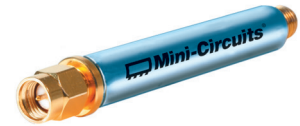


Low Pass Filter

50Ω DC to 450 MHz (40 dB Typ. Isolation up to 20 GHz)

VLFX-450+



Generic photo used for illustration purposes only
CASE STYLE: FF1118

Connectors	Model
SMA	VLFX-450+

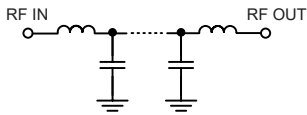
Features

- 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

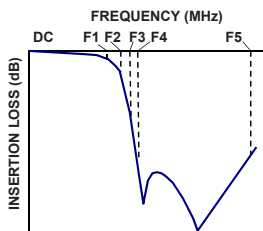
Applications

- 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	—	1.15	—	:1
Stop Band	Insertion Loss	F3	20	35	—	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.

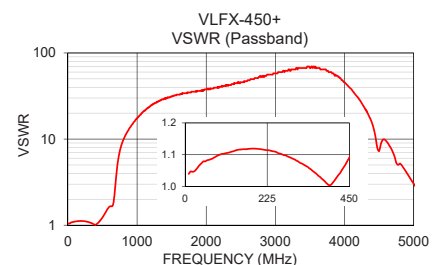
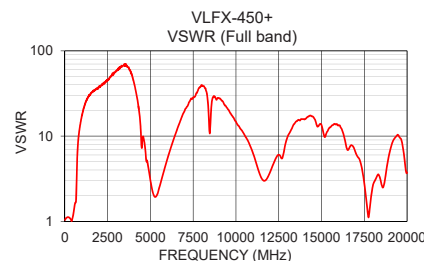
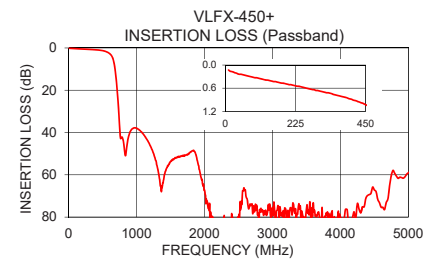
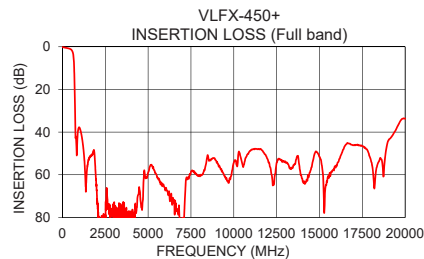
*Passband rating, derate linearly to 3.5W at 100°C ambient.
Permanent damage may occur if any of these limits are exceeded.

Typical Performance Data at 25°C

Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)
10	0.13	1.04
100	0.33	1.10
450	1.03	1.09
600	2.59	1.64
625	3.37	1.66
640	4.13	1.66
700	14.95	3.83
715	20.29	4.92
740	31.69	6.61
800	43.39	9.74
850	48.36	11.77
900	39.97	13.70
2500	88.89	45.72
5000	59.06	3.03
7500	58.61	28.49
10000	54.26	14.74
12500	54.33	6.03
15000	51.67	13.49
17500	46.48	2.81
20000	33.73	3.74

+RoHS Compliant

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



Notes

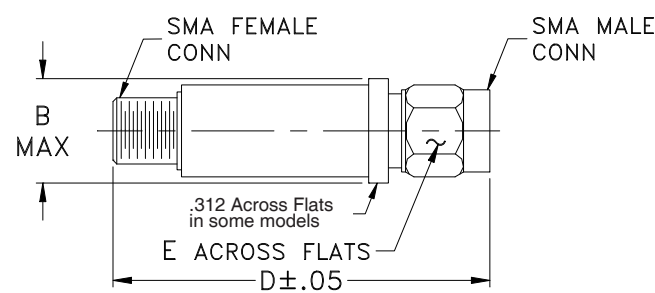
- A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's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

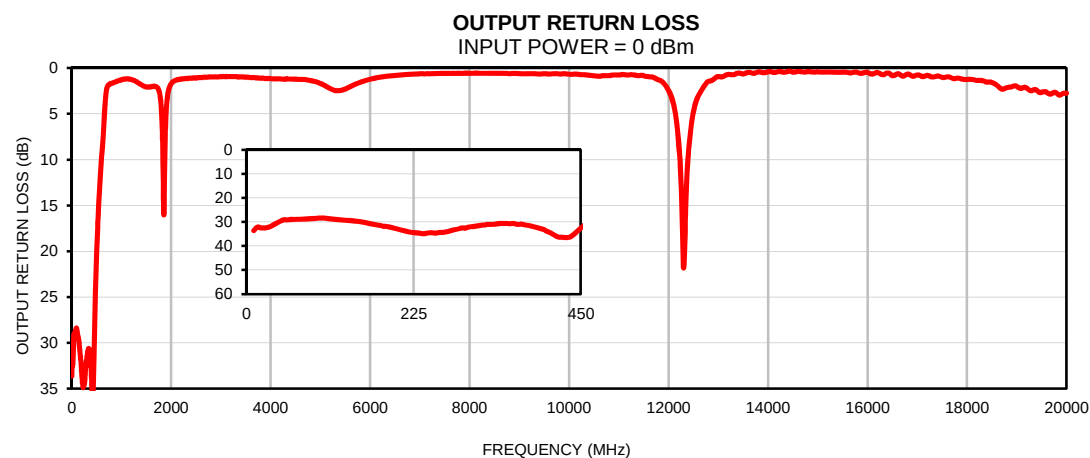
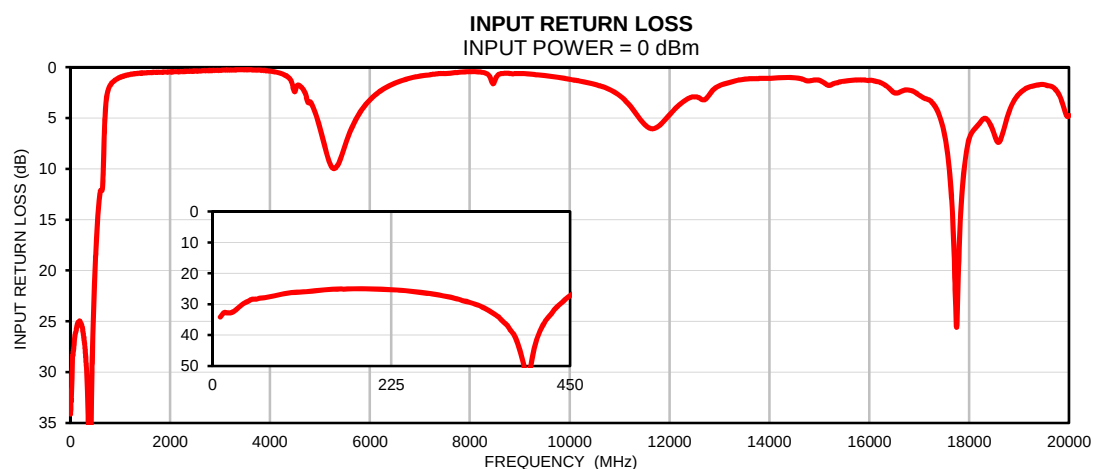
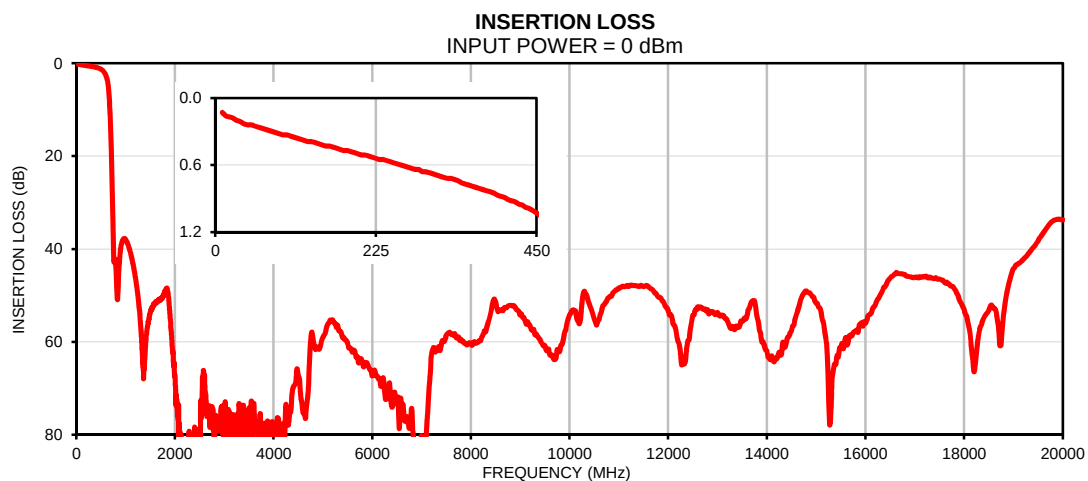
Note: Please refer to case style drawing for details

Notes
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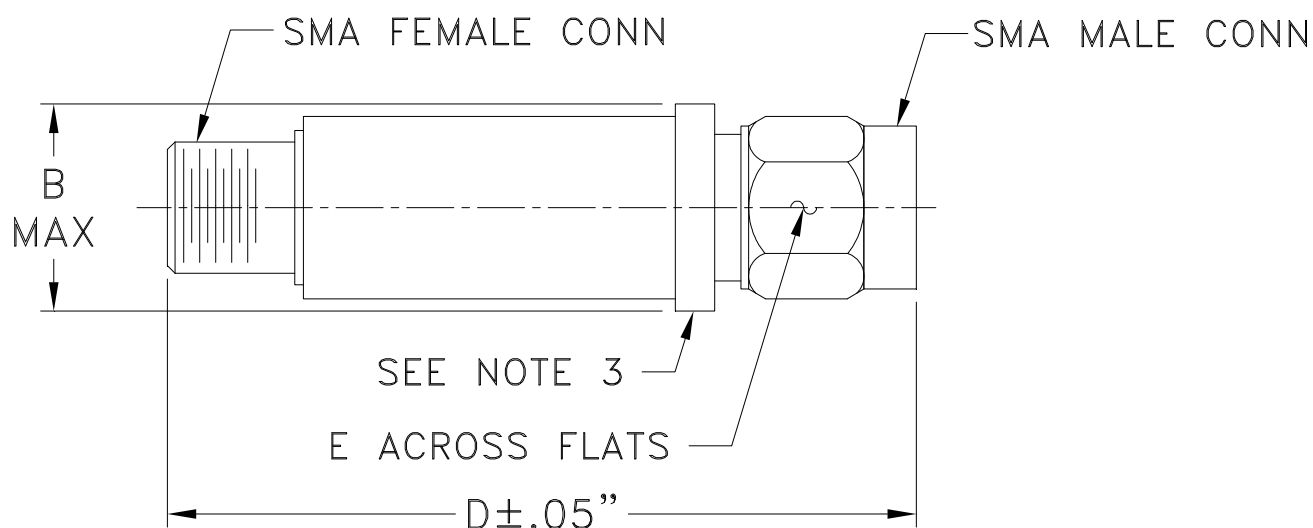
Typical Performance Data

FREQ.	INSERTION LOSS	INPUT RETURN LOSS	OUTPUT RETURN LOSS
(MHz)	(dB)	(dB)	(dB)
10	0.13	34.14	33.63
100	0.33	26.25	28.38
200	0.50	25.04	32.66
300	0.67	27.76	32.06
450	1.03	27.23	32.65
500	1.27	19.76	21.37
600	2.59	12.33	10.36
620	3.18	12.09	8.91
640	4.13	12.09	7.35
650	4.88	11.67	6.43
700	14.95	4.64	2.55
715	20.29	3.58	2.15
720	22.28	3.33	2.07
740	31.69	2.65	1.87
750	37.31	2.42	1.81
800	43.39	1.79	1.68
850	48.36	1.48	1.58
875	42.83	1.37	1.53
900	39.97	1.27	1.48
950	38.01	1.11	1.37
975	37.77	1.05	1.33
1000	37.95	1.00	1.28
1250	49.97	0.67	1.33
1500	53.71	0.56	2.05
1750	50.60	0.50	2.33
2000	67.17	0.46	1.75
2500	88.89	0.38	1.07
2750	73.91	0.34	0.98
3000	75.51	0.30	0.94
3500	76.26	0.26	0.99
3750	83.76	0.28	1.08
4000	80.00	0.38	1.15
4500	67.17	2.41	1.20
5000	59.06	5.96	1.67
5500	60.22	7.69	2.30
6000	67.35	3.22	1.22
6500	73.26	1.58	0.80
7000	80.17	0.88	0.63
7500	58.61	0.61	0.59
8000	60.31	0.45	0.57
8500	51.43	1.35	0.56
9000	54.24	0.62	0.61
10000	54.26	1.18	0.67
11000	48.41	2.80	0.77
11500	48.11	5.63	0.83
12000	53.26	4.69	2.40
12500	54.33	2.91	4.87
13000	53.70	1.82	0.93
13500	55.63	1.18	0.64
14000	61.90	1.11	0.40
14500	57.61	1.03	0.44
15000	51.67	1.29	0.40
15500	61.42	1.38	0.44
16000	55.99	1.30	0.48
16500	46.31	2.51	0.83
17000	46.08	2.75	0.74
18500	53.20	6.59	1.57
19000	44.24	2.63	2.00
19500	38.27	1.71	2.66
20000	33.73	4.76	2.74

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