

Low Pass Filter

50Ω DC to 780 MHz (40 dB Typ. Isolation up to 20 GHz)

VLFX-780+



Generic photo used for illustration purposes only

CASE STYLE: FF1118

Connectors Model

SMA VLFX-780+

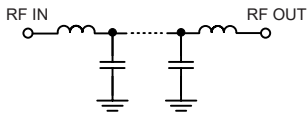
Features

- 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

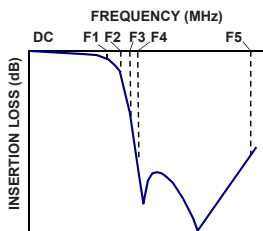
Applications

- 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	—	1.1	1.6	dB
	Freq. Cut-Off	F2	—	3.0	—	dB
	VSWR	DC-F1	—	1.25	—	: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.

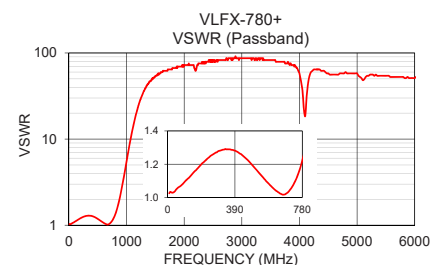
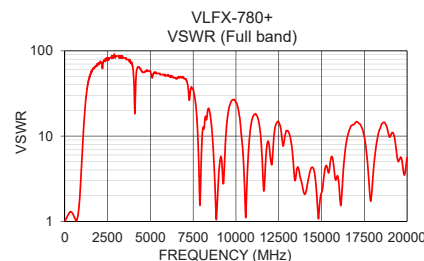
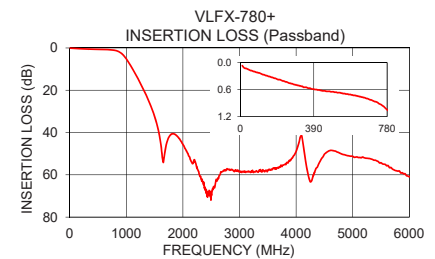
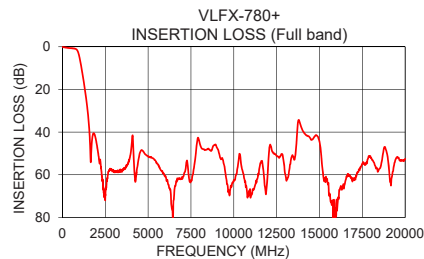
*Passband rating, derate linearly to 3.5W at 100°C ambient.
Permanent damage may occur if any of these limits are exceeded.

Typical Performance Data at 25°C

Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)
10	0.07	1.03
250	0.44	1.25
500	0.66	1.18
780	1.05	1.22
950	3.47	3.54
1100	9.40	12.61
1320	20.52	38.61
1450	28.58	51.10
1480	30.79	52.65
1600	43.66	59.91
2500	69.17	82.73
5000	51.24	57.91
7500	62.46	35.46
10000	62.49	24.83
12500	51.16	14.62
15000	44.35	2.15
16000	71.63	2.95
17500	54.74	9.85
19000	53.13	9.74
20000	52.55	5.61

+RoHS Compliant

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



Notes

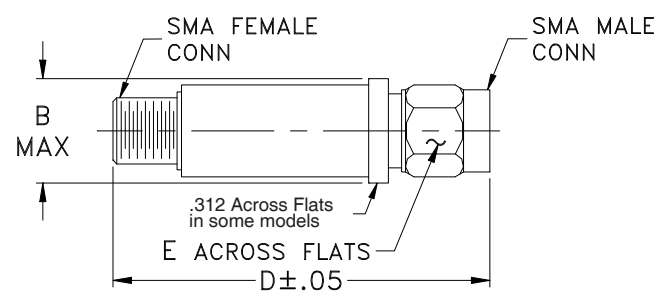
- A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
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Coaxial Connections

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

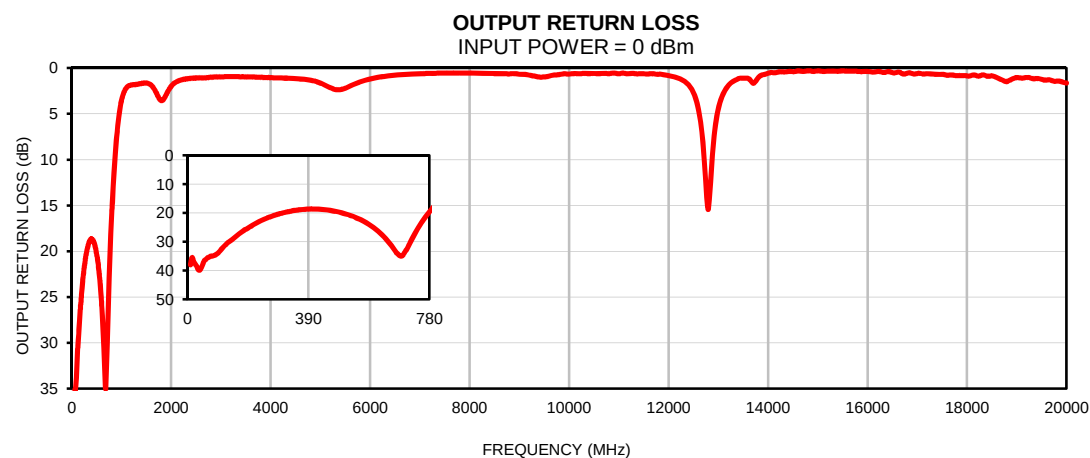
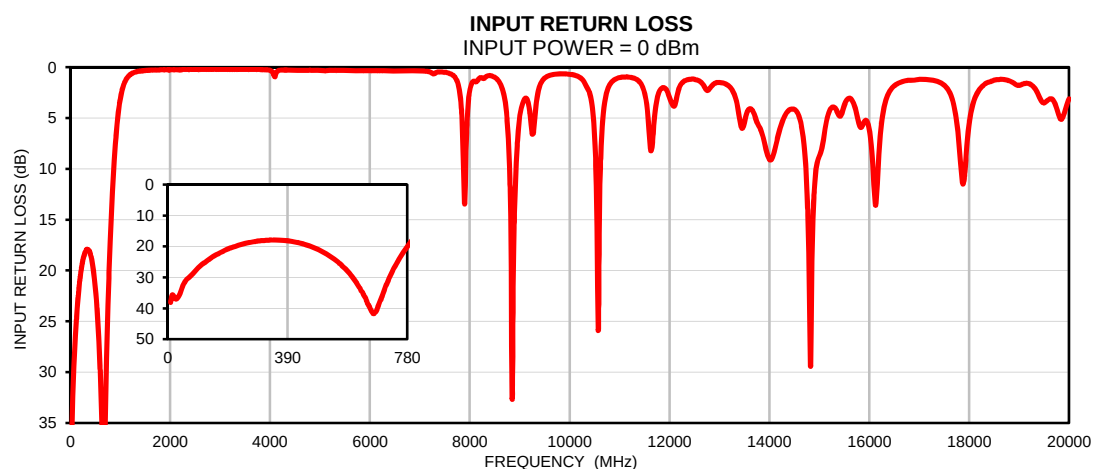
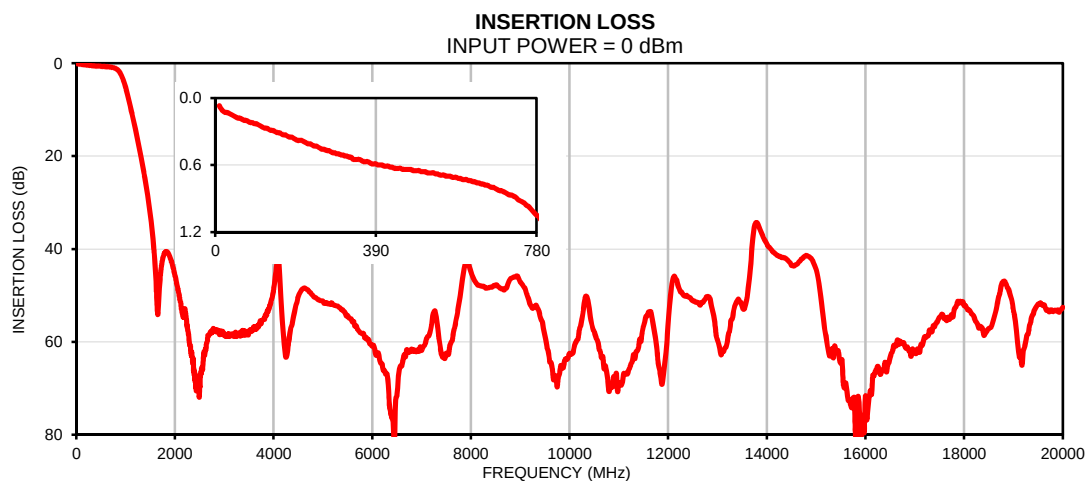
Note: Please refer to case style drawing for details

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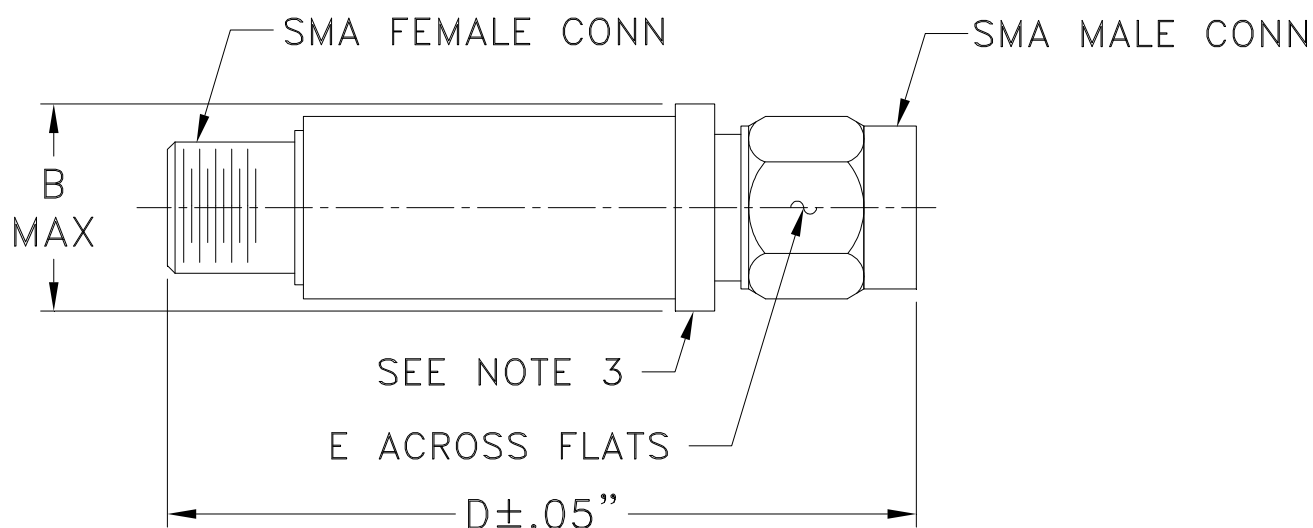
Typical Performance Data

FREQ.	INSERTION LOSS	INPUT RETURN LOSS	OUTPUT RETURN LOSS
(MHz)	(dB)	(dB)	(dB)
10	0.07	38.08	38.05
50	0.17	32.56	37.80
100	0.23	26.83	33.88
250	0.44	19.07	22.14
300	0.50	18.20	20.23
400	0.60	18.30	18.63
500	0.66	21.51	20.08
600	0.73	29.67	25.09
650	0.77	38.31	30.23
700	0.84	35.55	33.94
725	0.88	29.38	28.96
750	0.94	24.69	24.28
775	1.03	20.78	20.49
780	1.05	20.02	19.75
800	1.14	17.40	17.20
850	1.53	11.94	12.04
875	1.84	9.76	9.93
900	2.26	7.89	8.16
925	2.81	6.33	6.68
950	3.47	5.05	5.46
975	4.26	4.01	4.49
1000	5.15	3.20	3.73
1100	9.40	1.38	2.20
1200	14.19	0.74	1.85
1250	16.74	0.58	1.81
1300	19.40	0.48	1.79
1350	22.23	0.42	1.75
1400	25.27	0.37	1.69
1450	28.58	0.34	1.65
1475	30.41	0.34	1.63
1500	32.35	0.32	1.63
1600	43.66	0.29	1.85
1800	40.70	0.26	3.54
1900	41.76	0.25	2.96
2000	45.67	0.24	2.03
2500	69.17	0.21	1.09
3000	58.36	0.20	0.95
4000	48.98	0.30	1.03
5000	51.24	0.30	1.63
7500	62.46	0.49	0.56
8000	44.85	2.30	0.54
9000	47.06	4.85	0.67
10000	62.49	0.70	0.64
11000	68.82	1.02	0.61
11500	56.62	2.48	0.61
12000	56.40	2.97	0.81
12500	51.16	1.19	2.67
13000	59.59	1.51	4.47
13500	52.36	5.40	1.09
14000	38.87	9.07	0.57
14500	43.53	4.15	0.39
15000	44.35	8.74	0.31
15500	64.59	3.75	0.29
16000	71.63	6.13	0.37
16500	63.41	1.84	0.50
17000	62.19	1.20	0.59
18500	57.13	1.28	0.84
19000	53.13	1.79	1.03
19500	51.89	3.51	1.23
20000	52.55	3.13	1.63

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



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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
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