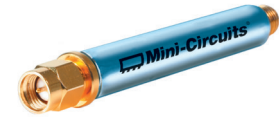


Low Pass Filter

VLFX-540+

50Ω DC to 540 MHz (40 dB Typ. Isolation up to 20 GHz)



Generic photo used for illustration purposes only

CASE STYLE: FF1118

Connectors	Model
SMA	VLFX-540+

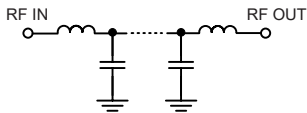
Features

- Very good isolation, 40 dB typ. up to 20 GHz
- Excellent power handling, 10W
- Temperature stable LTCC internal structure
- Re-entry frequency > 20 GHz
- Protected by US patent 6,943,646
- Rugged unibody construction

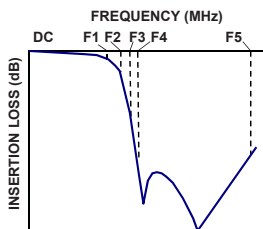
Applications

- Harmonic rejection
- Transmitters/receivers
- Lab use
- Test instrumentation

Functional Schematic



Typical Frequency Response



Electrical Specifications⁽¹⁾ at 25°C

Parameter	F#	Frequency (MHz)	Min.	Typ.	Max.	Unit
Pass Band	Insertion Loss	DC-F1	—	1.0	1.6	dB
	Freq. Cut-Off	F2	—	3.0	—	dB
	VSWR	DC-F1	—	1.2	—	:1
Stop Band	Insertion Loss	F3	20	30	—	dB
		F4-F5	—	40	—	dB
	VSWR	F3-F5	—	10	—	:1

(1) In Application where DC voltage is present at either input or output ports, coupling capacitors are required.

Maximum Ratings

Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
RF Power Input*	10W max.

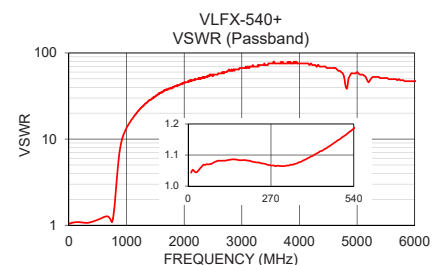
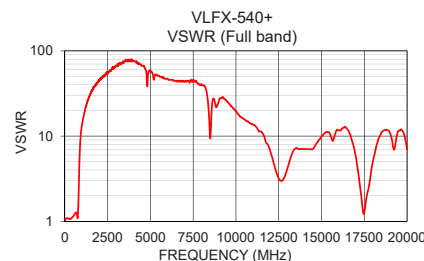
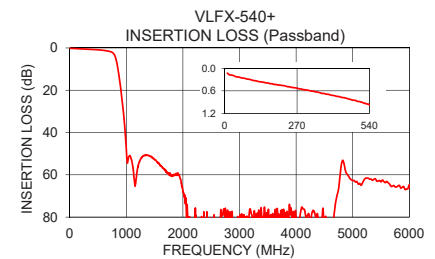
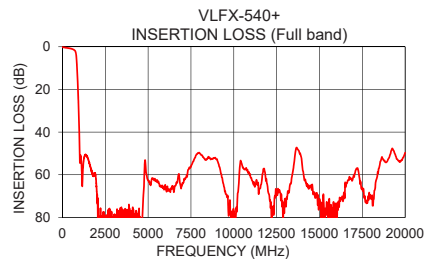
*Passband rating, derate linearly to 3.5W at 100°C ambient.
Permanent damage may occur if any of these limits are exceeded.

Typical Performance Data at 25°C

Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)
10	0.13	1.04
250	0.51	1.07
540	0.97	1.18
700	1.61	1.23
790	3.22	1.63
810	4.54	2.29
860	11.16	5.58
910	20.97	9.23
950	30.56	11.38
1000	47.72	13.49
1100	53.78	17.22
1500	52.90	31.03
2500	93.32	56.04
5000	62.71	59.91
7500	56.27	45.72
10000	78.04	19.54
12500	67.02	3.19
15000	71.37	9.90
17500	66.17	1.27
20000	49.71	6.97

+RoHS Compliant

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



Notes

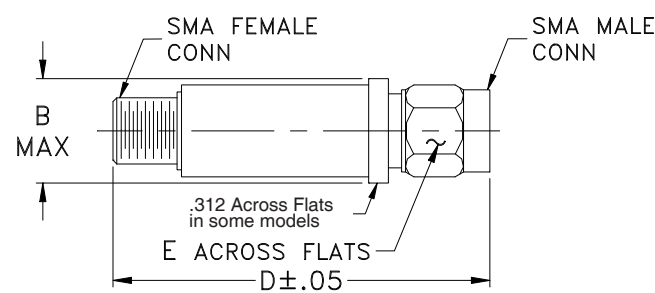
- A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's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



Coaxial Connections

INPUT	SMA-Male
OUTPUT	SMA-Female

Outline Drawing



Outline Dimensions (^{inch}_{mm})

B	D	E	wt.
.410	2.67	.312	grams
10.41	67.82	7.92	17.0

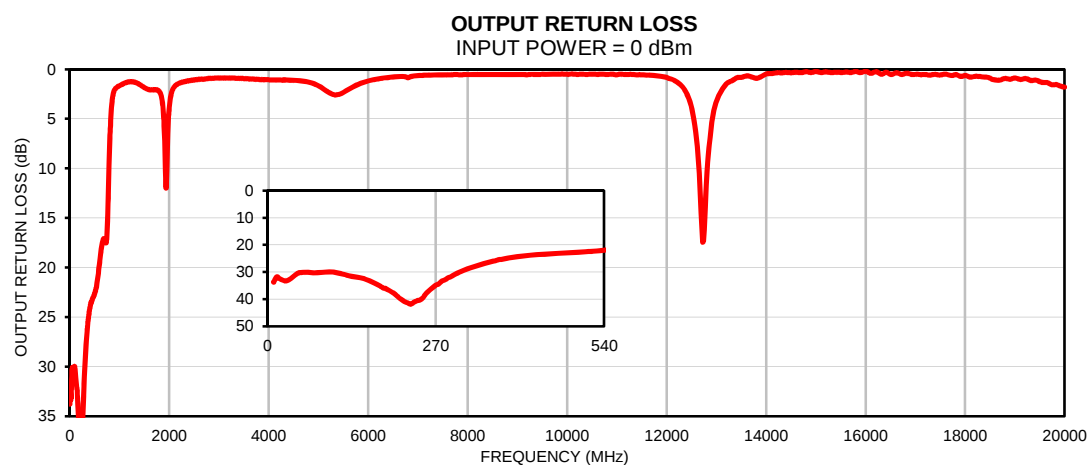
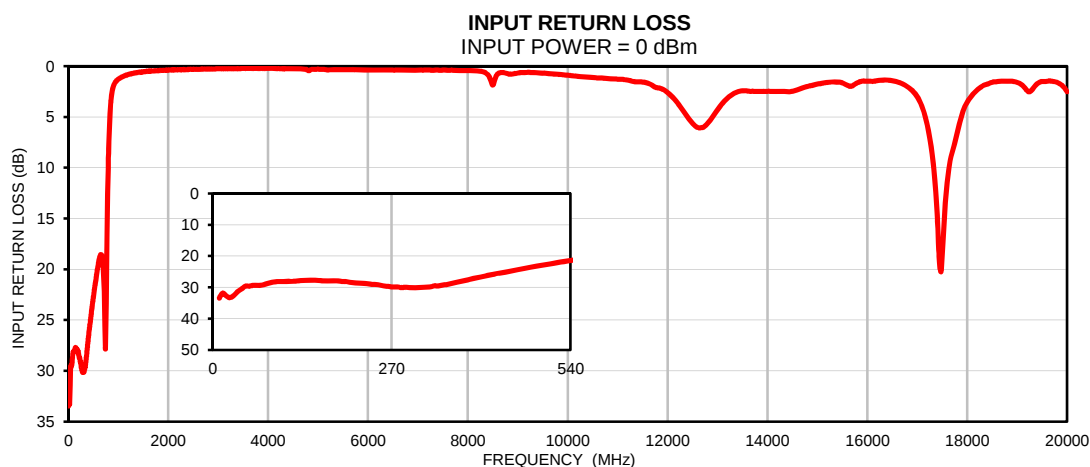
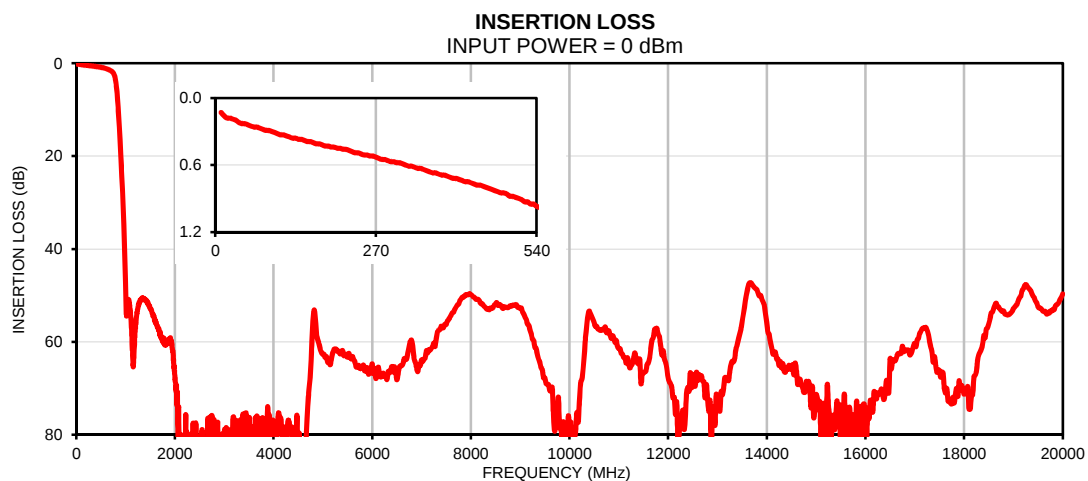
Note: Please refer to case style drawing for details

Notes
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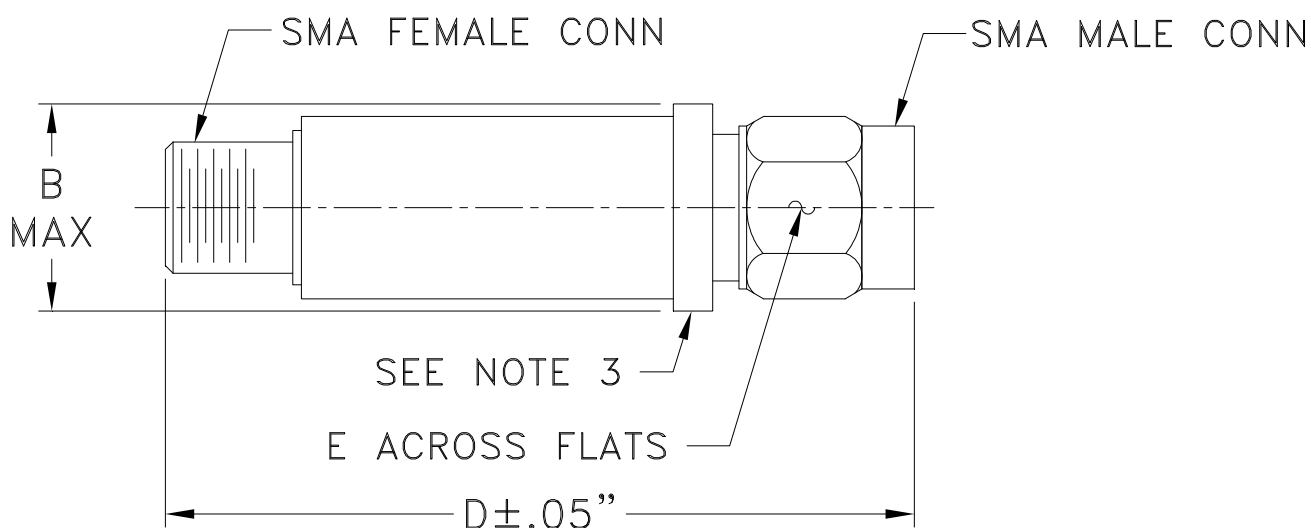
Typical Performance Data

FREQ.	INSERTION LOSS	INPUT RETURN LOSS	OUTPUT RETURN LOSS
(MHz)	(dB)	(dB)	(dB)
10	0.13	33.45	33.79
100	0.31	28.11	29.98
200	0.44	28.12	37.51
300	0.57	30.08	30.93
450	0.79	24.85	23.35
475	0.84	23.79	23.01
500	0.88	22.83	22.78
520	0.93	22.12	22.44
540	0.97	21.45	21.99
550	1.00	21.10	21.67
575	1.06	20.32	20.83
600	1.14	19.52	19.73
650	1.34	18.56	17.78
700	1.61	19.84	17.11
750	2.06	27.30	17.00
800	3.80	10.06	8.90
810	4.54	8.14	7.33
850	9.50	3.70	3.50
875	13.86	2.58	2.57
900	18.84	2.03	2.14
910	20.97	1.89	2.05
950	30.56	1.53	1.83
975	38.02	1.40	1.74
1000	47.72	1.29	1.67
1050	51.17	1.13	1.54
1100	53.78	1.01	1.41
2000	67.94	0.38	4.19
2500	93.32	0.31	1.08
3000	81.56	0.26	0.88
3500	86.12	0.23	0.94
3750	76.51	0.23	1.01
4000	79.85	0.23	1.06
4500	88.15	0.26	1.11
5000	62.71	0.29	1.67
5500	63.32	0.34	2.36
6000	64.73	0.37	1.19
6500	68.16	0.39	0.78
7000	63.91	0.40	0.64
7500	56.27	0.38	0.56
8000	49.81	0.43	0.54
8500	51.81	1.86	0.52
9000	52.78	0.67	0.55
10000	78.04	0.89	0.51
11000	61.45	1.28	0.55
11500	66.71	1.57	0.56
12000	67.81	2.60	0.82
12500	67.02	5.63	3.80
13000	73.59	4.31	3.24
13500	55.52	2.42	0.82
14000	56.04	2.48	0.49
14500	65.93	2.48	0.36
15000	71.37	1.76	0.22
15500	84.68	1.65	0.33
16000	77.89	1.49	0.20
16500	63.71	1.44	0.51
17000	60.33	3.02	0.51
18500	56.08	1.58	0.89
19000	52.83	1.60	0.88
19500	52.48	1.51	1.25
20000	49.71	2.51	1.80

Typical Performance Curves



Outline Dimensions



CASE #.	A	B	C	D	E	WT GRAMS
FF1118	--	.410 (10.41)	--	2.67 (67.82)	.312 (7.92)	17.0

Dimensions are in inches (mm). Tolerances: 2Pl. ± .04; 3Pl. ± .030

Notes:

1. Case material: Stainless steel.
2. Case finish: Gold plated.
3. Round Flange may have .312 Across Flats in some models.



P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661 For detailed performance specs & shopping online see Mini-Circuits web site



Provides ACTUAL Data Instantly From MINI-CIRCUITS At: www.minicircuits.com

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
Barometric Pressure	100,000 Feet	MIL-STD-202, Method 105, Condition D
Humidity	90% RH, 65°C Units may require bake-out after humidity to restore full performance.	MIL-STD-202, Method 103
Thermal Shock	-65° to 125°C, 5 cycles	MIL-STD-202, Method 107, Condition B
Vibration (High Frequency)	20g peak, 10-2000 Hz, 12 times in each of three perpendicular directions (total 36)	MIL-STD-202, Method 204, Condition D
Mechanical Shock	100g, 6ms sawtooth, 3 shocks each direction 3 axes (total 18)	MIL-STD-202, Method 213, Condition I