FLEX TEST™

Test Cable

E50-3FT-VMVM+

50Ω 3FT DC to 50 GHz Low Loss

CASE STYLE: RG2513-3

Connectors	Model
2.4mm Male	E50-3FT-VMVM+

+RoHS Compliant

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

Maximum Ratings

Operating Temperature	-40°C to +70°C		
Storage Temperature	-55°C to +85°C		
Power Handling at 25°C, Sea Level	54W	at	2 GHz
	17W	at	18 GHz
	13W	at	26.5 GHz
	11W	at	40 GHz
	7W	at	50 GHz

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

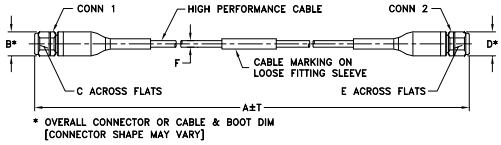
Features

- low insertion loss
- stainless steel 50 GHz connector for long mating-cycle life
- good amplitude and phase stability vs flexing over frequency
- 50 GHz connector mates with 2.4 mm, V*

Applications

- military and defense applications
- research & development labs
- field RF testing
- environmental and temperature test chambers

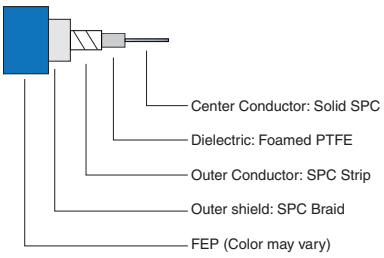
Outline Drawing



Outline Dimensions (inch / mm)

A		B	C	D	E	F	T		wt
Feet	Meters	0.36	.312	0.36	.312	.100	Inch	MM	grams
3.00	0.91	9.14	7.92	9.14	7.92	2.54	+.72/-0	+18.3/-0	41

Cable Construction



Electrical Specifications at 25°C

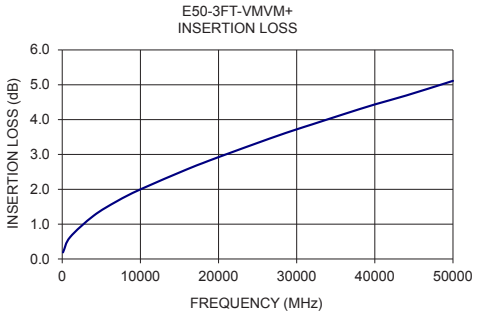
Parameter	Condition (GHz)	Min.	Typ.	Max.	Units
Frequency Range		DC		50	GHz
Length			3		FT
Insertion Loss	DC - 18	—	2.8	3.3	dB
	18 - 26.5	—	3.5	4.2	
	26.5 - 40	—	4.4	5.5	
	40 - 50	—	5.1	6.3	
Return Loss	DC - 18	19	20	—	dB
	18 - 26.5	17	20	—	
	26.5 - 40	16	18	—	
	40 - 50	15	17	—	

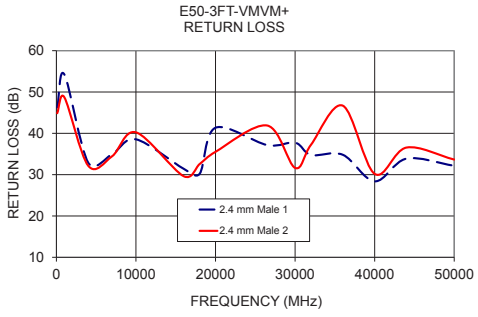
**V Connector is a trademark of Anritsu*

Custom sizes available, consult factory.

Typical Performance Data

Frequency (MHz)	Insertion Loss (dB)	Return Loss (dB)	
		2.4 mm Male 1	2.4 mm Male 2
100	0.19	46.3	44.9
1000	0.62	54.2	48.7
4000	1.24	32.9	32.2
7000	1.66	35.0	34.5
10000	2.00	38.6	40.2
16000	2.58	31.4	29.6
18000	2.75	30.2	32.6
20000	2.92	41.4	35.5
26500	3.45	37.2	41.9
30000	3.72	37.7	31.6
32000	3.86	34.8	37.2
36000	4.15	34.8	46.7
40000	4.44	28.4	30.2
44000	4.69	33.9	36.6
50000	5.11	32.2	33.7





Product Guarantee

Mini-Circuits® will repair or replace your test cable at its option if the connector attachment fails within six months of shipment. This guarantee excludes cable or connector interface damage from misuse or abuse.

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

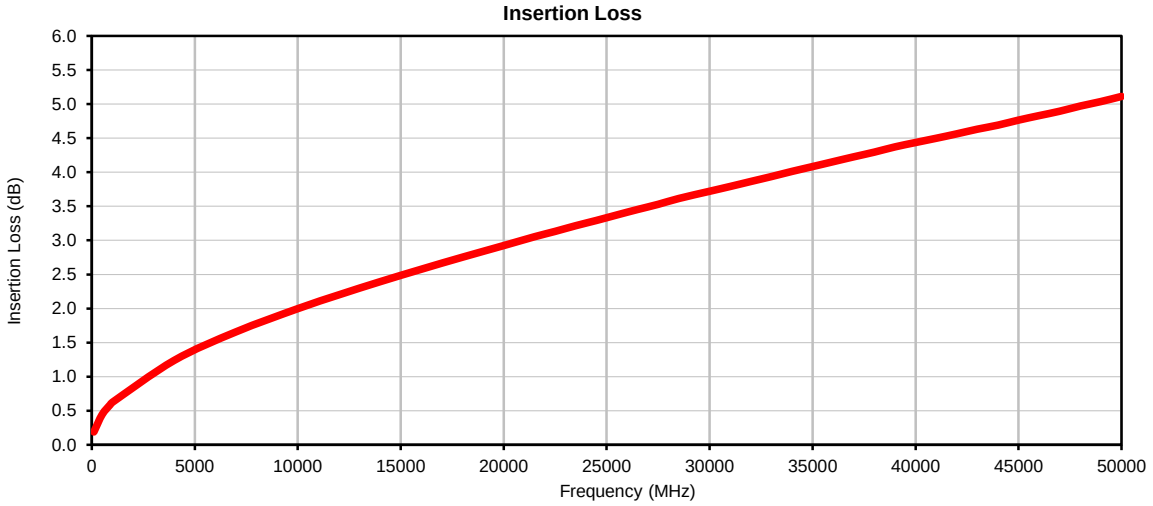
Flex Test Cable, 2.4mm-M/2.4mm-M E50-3FT-VMVM+

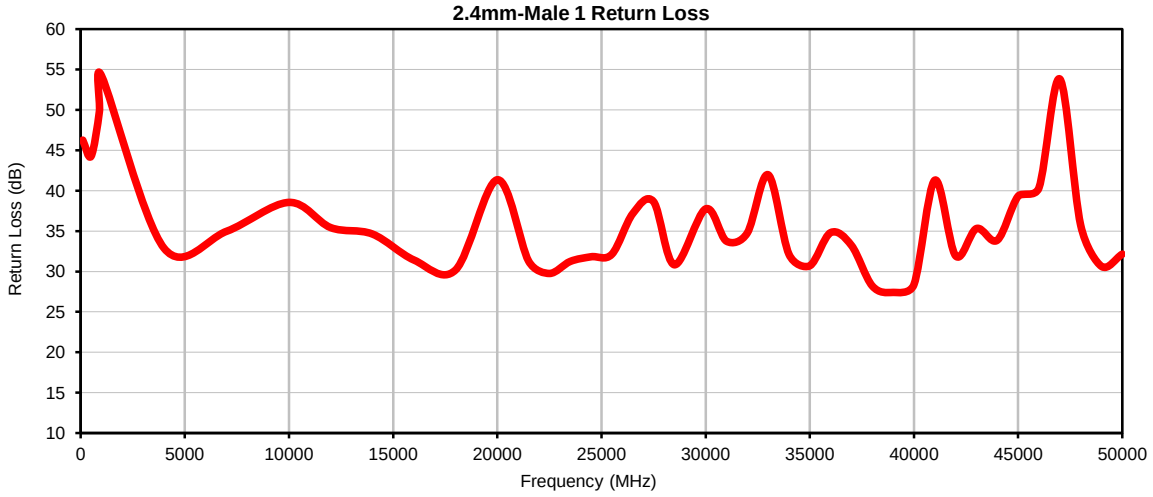
Typical Performance Data

FREQUENCY (MHz)	INSERTION LOSS (dB)	2.4mm-MALE 1 RETURN LOSS (dB)	2.4mm-MALE 2 RETURN LOSS (dB)
100	0.19	46.3	44.9
500	0.44	44.3	46.8
900	0.59	49.8	41.9
1000	0.62	54.2	48.7
4000	1.24	32.9	32.2
7000	1.66	35.0	34.5
10000	2.00	38.6	40.2
12000	2.20	35.4	36.5
14000	2.39	34.6	41.4
16000	2.58	31.4	29.6
18000	2.75	30.2	32.6
20000	2.92	41.4	35.5
21500	3.05	31.3	27.3
22500	3.13	29.8	29.8
23500	3.22	31.2	28.7
24500	3.29	31.8	31.2
25500	3.37	32.1	29.4
26500	3.45	37.2	41.9
27500	3.53	38.6	37.8
28500	3.61	30.8	26.4
30000	3.72	37.7	31.6
31000	3.79	33.8	31.3
32000	3.86	34.8	37.2
33000	3.94	42.0	41.3
34000	4.01	32.1	32.7
35000	4.08	30.7	38.9
36000	4.15	34.8	46.7
37000	4.23	33.2	34.1
38000	4.30	28.2	32.4
39000	4.37	27.4	28.0
40000	4.44	28.4	30.2
41000	4.50	41.3	29.9
42000	4.56	31.9	34.0
43000	4.63	35.3	38.0
44000	4.69	33.9	36.6
45000	4.76	39.3	36.4
46000	4.83	40.4	39.5
47000	4.90	53.8	47.4
48000	4.97	35.7	40.2
49000	5.04	30.6	35.2
50000	5.11	32.2	33.7

Flex Test Cable, 2.4mm-M/2.4mm-M E50-3FT-VMVM+

Typical Performance Curves

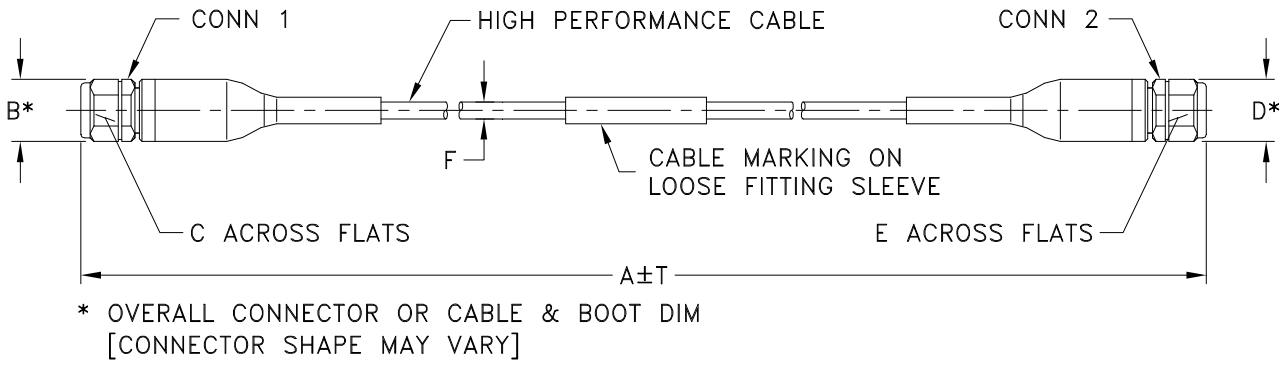




Case Style RG

RG2513

Outline Dimensions



RG2513 SERIES
2.4mm MALE (CONN-1)
2.4mm MALE (CONN-2)

CASE STYLE #	A		B	C	D	E	F	T		WEIGHT GRAMS
	FEET	METERS						INCH	MM	
RG2513-2	2.00	.61	.36 (9.25)	.312 (7.93)	.36 (9.25)	.312 (7.93)	.100 (2.54)	+.50/-0	+12.7/-0	36
RG2513-3	3.00	.91						+.72/-0	+18.3/-0	41

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

Note:
1. High Performance very Flexible Cable.

Mini-Circuits®
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Environmental Specifications **ENV91**

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	-40° to 70° C Ambient Environment	Individual Model Data Sheet
Storage Temperature	-55° to 85° C Ambient Environment	Individual Model Data Sheet
Mechanical Flexing	4,000 cycles During each cycle, cable flexed from 90° through 0° to -90° and back with a Radii of 3 inches	---

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