

# Flexible Coaxial Cable

## FL86 Model Series

50Ω DC to 40 GHz

### The Big Deal

- Flexible
- Tight Bend Radius, 6mm static bend, 20mm dynamic
- Excellent Return Loss and Insertion Loss
- Ideal for interconnect of assembled systems



CASE STYLE: SE3058-XX

XX= cable length in inches

### Product Overview

The FL86 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 passivated stainless-steel coupling nut over a gold plated connector body with gold plated brass center conductor. The FL86 Series Flexible cables are available in variety of length to meet your requirements.

### Key Features

Feature	Advantages
Flexible RF Cables	The FL86 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 Static Bend, 20mm Dynamic	Capable of bend radius, 6mm static bend, 20mm dynamic, the FL86 Flexible series is able to make connections in tight spaces making these cables ideal for dense system integration
Excellent Return loss • 28 dB typ. at 18 GHz • 21 dB typ. to 40 GHz	The FL86 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: • 12 W at 40 GHz	Mini-Circuits FL86 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](http://www.minicircuits.com/MCLStore/terms.jsp)



# Flexible Coaxial Cable

50Ω 12 inch DC to 40 GHz

## FL86-12KMVM+



Generic photo used for illustration purposes only

CASE STYLE: SE3058-12

Connectors	Model
2.92mm (M)-2.4mm(M)	FL86-12KMVM+

### +RoHS Compliant

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

### Maximum Ratings

Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
Power Handling at 25°C, Sea Level	198 W at 0.5 GHz
	99 W at 2 GHz
	57 W at 6 GHz
	44 W at 10 GHz
	33 W at 18 GHz
	15 W at 26.5 GHz
	13 W at 33 GHz
	12 W at 40 GHz

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

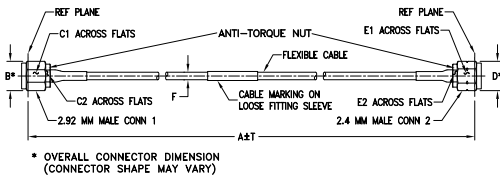
### Features

- Wideband frequency coverage, DC to 40 GHz
- Low Loss, 1.6 dB typ. at 40 GHz
- Excellent Return Loss, 21 dB typ. to 40 GHz
- Flexible
- 6 mm bend radius for tight installations, 6 mm static bend, 20 mm dynamic bend
- Insulated outer jacket standard
- Connector interface, meets MIL-STD-348
- **Ideal for interconnect of assembled systems**

### Applications

- Communication receivers and transmitters
- Military and aerospace systems
- Environmental and test chambers
- Test accessory

### Outline Drawing



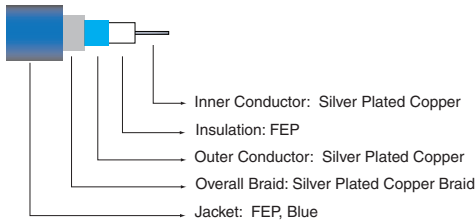
### Outline Dimensions (inch/mm)

A	B	C1	C2	D	E1
12.0	.36	.315	.256	.36	.315
304.80	9.14	8.00	6.50	9.14	8.00

E2	F	T	wt
.256	0.106±.004	0.1	grams
6.50	2.64±0.1	2.54	12.10

### Cable Construction



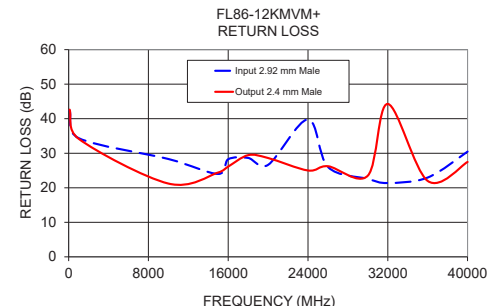
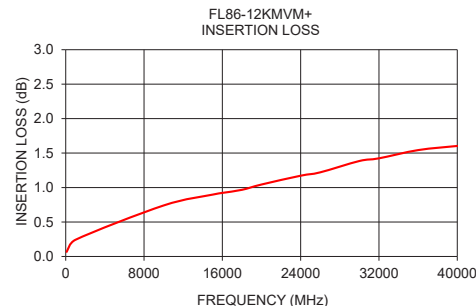
### Electrical Specifications at 25°C

Parameter	Condition (GHz)	Min.	Typ.	Max.	Unit
Frequency Range		DC		40	GHz
Length <sup>1</sup>			12		inches
Insertion Loss	DC - 6	—	0.37	0.85	dB
	2 - 18	—	0.79	1.56	
	18 - 26.5	—	1.12	1.96	
	26.5 - 40	—	1.46	2.49	
Return Loss	DC - 18	17.7	30.4	—	dB
	18 - 40	15.5	27.3	—	

1. Custom sizes available, consult factory.

### Typical Performance Data

Frequency (MHz)	Insertion Loss (dB)	Return Loss (dB)	
		Input 2.92mm-Male	Output 2.4mm-Male
100	0.07	42.38	42.63
1000	0.24	34.38	34.20
10000	0.74	28.33	21.22
15000	0.90	24.01	24.43
16000	0.92	28.27	26.14
18000	0.97	28.64	29.44
20000	1.04	26.64	28.62
24000	1.17	39.78	25.01
26000	1.22	26.02	26.24
30000	1.38	22.57	23.52
32000	1.42	21.38	44.27
36000	1.54	22.96	21.98
40000	1.60	30.47	27.47



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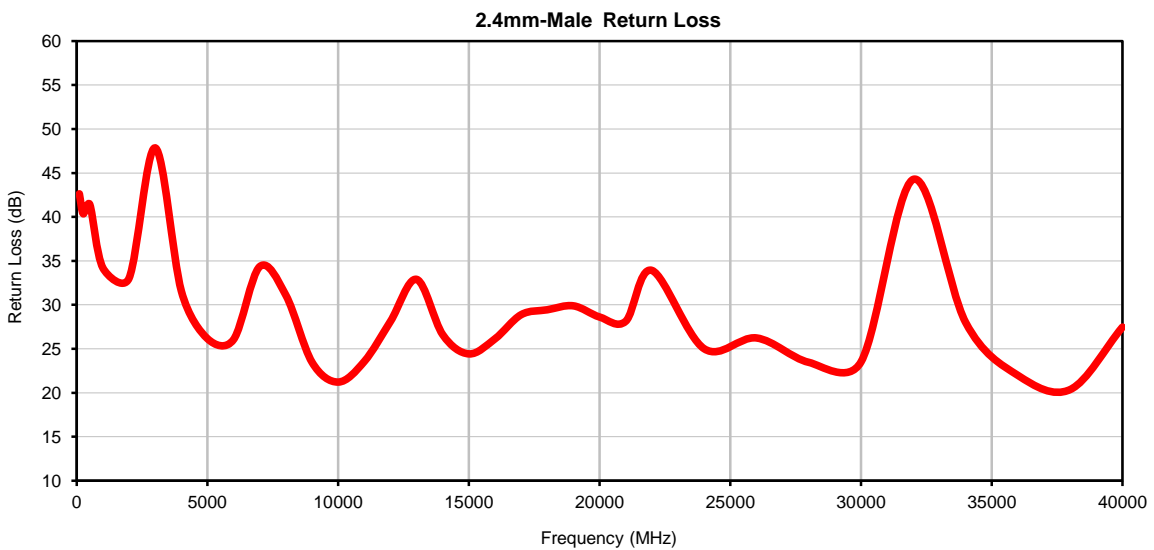
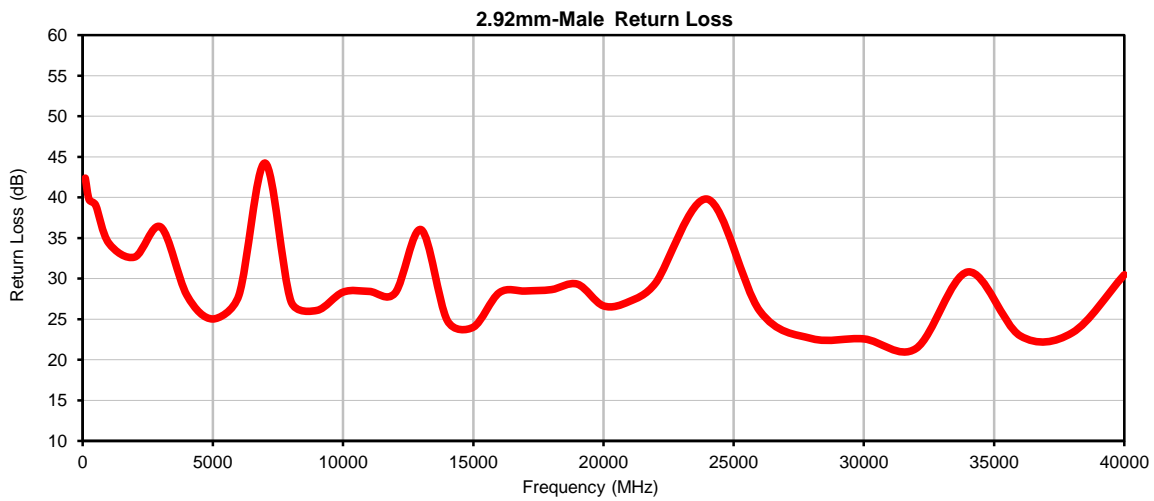
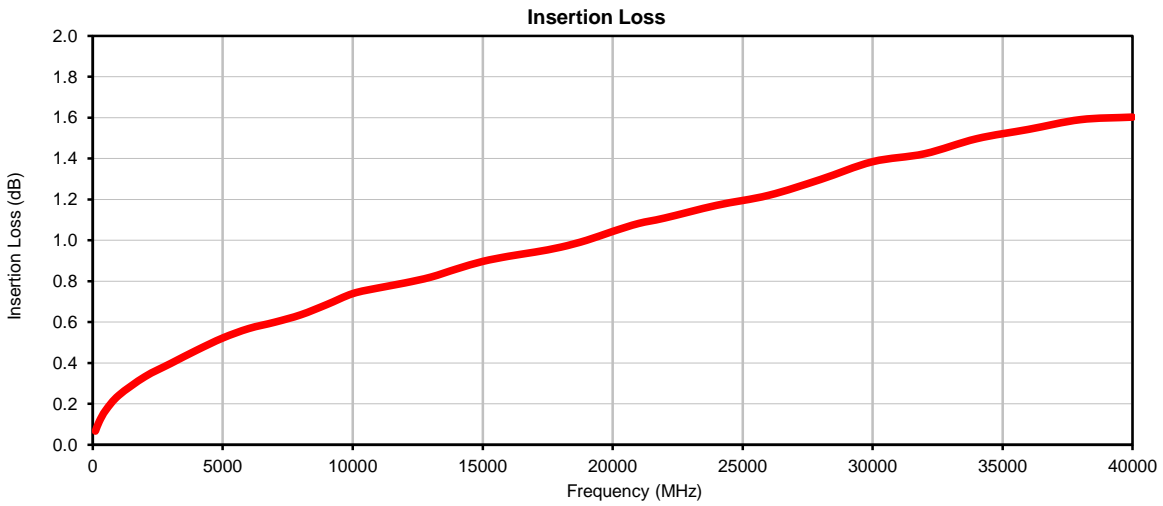
# Flexible Coaxial Cable, 2.92mm-M/2.4mm-M FL86-12KMVM+

## Typical Performance Data

FREQUENCY (MHz)	INSERTION LOSS (dB)	2.92mm-MALE RETURN LOSS (dB)	2.4mm-MALE RETURN LOSS (dB)
100	0.07	42.38	42.63
250	0.11	39.71	40.35
500	0.17	39.04	41.40
1000	0.24	34.38	34.20
2000	0.33	32.66	33.03
3000	0.40	36.35	47.85
4000	0.46	27.96	31.58
5000	0.52	25.02	26.16
6000	0.57	27.94	26.06
7000	0.60	44.24	34.35
8000	0.64	27.19	31.09
9000	0.69	26.08	23.47
10000	0.74	28.33	21.22
11000	0.77	28.42	23.56
12000	0.79	28.24	28.12
13000	0.82	36.02	32.90
14000	0.86	24.85	26.61
15000	0.90	24.01	24.43
16000	0.92	28.27	26.14
17000	0.94	28.47	28.88
18000	0.97	28.64	29.44
19000	1.00	29.32	29.89
20000	1.04	26.64	28.62
21000	1.08	27.19	28.14
22000	1.11	29.45	33.92
24000	1.17	39.78	25.01
26000	1.22	26.02	26.24
28000	1.30	22.60	23.46
30000	1.38	22.57	23.52
32000	1.42	21.38	44.27
34000	1.50	30.82	28.01
36000	1.54	22.96	21.98
38000	1.59	23.33	20.37
40000	1.60	30.47	27.47

# Flexible Coaxial Cable, 2.92mm-M/2.4mm-M FL86-12KMVM+

## Typical Performance Curves

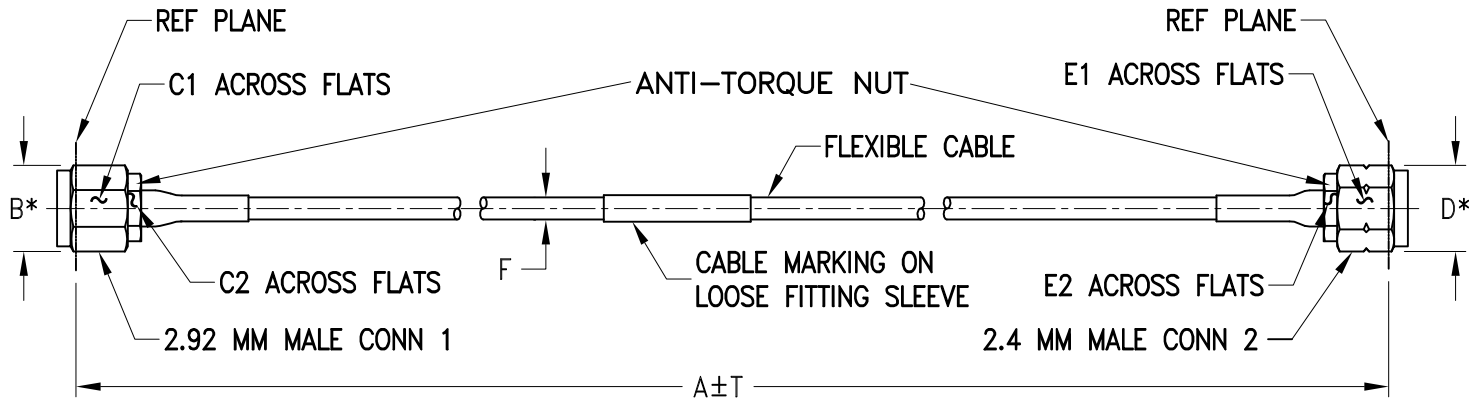


# Case Style

# SE

## Outline Dimensions

## SE3058



\* OVERALL CONNECTOR DIMENSION  
(CONNECTOR SHAPE MAY VARY)

### SE3058 SERIES

2.92 MM MALE (CONN 1)

2.4 MM MALE (CONN 2)

CASE STYLE #	A		B	C1	C2	D	E1	E2	F FL86-AKMVM+	T		WT. (GRAMS)
	INCH	MM								INCH	MM	
SE3058-12	12.00	304.80								.10	2.54	12.10
			0.36 [9.14]	.315 [8.00]	.256 [6.50]	.36 [9.14]	.315 [8.00]	.256 [6.50]	.106±.004 [2.64±0.1]			

Unless otherwise specified dimensions are in inches (mm).

Tolerances: 2 Pl.±.03; 3 Pl. ±.015

Note:

1. 086 Flexible Coaxial Cable.
2. "A" Represents Length of Cable.

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RF/IF MICROWAVE COMPONENTS



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 100°C Ambient Environment	Individual Model Data Sheet
Storage Temperature	-55° to 100° C Ambient Environment	Individual Model Data Sheet
Thermal Shock	-55° to 85°C, 25 cycles	MIL-STD-202F: Method 107G