

Low Pass Filter

VLFX-1100+

50Ω DC to 1100 MHz (40 dB Typ. Isolation up to 20 GHz)



Generic photo used for illustration purposes only

CASE STYLE: FF1118

Connectors	Model
SMA	VLFX-1100+

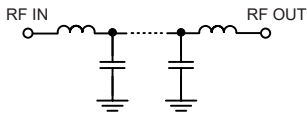
Features

- 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

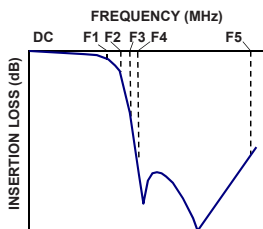
Applications

- 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	DC-1100	—	1.1	1.6 dB
	Freq. Cut-Off	F2	1750	—	3.0	dB
	VSWR	DC-F1	DC-1100	—	1.4	:1
Stop Band	Insertion Loss	F3	2070	20	28	dB
		F4-F5	2300-20000	—	40	dB
	VSWR	F3-F5	2070-20000	—	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.

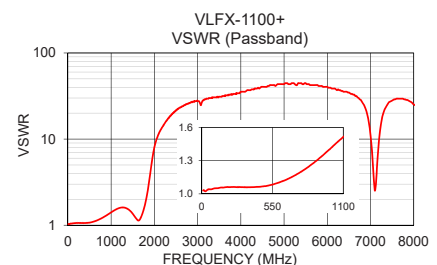
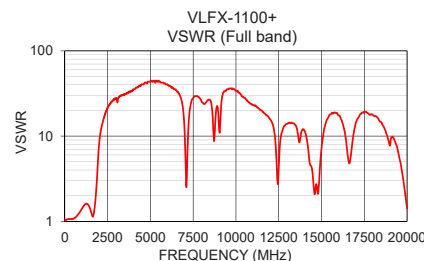
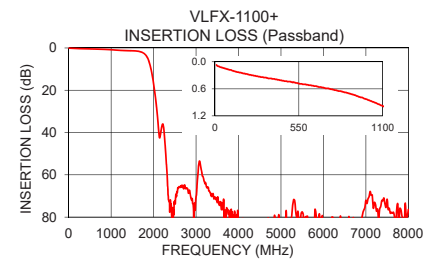
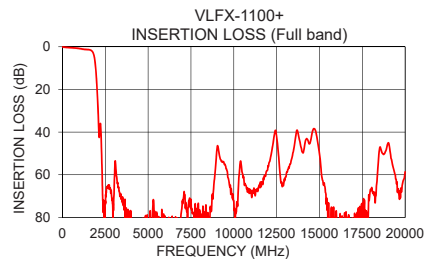
*Passband rating, derate linearly to 3.5W at 100°C ambient.
Permanent damage may occur if any of these limits are exceeded.

Typical Performance Data at 25°C

Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)
10	0.07	1.03
500	0.45	1.07
1100	0.98	1.51
1750	2.28	1.50
1800	3.02	1.89
2000	16.91	8.01
2020	19.71	8.86
2050	24.42	9.96
2070	28.02	10.56
2080	29.97	10.89
2300	54.66	16.89
4000	103.83	35.46
5000	84.68	43.44
7500	71.55	28.03
10000	72.22	34.07
12500	41.81	4.30
15000	49.99	7.25
17500	74.24	19.11
19000	45.20	7.73
20000	58.68	1.42

+RoHS Compliant

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



Notes

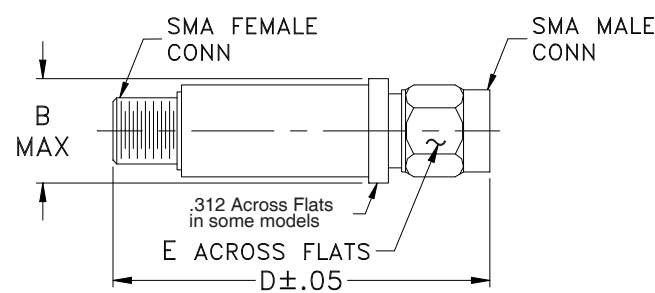
- A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
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Coaxial Connections

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

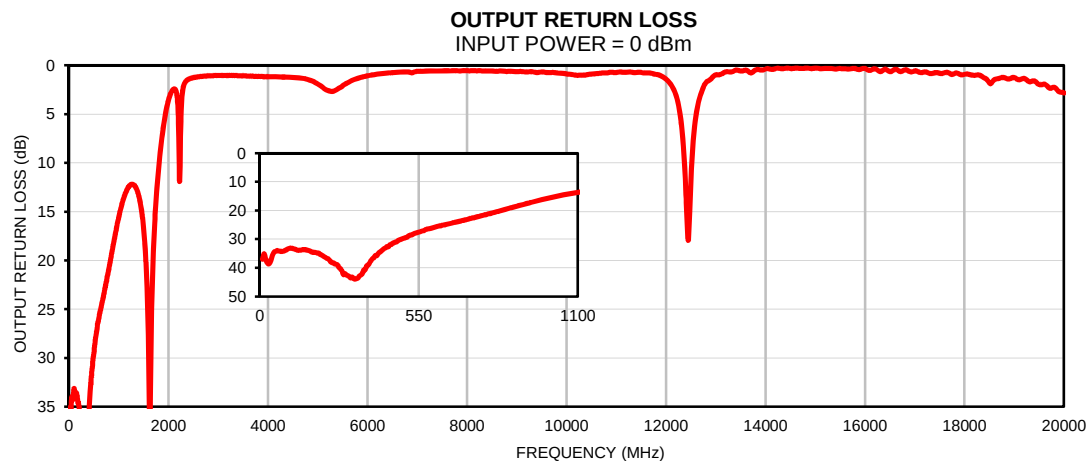
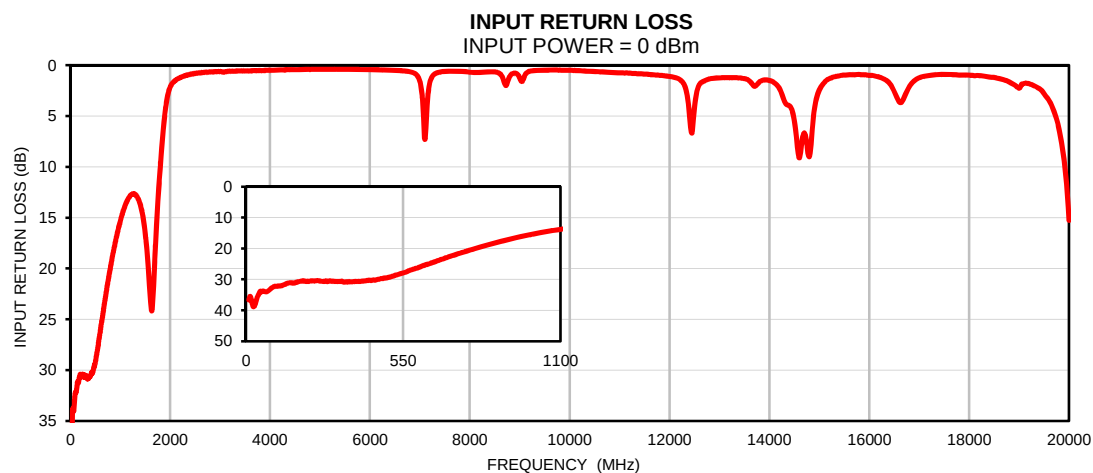
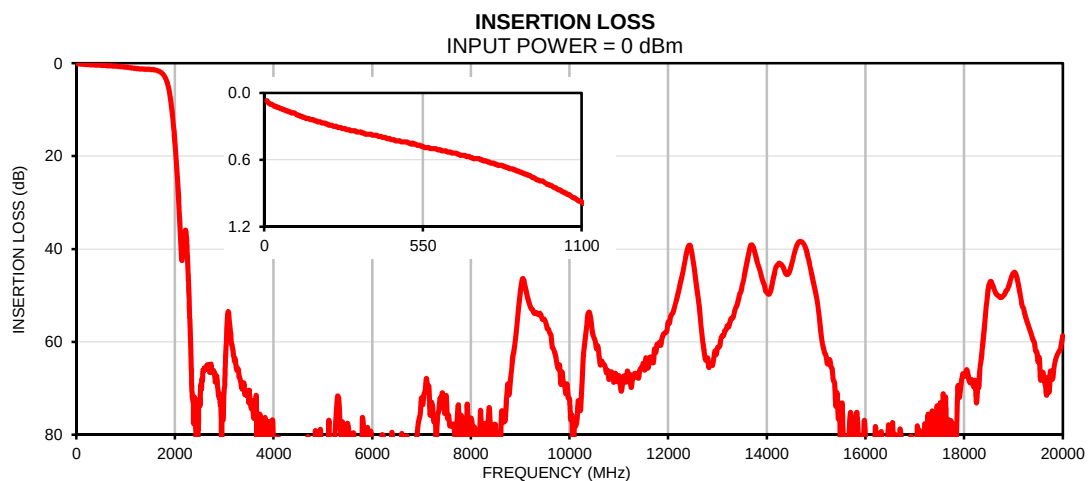
Note: Please refer to case style drawing for details

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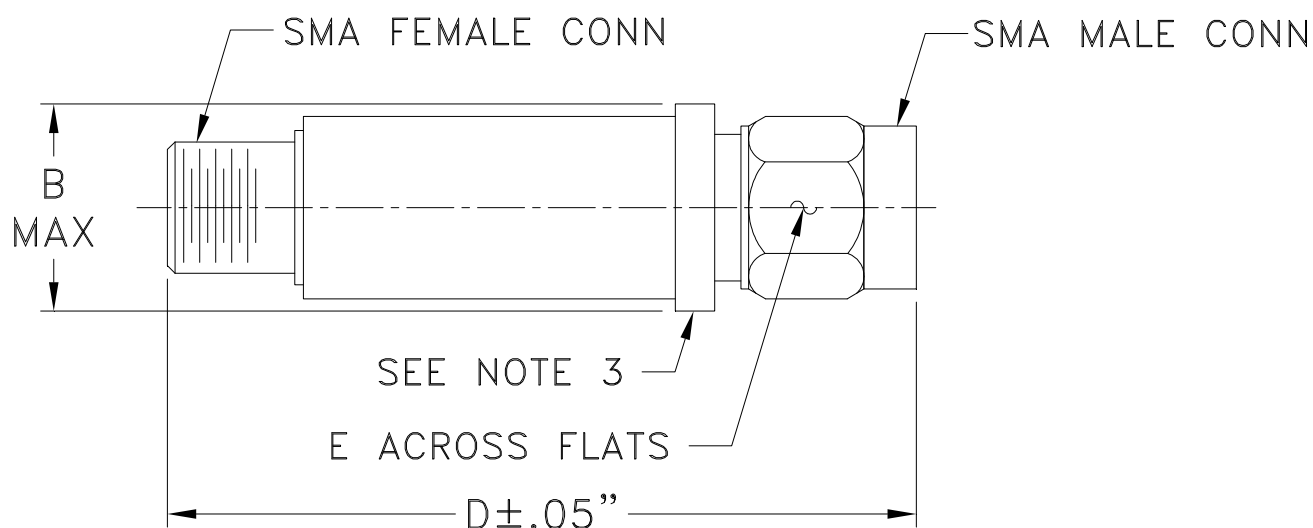
Typical Performance Data

FREQ.	INSERTION LOSS	INPUT RETURN LOSS	OUTPUT RETURN LOSS
(MHz)	(dB)	(dB)	(dB)
10	0.07	36.63	37.00
50	0.13	33.88	34.49
100	0.18	32.25	33.30
250	0.30	30.41	38.19
300	0.34	30.63	42.52
400	0.39	30.63	35.75
500	0.45	29.35	29.68
600	0.51	26.33	26.01
700	0.57	23.00	23.54
800	0.64	20.06	21.00
900	0.72	17.52	18.20
1000	0.84	15.41	15.64
1100	0.98	13.80	13.65
1200	1.12	12.86	12.49
1300	1.23	12.70	12.25
1500	1.34	16.40	16.55
1700	1.85	18.57	18.93
1730	2.08	15.67	15.76
1750	2.28	13.97	14.06
1800	3.02	10.23	10.79
1900	6.88	4.64	6.32
2000	16.91	2.18	3.60
2020	19.71	1.97	3.26
2030	21.20	1.89	3.12
2070	28.02	1.65	2.66
2080	29.97	1.60	2.58
2090	32.07	1.56	2.51
2100	34.37	1.51	2.46
2250	40.39	1.12	5.99
2300	54.66	1.03	2.24
2500	73.28	0.81	1.26
2750	66.47	0.68	1.10
3000	70.36	0.63	1.04
3250	65.85	0.59	1.04
3500	73.15	0.56	1.07
4000	103.83	0.49	1.15
5000	84.68	0.40	1.91
6000	95.38	0.43	1.08
7000	72.07	1.56	0.62
7500	71.55	0.62	0.57
8000	76.47	0.69	0.55
9000	49.59	1.26	0.64
10000	72.22	0.51	0.87
11000	67.28	0.75	0.74
11500	64.61	0.87	0.72
12000	55.79	1.11	1.40
12500	41.81	4.12	12.11
13000	61.27	1.25	0.97
13500	47.92	1.31	0.58
14000	49.38	1.50	0.38
14500	43.52	5.50	0.32
15000	49.99	2.41	0.29
15500	86.72	0.97	0.33
16000	80.49	0.99	0.31
16500	88.14	2.58	0.64
17000	85.61	1.23	0.57
18500	48.05	1.20	1.80
19000	45.20	2.26	1.25
19500	64.31	2.81	1.96
20000	58.68	15.26	2.83

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



The Design Engineers Search Engine 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