HAND FLEX™

Coaxial Cable

086SMRC Model Series

50Ω DC to 18 GHz

CASE STYLE: KP1802-XX

XX= cable length in inches

The Big Deal

- Hand Formable
- Tight Bend Radius
- Right Angle SMA Connectors, 180° rotated
- Ideal for interconnect of assembled systems

Product Overview

The 086 Series Hand-Flex Coaxial Cables are ideal for interconnection of coaxial components or sub-systems. The construction includes a silver-plated copper-clad steel center conductor which maintains the shape after bending. 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 passivated stainless-steel coupling nut over a gold plated connector body and gold plated, brass center conductor.

Key Features

Feature	Advantages
Hand-Formable RF Cables	The 086 Series Hand-Flex cables are hand formable making them 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 086 Hand Flex series is able to make connections in tight spaces making these cables ideal for dense system integration
Excellent Return loss	Supporting typical return loss of 33 dB to 6 GHz and 21 dB to 18 GHz, the 086 Series Hand-Flex 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: • 211W at 0.5 GHz • 35W at 18 GHz	Mini-Circuits 086 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.
Built in Anti-torque nut	Mini-Circuits 086 Series Hand Flex cables include an anti-torque feature to support the connector body during installation alleviating risk of stress to the connector/cable interface.
Right angle SMA connectors	Avoids multiple right angle bends and improves reliability.

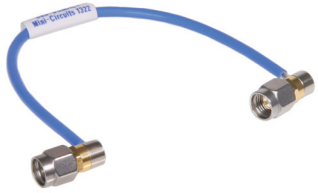
Notes
A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's 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

HAND FLEX™

Coaxial Cable

086-9SMRC+

50Ω 9 inch DC to 18 GHz



CASE STYLE: KP1802-9

Connectors	Model
Right Angle SMA-Male	086-9SMRC+

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 104W 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

- Wideband frequency coverage, DC to 18 GHz
- Low Loss, 1.0 dB at 18 GHz
- Excellent Return Loss, 24 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 standard[1]
- Connector interface, meets MIL-STD-348
- **Ideal for interconnect of assembled systems**

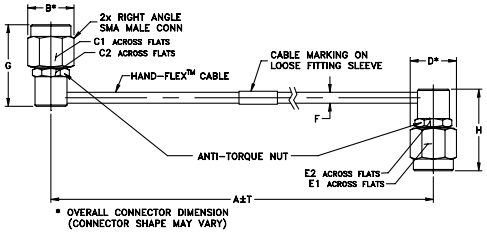
+RoHS Compliant

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

Applications

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

Outline Drawing

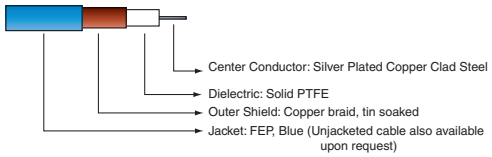


Outline Dimensions (inch / mm)

A	B	C1	C2	D	E1
9.0	.36	.313	.250	.36	.313
228.60	9.14	7.95	6.35	9.14	7.95

E2	F	G	H	T	wt
.250	.108	0.634	0.634	0.1	grams
6.35	2.75	16.10	16.10	2.54	10.91

Cable Construction



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

Electrical Specifications at 25°C

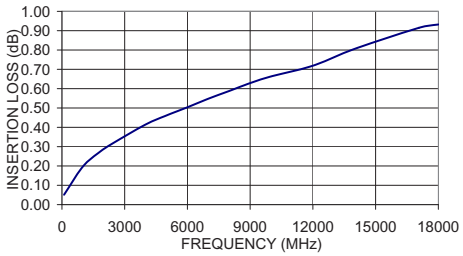
Parameter	Condition (GHz)	Min.	Typ.	Max.	Unit
Frequency Range		DC		18	GHz
Length[1]			9		inches
Insertion Loss	DC - 2	—	0.29	0.48	dB
	2 - 6	—	0.50	0.85	
	6 - 10	—	0.66	1.13	
	10 - 18	—	1.00	1.55	
Return Loss	DC - 2	23	38	—	dB
	2 - 6	23	30	—	
	6 - 10	17	26	—	
	10 - 18	16	18	—	

1. Custom sizes available, consult factory.

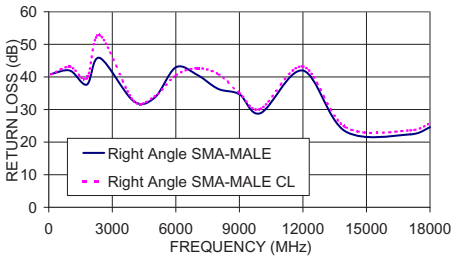
Typical Performance Data

Frequency (MHz)	Insertion Loss (dB)	Return Loss (dB)	
		Right Angle SMA-Male	Right Angle SMA-Male
100	0.05	40.9	40.7
1000	0.20	41.9	43.1
1800	0.27	37.6	39.6
2404	0.32	45.8	52.8
4001	0.41	32.6	32.7
5000	0.46	33.6	34.0
6000	0.50	42.9	40.5
7001	0.55	40.7	42.7
8001	0.59	36.3	40.9
9000	0.63	34.7	35.1
10000	0.66	28.9	30.2
12001	0.72	42.0	43.2
14001	0.81	23.3	24.6
17069	0.91	22.4	23.6
18000	0.93	24.6	25.7

086-9SMRC+
INSERTION LOSS



086-9SMRC+
RETURN LOSS



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

Hand-Flex Coaxial Cable 086-9SMRC+

Right Angle SMA-Male to Right Angle SMA-Male

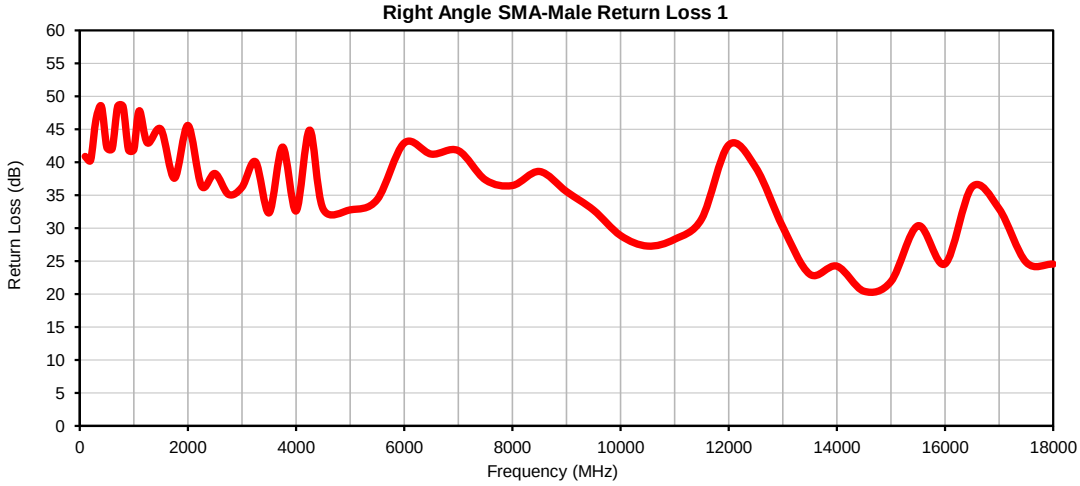
Typical Performance Data

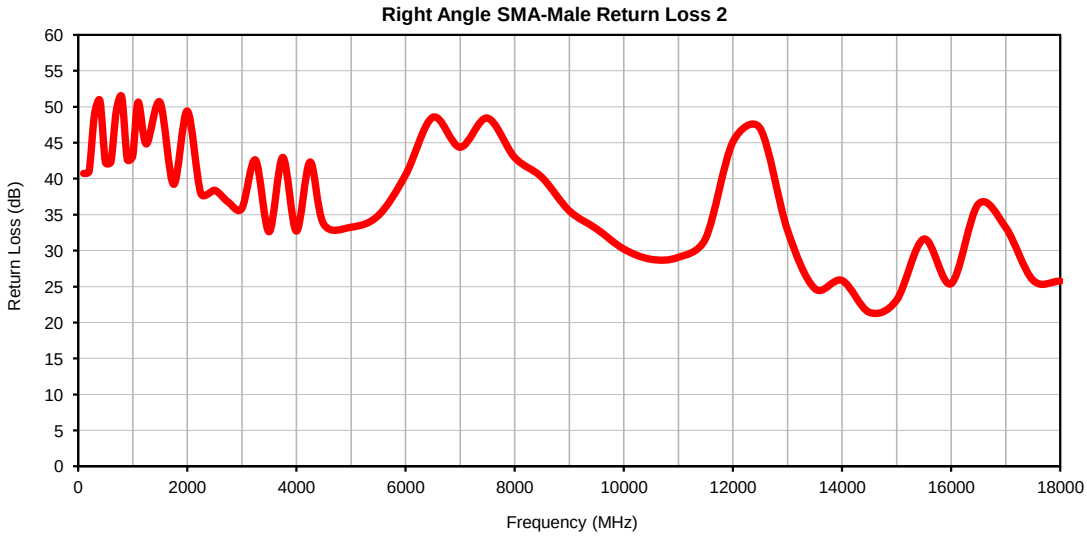
FREQUENCY (MHz)	INSERTION LOSS (dB)	RIGHT ANGLE SMA-MALE 1 RETURN LOSS (dB)	RIGHT ANGLE SMA-MALE 2 RETURN LOSS (dB)
100.0	0.05	40.9	40.7
200.0	0.08	40.3	41.0
300.0	0.10	46.5	49.0
400.0	0.12	48.5	50.8
500.0	0.14	42.3	42.3
600.0	0.15	42.1	42.3
700.0	0.16	48.5	49.5
800.0	0.17	48.5	51.4
900.0	0.19	41.9	42.7
1000.0	0.20	41.9	43.1
1100.0	0.21	47.8	50.6
1250.0	0.22	42.9	44.8
1500.0	0.24	45.0	50.6
1750.0	0.27	37.6	39.2
2000.0	0.29	45.6	49.4
2250.0	0.31	36.4	37.9
2500.0	0.32	38.3	38.4
2750.0	0.34	35.1	36.7
3000.0	0.35	36.2	35.8
3250.0	0.37	40.1	42.6
3500.0	0.39	32.3	32.6
3750.0	0.40	42.3	43.0
4000.0	0.41	32.6	32.7
4250.0	0.42	44.9	42.3
4500.0	0.44	32.9	33.7
5000.0	0.46	32.8	33.2
5500.0	0.48	34.4	34.9
6000.0	0.50	42.9	40.5
6500.0	0.53	41.3	48.5
7000.0	0.55	41.8	44.4
7500.0	0.57	37.3	48.4
8000.0	0.59	36.5	42.9
8500.0	0.61	38.6	40.2
9000.0	0.63	35.6	35.5
9500.0	0.65	32.8	33.0
10000.0	0.66	28.9	30.2
10500.0	0.69	27.3	28.8
11000.0	0.70	28.3	29.0
11500.0	0.71	31.4	31.7
12000.0	0.72	42.6	45.1
12500.0	0.73	39.2	47.0
13000.0	0.75	30.2	32.9
13500.0	0.79	23.0	24.7
14000.0	0.80	24.2	25.8
14500.0	0.84	20.4	21.4
15000.0	0.84	21.9	23.1
15500.0	0.84	30.4	31.6
16000.0	0.87	24.6	25.4
16500.0	0.87	36.3	36.5
17000.0	0.88	32.9	33.2
17500.0	0.93	24.8	25.9
18000.0	0.93	24.6	25.7

Hand-Flex Coaxial Cable 086-9SMRC+

Right Angle SMA-Male to Right Angle SMA-Male

Typical Performance Curves

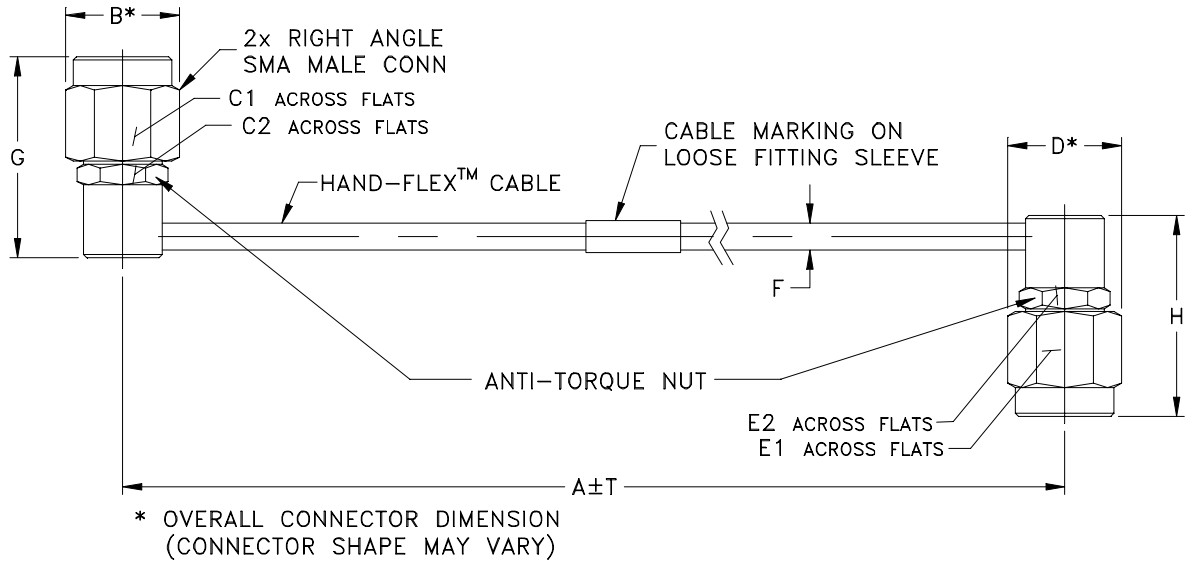




Case Style KP

KP1802

Outline Dimensions



KP1802 SERIES
RIGHT ANGLE SMA MALE (CONN-1)
RIGHT ANGLE SMA MALE (CONN-2)

CASE STYLE #	A		B	C1	C2	D	E1	E2	F		G	H	T		WEIGHT GRAMS
	INCH	MM							086U-ASMRC+	086-ASMRC+			INCH	MM	
KP1802-2	2.00	50.80	.36 (9.14)	.313 (7.95)	.250 (6.35)	.36 (9.14)	.313 (7.95)	.250 (6.35)	.089±.002 (2.26±.05)	.108 NOM (2.74 NOM)	.634 (16.10)	.634 (16.10)	.05	1.27	8.17
KP1802-3	3.00	76.20											.05	1.27	8.63
KP1802-6	6.00	152.40											.05	1.27	9.54
KP1802-9	9.00	228.60											.10	2.54	10.91
KP1802-12	12.00	304.80											.10	2.54	12.28

Unless otherwise specified dimensions are in inches (mm).
Tolerances: 2Pl. ± .03; 3Pl. ± .015

Note:

1. 086 Hand-Flex™ Coaxial Cable.
2. "A" represents length of cable.

Mini-Circuits®
INTERNET http://www.minicircuits.com
P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661
Distribution Centers NORTH AMERICA 800-654-7949 • 417-335-5935 • Fax 417-335-5945 • EUROPE 44-1252-832600 • Fax 44-1252-837010
Mini-Circuits ISO 9001 & ISO 14001 Certified

This document and its contents are the property of Mini-Circuits.

Mini-Circuits

Environmental Specifications **ENV52**

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 or -55° to 85° C (see datasheet) Ambient Environment	Individual Model Data sheet
Storage Temperature	-55° to 105° C or -55° to 85° C (see data sheet) Ambient Environment	Individual Model Data Sheet
Thermal Shock	-55° to 100°C, 100 Cycles	MIL-STD-202F; 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	

This document and its contents are the property of Mini-Circuits.