

Coaxial

Low Pass Filter

VLFG-800+

50Ω

DC to 800 MHz



Generic photo used for illustration purposes only

CASE STYLE: FF704

The Big Deal

- Excellent power handling, 4.5W
- Temperature stable
- Rugged unibody construction
- Good rejection, 47 dB typical

Product Overview

VLFG-800+ is a 50Ω low pass filter built in rugged unibody construction. Covering DC-800 MHz bandwidth, these units offer good matching within the passband and good rejection in stopband. VLFG-800+ offer low insertion loss, and excellent power handling capability. It handles up to 4.5W RF input power and provides a wide operating temperature range from -55°C to 125°C.

Key Features

Feature	Advantages
Low passband insertion loss	Suitable for high performance application.
4.5W Power handling	Supports a range of system power requirements.
Connectorized package	The connectorized package is easy to interface with other devices and well suited for test setups.

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



Low Pass Filter

VLFG-800+

50Ω

DC to 800 MHz



Features

- Low loss, 1.6dB typ.
- High rejection 47dB
- Excellent power handling, 4.5W
- Temperature stable
- Connectorized package
- Rugged unibody construction

Generic photo used for illustration purposes only
CASE STYLE: FF704

+RoHS Compliant

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

Applications

- Military radio applications
- Test and measurement
- Telecommunications and broadband wireless applications
- Harmonic rejection
- VHF/UHF transmitters/receivers

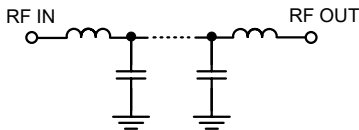
Electrical Specifications at 25°C

Parameter	F#	Frequency (MHz)	Min.	Typ.	Max.	Unit
Pass Band	Insertion Loss	DC-F1	DC - 800	—	1.6	2.1 dB
	Freq. Cut-Off	F2*	900	—	3.0	dB
	Return Loss	DC-F1	DC - 800	—	17	dB
Stop Band	Rejection Loss	F3-F4	1150 - 1400	20	38	dB
		F4-F5	1400 - 4500	36	47	dB
		F5-F6	4500 - 10000	—	24	dB

In Application where DC voltage is present at either input or output port, DC blocks are required.

* Typically, a ±5% frequency deviation from the stated value may occur on a unit-to-unit basis.

Functional Schematic



Maximum Ratings

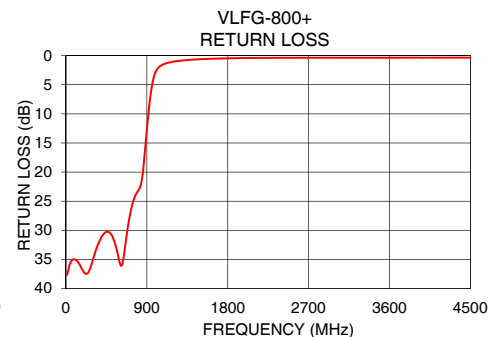
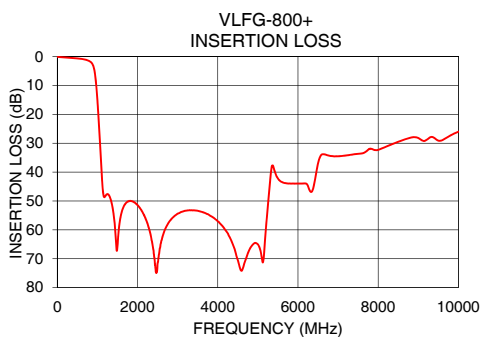
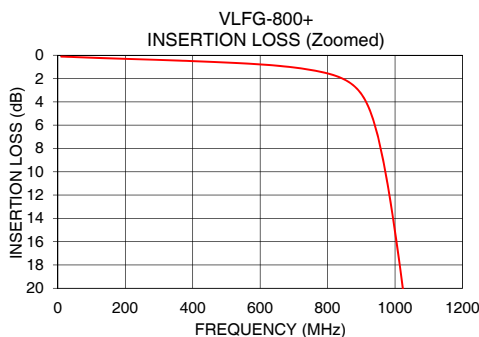
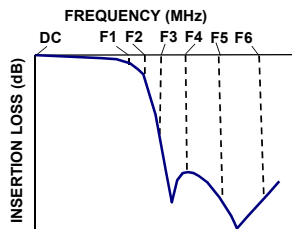
Operating Temperature	-55°C to 125°C
Storage Temperature	-55°C to 125°C
RF Power Input*	4.5W max. @25°C

*Passband rating, derate linearly to 0.75W at 125°C ambient
Permanent damage may occur if any of these limits are exceeded.

Typical Performance Data at 25°C

Frequency (MHz)	Insertion Loss (dB)	Return Loss (dB)
10	0.12	37.70
100	0.21	35.00
200	0.31	37.21
300	0.40	35.06
500	0.63	30.62
700	1.05	28.36
800	1.56	23.28
900	3.33	12.72
975	10.60	3.81
1025	20.42	2.11
1065	29.93	1.63
1150	47.94	1.18
1400	54.20	0.70
2000	51.41	0.41
3000	54.42	0.36
4500	70.49	0.35
6000	43.98	0.41
8000	32.29	1.00
9000	28.20	0.64
10000	26.03	0.91

Typical Frequency Response



Notes

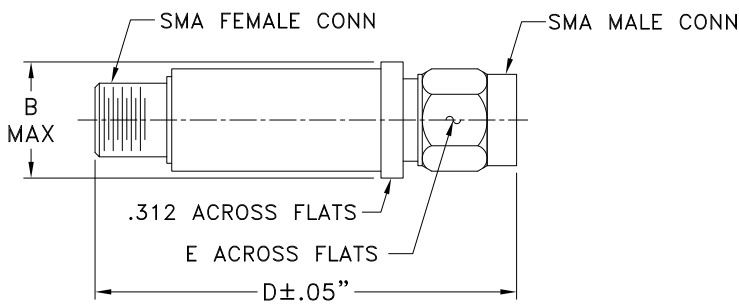
- A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's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

PORT - 1	SMA-Male
PORT - 2	SMA-Female

Outline Drawing



Outline Dimensions (inch mm)

B	D	E	wt.
.410	1.43	.312	grams
10.41	36.32	7.92	10

Note: Please refer to case style drawing for details

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

Typical Performance Data

FREQ.	INSERTION LOSS			INPUT RETURN LOSS			OUTPUT RETURN LOSS		
(MHz)	(dB)			(dB)			(dB)		
	@-55°C	@+25°C	@+125°C	@-55°C	@+25°C	@+125°C	@-55°C	@+25°C	@+125°C
10	0.12	0.14	0.11	42.83	39.40	37.55	41.28	38.58	37.93
100	0.17	0.21	0.13	34.90	37.18	32.94	31.38	31.95	32.89
200	0.24	0.29	0.22	37.56	33.94	35.55	27.44	26.33	24.94
250	0.27	0.33	0.27	33.75	32.56	35.01	25.41	24.74	23.49
300	0.32	0.38	0.32	28.49	30.63	33.03	23.32	23.50	22.96
350	0.36	0.43	0.37	25.79	29.62	30.52	21.94	22.78	22.72
400	0.41	0.48	0.43	24.73	28.78	29.46	21.64	22.71	22.54
500	0.51	0.59	0.56	25.90	29.14	32.79	23.71	24.56	24.83
550	0.57	0.66	0.64	27.97	31.03	37.15	26.80	27.57	28.27
600	0.64	0.74	0.73	30.64	33.63	40.51	33.15	34.75	35.26
650	0.73	0.84	0.85	32.88	34.71	40.32	36.52	38.94	38.25
700	0.86	0.98	1.00	30.08	31.16	34.42	26.95	27.54	28.18
750	1.04	1.17	1.20	27.63	28.47	30.15	22.92	23.17	23.10
780	1.19	1.32	1.36	27.40	27.73	28.54	21.50	21.49	21.21
800	1.31	1.44	1.50	27.79	27.46	27.50	20.80	20.61	20.19
820	1.46	1.59	1.65	26.80	26.36	26.13	19.88	19.67	19.18
850	1.79	1.91	1.97	20.95	21.91	22.33	17.18	17.48	17.32
900	3.08	2.99	2.96	10.93	12.76	13.98	10.70	12.03	12.73
920	4.18	3.86	3.72	7.94	9.67	10.92	8.39	9.80	10.72
960	8.22	7.16	6.51	3.94	5.07	6.05	5.28	6.37	7.40
1000	14.82	13.05	11.71	2.20	2.78	3.33	3.82	4.57	5.48
1020	18.80	16.78	15.15	1.80	2.22	2.62	3.36	4.02	4.86
1050	25.32	23.02	21.06	1.45	1.75	2.01	2.78	3.36	4.07
1090	34.40	31.98	29.83	1.20	1.44	1.60	2.14	2.62	3.15
1150	44.94	43.87	42.58	0.97	1.18	1.27	1.46	1.80	2.12
1200	47.21	47.26	47.30	0.86	1.04	1.10	1.09	1.36	1.57
1250	47.69	47.69	47.71	0.77	0.94	0.98	0.84	1.05	1.21
1400	56.59	54.79	53.39	0.58	0.73	0.73	0.44	0.56	0.66
1500	61.91	65.73	67.19	0.49	0.63	0.63	0.33	0.42	0.51
1550	56.08	57.78	59.97	0.45	0.59	0.58	0.28	0.37	0.46
2000	53.26	52.62	52.25	0.27	0.38	0.36	0.12	0.19	0.29
3000	49.09	49.70	50.14	0.15	0.24	0.22	0.00	0.09	0.21
3200	48.24	48.72	48.79	0.14	0.23	0.21	0.00	0.09	0.19
3220	48.10	48.59	48.65	0.14	0.22	0.20	0.01	0.08	0.19
3280	47.96	48.18	48.41	0.14	0.22	0.20	0.01	0.08	0.20
3400	47.54	47.87	48.16	0.12	0.21	0.20	0.02	0.07	0.20
3600	47.37	47.65	47.68	0.12	0.20	0.19	0.04	0.06	0.20
3800	47.52	47.62	47.77	0.11	0.19	0.18	0.06	0.06	0.21
4000	47.80	47.95	48.02	0.09	0.18	0.19	0.08	0.04	0.21
4200	48.14	48.30	48.09	0.08	0.18	0.18	0.09	0.04	0.23
4400	48.63	48.72	49.03	0.08	0.18	0.18	0.10	0.04	0.26
4420	48.48	48.81	49.17	0.07	0.17	0.18	0.10	0.04	0.26
4500	48.59	48.57	49.48	0.07	0.17	0.19	0.10	0.04	0.26
5000	47.66	49.13	49.36	0.06	0.18	0.21	0.11	0.05	0.33
5200	41.62	43.81	45.96	0.07	0.19	0.23	0.04	0.07	0.38
5400	41.81	37.24	35.22	0.08	0.23	0.30	0.02	0.31	0.83
5600	49.76	48.23	46.30	0.07	0.22	0.28	0.09	0.08	0.46
5800	53.76	53.31	51.33	0.09	0.23	0.32	0.11	0.06	0.43
6000	52.89	52.43	50.76	0.14	0.28	0.37	0.08	0.07	0.48
6200	47.34	50.72	52.27	0.32	0.40	0.45	0.06	0.10	0.51
6500	33.37	34.01	37.00	0.87	1.40	1.30	0.03	0.12	0.55
7000	34.68	35.40	35.11	0.31	0.49	0.65	0.02	0.17	0.58
7500	34.80	34.89	34.53	2.49	1.59	1.31	0.22	0.30	0.68
8000	32.16	32.68	33.65	0.52	0.90	1.41	0.29	0.49	0.96
8500	28.81	29.67	30.76	0.27	0.53	0.80	0.42	0.49	0.80
9000	27.42	27.27	28.00	0.25	0.50	0.76	4.32	2.24	1.68
9300	28.72	27.99	28.67	0.29	0.52	0.79	2.54	4.34	5.92
9500	30.26	30.43	28.97	0.26	0.53	0.82	1.32	2.02	3.33
9800	27.52	28.39	29.62	0.28	0.50	0.82	1.34	1.39	1.95
10000	26.51	26.88	27.59	0.32	0.51	0.81	2.92	1.99	2.27

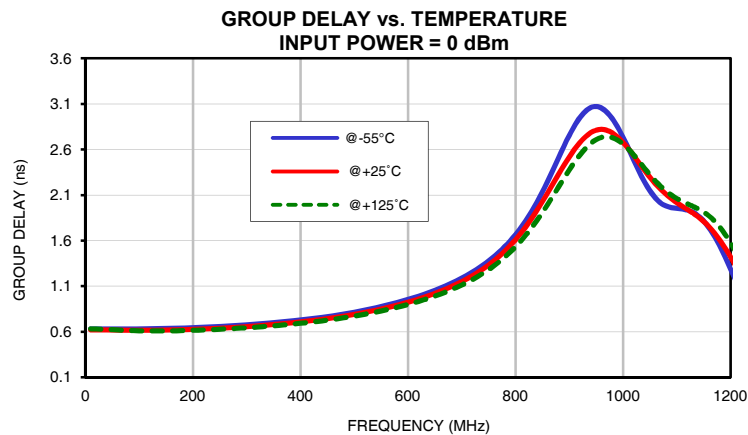
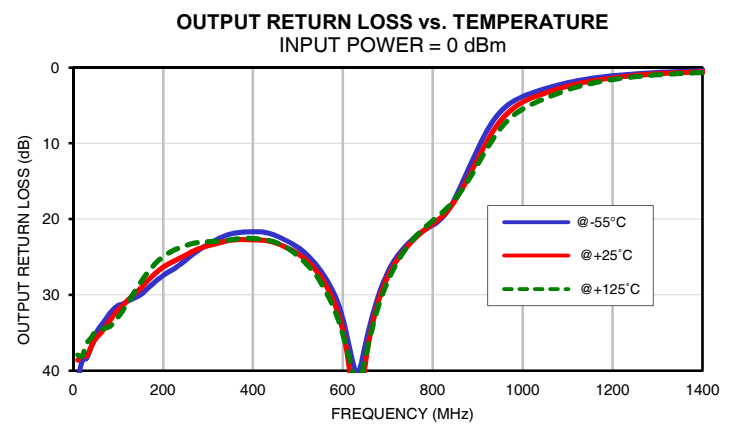
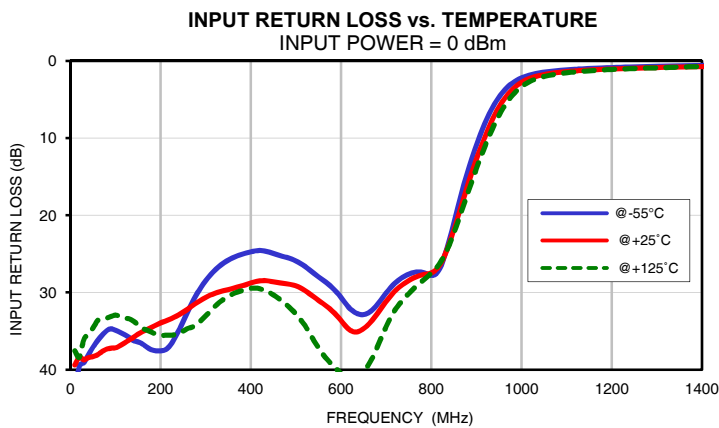
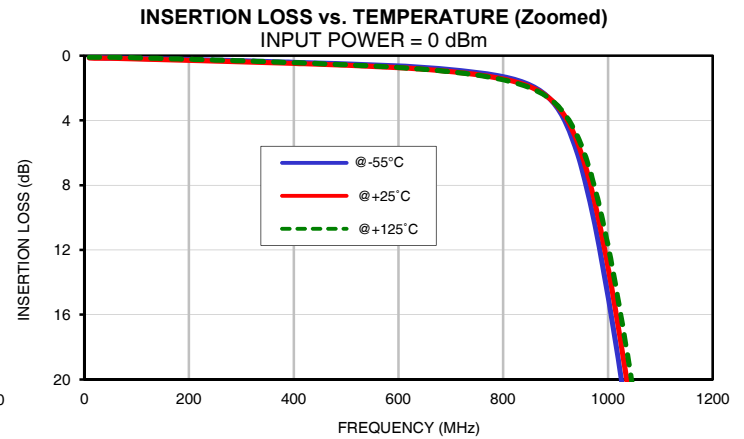
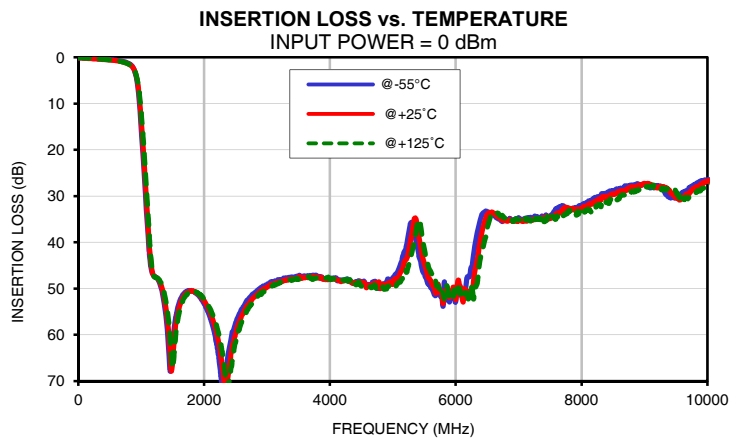
* Temperature test data was based on the underlying chip.

Typical Performance Data

FREQ.	GROUP DELAY		
(MHz)	(nsec)		
	@-55°C	@+25°C	@+125°C
10	0.63	0.62	0.63
30	0.63	0.62	0.63
50	0.63	0.62	0.62
70	0.63	0.62	0.62
90	0.63	0.62	0.61
110	0.63	0.61	0.61
130	0.63	0.62	0.61
150	0.63	0.62	0.61
170	0.64	0.62	0.61
190	0.64	0.62	0.61
210	0.65	0.63	0.62
230	0.65	0.63	0.62
250	0.66	0.64	0.63
270	0.66	0.64	0.63
290	0.67	0.65	0.64
310	0.68	0.66	0.65
330	0.69	0.67	0.66
350	0.70	0.68	0.66
370	0.71	0.69	0.67
390	0.72	0.70	0.69
410	0.73	0.71	0.70
430	0.75	0.73	0.71
450	0.76	0.74	0.73
470	0.78	0.76	0.74
490	0.80	0.78	0.76
510	0.83	0.80	0.78
530	0.85	0.82	0.80
550	0.88	0.85	0.83
570	0.90	0.88	0.85
590	0.94	0.91	0.88
610	0.97	0.94	0.92
630	1.01	0.98	0.95
650	1.05	1.02	0.99
670	1.10	1.07	1.03
690	1.16	1.12	1.08
710	1.22	1.18	1.14
730	1.29	1.25	1.21
750	1.38	1.33	1.28
770	1.48	1.43	1.37
790	1.60	1.54	1.47
800	1.66	1.61	1.53

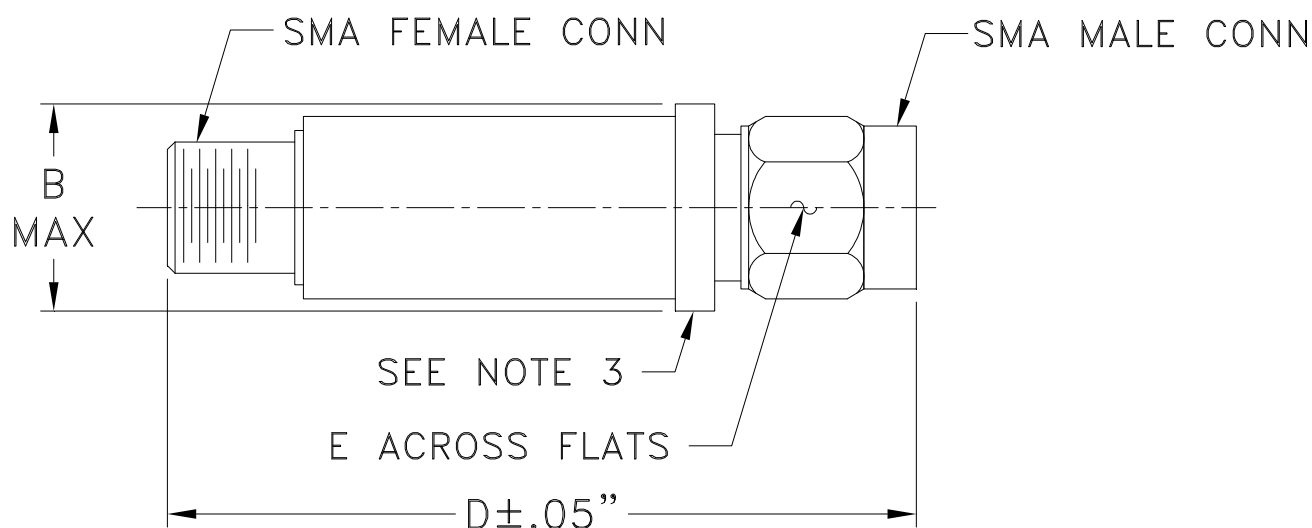
* Temperature test data was based on the underlying chip

Typical Performance Curves



* Temperature test data was based on the underlying chip

Outline Dimensions



CASE #.	A	B	C	D	E	WT GRAMS
FF704	--	.410 (10.41)	--	1.43 (36.32)	.312 (7.92)	10.0

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 125° C Ambient Environment	Individual Model Data Sheet
Storage Temperature	-55° to 125° C Ambient Environment	Individual Model Data Sheet
Humidity	90 to 95% RH, 240 hours, 50°C	MIL-STD-202, Method 103, Condition A, Except 50°C and end-point electrical test done within 12 hours
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	50g, 11 ms, 1/2-sine, 18 shocks: 3 each direction, each of 3 axes	MIL-STD-202, Method 213, Condition A
Thermal Shock	-55° to 125°C, 100 cycles	MIL-STD-202, Method 107, Condition A-3, Except +125°C