	-0.49	1.11	1.12
3.20	-0.50	1.07	1.08
3.40	-0.51	1.11	1.11
3.60	-0.52	1.06	1.08
3.80	-0.54	1.11	1.10
4.00	-0.55	1.08	1.09
4.20	-0.56	1.09	1.09
4.40	-0.58	1.12	1.12
4.60	-0.58	1.06	1.08
4.80	-0.60	1.15	1.15
5.00	-0.61	1.08	1.09
5.20	-0.62	1.13	1.13
5.40	-0.64	1.16	1.17
5.60	-0.63	1.08	1.09
5.80	-0.67	1.20	1.21
6.00	-0.66	1.11	1.14

Handflex Cable, MCX RA to MCX RA, 12" 086-12MCR+

Typical Performance Curves



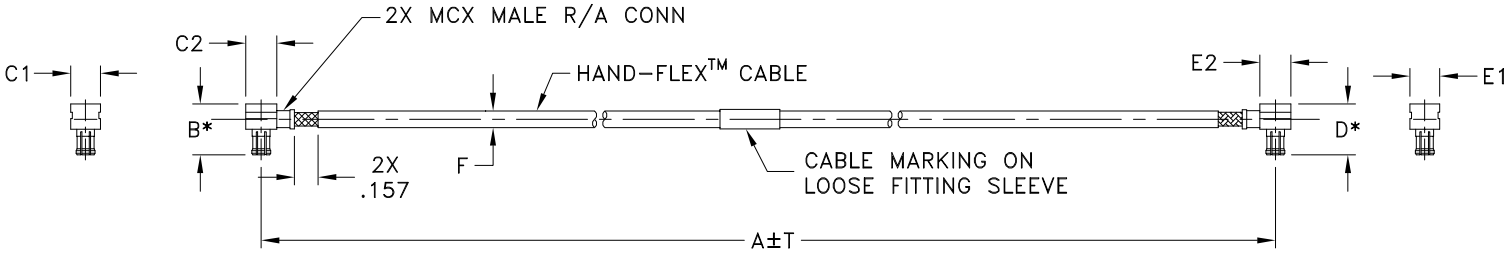




Case Style KP

Outline Dimensions

KP3498



* OVERALL CONNECTOR DIMENSION
[CONNECTOR SHAPE MAY VARY]

Case Style #	A		B	C1	C2	D	E1	E2	F		G	H	T		WT.
	INCH	MM							086U-AMCR+	086-AMCR+			INCH	MM	GRAMS
KP3498-6	6.00	152.40	.335 (8.5)	.197 (5.0)	.22 (5.6)	.335 (8.5)	.197 (5.0)	.22 (5.6)	.089±.002 (2.26±.05)	.108 NOM (2.74 NOM)	– –	– –	.05	1.27	6.14
KP3498-12	12.00	304.80											.10	2.54	8.89
KP3498-16	16.00	406.40											.15	3.81	10.72
KP3498-18	18.00	457.20											.15	3.81	11.63
KP3498-19	19.00	482.60											.15	3.81	12.09
KP3498-22	22.00	558.80											.15	3.81	13.46
KP3498-24	24.00	609.60											.15	3.81	14.37

Unless Otherwise Specified dimensions are in inches [mm],
Tolerances: 2 Pl.±0.03; 3 Pl. ±0.015 inches

Notes:
1. 086 Hand-Flex™ Coaxial Cable.
2. "A" Represents Length of Cable.

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RF/IF MICROWAVE COMPONENTS

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Environmental Specifications **ENV157**

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	-45° C to 125° C Ambient Environment	Individual Model Data Sheet
Storage Temperature	-45° C to 125° C Ambient Environment	Individual Model Data Sheet
Thermal Shock	-55° to 125°C, 100 Cycles	MIL-STD-202, Method 107G
Multiple Bend Radius	40 mm, 5 times for 141 series cables 30 mm, 5 times for 086 series cables	
Single Bend Radius	8 mm for 141 series cables 6 mm for 086 series cables	
Connector Durability	500 mating/unmating cycles	MIL-PRF-39012E, PARAGRAPH 4.6.12

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