

Coaxial Low Pass Filter

VLFG-1525+

50Ω DC to 1525 MHz



Generic photo used for illustration purposes only
CASE STYLE: FF704

The Big Deal

- Excellent power handling, 5.5W
- Temperature stable
- Rugged unibody construction
- Good rejection, 42 dB typical

Product Overview

VLFG-1525+ is a 50Ω low pass filter built in rugged unibody construction. Covering DC-1525 MHz bandwidth, these units offer good matching within the passband and good rejection in stopband. VLFG-1525+ offer low insertion loss, and excellent power handling capability. It handles up to 5.5W 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.
5.5W 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

50Ω

DC to 1525 MHz

VLFG-1525+



Features

- Low loss, 1dB typ.
- High rejection 42dB typ.
- Excellent power handling, 5.5W
- Temperature stable
- Connectorized package
- Rugged unibody construction

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+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

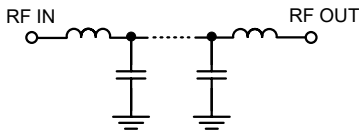
Electrical Specifications at 25°C

Parameter	F#	Frequency (MHz)	Min.	Typ.	Max.	Unit
Pass Band	Insertion Loss	DC-F1	DC - 1525	—	1.0	1.8 dB
	Freq. Cut-Off	F2*	1760	—	3.0	dB
	Return Loss	DC-F1	DC - 1525	—	16	dB
Stop Band	Rejection Loss	F3-F4	2125 - 2350	20	40	dB
		F4-F5	2350 - 7000	33	42	dB
		F5-F6	7000 - 12000	—	28	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*	5.5W max. @25°C

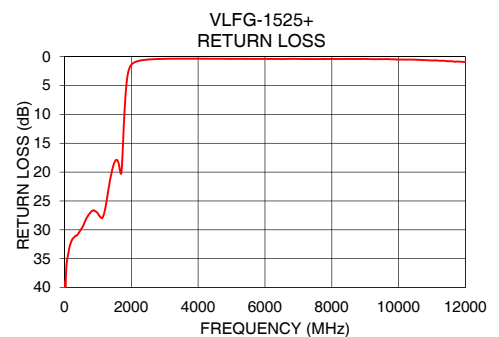
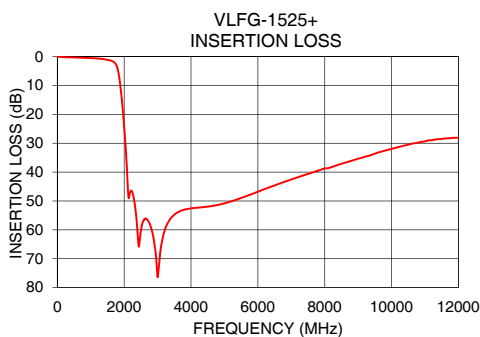
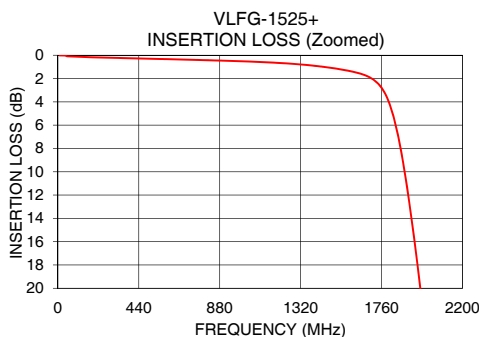
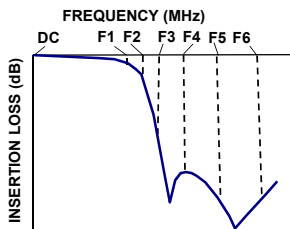
*Passband rating, derate linearly to 1W at 125°C ambient

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	0.01	38.94
100	0.12	34.56
300	0.22	31.22
500	0.30	29.90
700	0.38	27.59
1000	0.52	27.19
1200	0.66	26.86
1525	1.18	18.01
1760	2.79	13.96
1890	10.46	3.20
1970	19.92	1.66
2040	30.55	1.18
2125	48.30	0.90
2350	54.07	0.60
3000	76.37	0.37
5000	50.82	0.38
7000	42.57	0.39
8000	38.75	0.40
10000	31.97	0.50
12000	28.10	0.90

Typical Frequency Response



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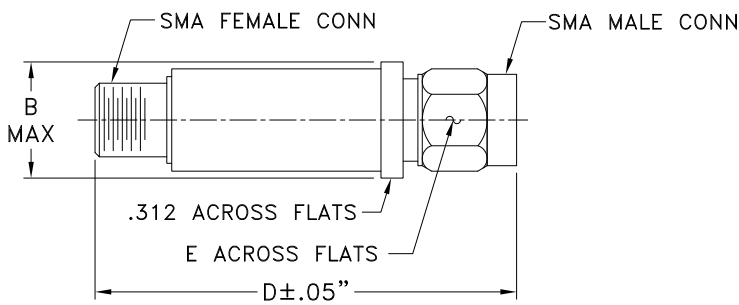
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VLFG-1525+
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Coaxial Connections

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

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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	0.09	0.11	0.13	40.37	39.96	38.75	39.81	39.34	38.07
100	0.12	0.15	0.17	36.17	34.99	34.32	34.98	33.76	33.03
200	0.15	0.19	0.23	31.34	31.97	32.48	29.53	29.52	29.48
250	0.17	0.21	0.25	30.10	31.22	32.25	27.91	28.11	28.23
300	0.18	0.22	0.27	29.31	30.62	32.02	26.71	26.92	27.09
350	0.19	0.24	0.29	28.80	30.08	31.68	25.79	25.92	26.07
400	0.20	0.26	0.32	28.32	29.51	31.15	25.01	25.05	25.15
500	0.23	0.29	0.36	27.17	28.29	29.71	23.71	23.69	23.70
550	0.24	0.31	0.38	26.50	27.62	28.88	23.17	23.18	23.17
600	0.25	0.32	0.40	25.90	27.01	28.10	22.73	22.78	22.77
650	0.27	0.34	0.42	25.37	26.42	27.38	22.41	22.50	22.49
700	0.28	0.36	0.45	24.92	25.91	26.73	22.24	22.35	22.35
750	0.30	0.38	0.47	24.60	25.52	26.23	22.19	22.32	22.32
800	0.31	0.40	0.50	24.41	25.28	25.89	22.32	22.48	22.48
850	0.33	0.42	0.52	24.41	25.22	25.78	22.66	22.84	22.84
1000	0.38	0.49	0.60	25.78	26.53	27.21	25.50	25.89	26.07
1300	0.57	0.72	0.89	27.66	27.08	26.80	26.65	26.08	25.57
1500	0.89	1.09	1.33	19.55	19.73	19.97	18.43	18.36	18.23
1525	0.94	1.16	1.42	19.20	19.50	19.91	18.05	18.04	17.95
1700	1.72	2.19	2.79	18.65	18.01	16.46	15.12	14.24	13.10
1760	2.74	3.59	4.69	11.92	10.42	8.99	10.49	9.39	8.42
1800	4.22	5.53	7.09	7.66	6.56	5.70	7.31	6.52	5.98
1900	12.69	15.14	17.68	2.47	2.32	2.28	3.10	3.12	3.27
1950	18.96	21.88	24.89	1.58	1.60	1.69	2.32	2.48	2.71
2000	26.63	30.21	33.78	1.15	1.24	1.37	1.89	2.08	2.34
2125	44.96	44.95	44.63	0.71	0.83	0.98	1.27	1.45	1.67
2150	44.94	44.47	44.45	0.66	0.79	0.93	1.18	1.36	1.57
2200	44.08	44.64	45.54	0.58	0.71	0.85	1.02	1.19	1.39
2250	45.41	46.67	48.19	0.52	0.64	0.79	0.89	1.05	1.24
2300	48.25	50.11	52.25	0.46	0.59	0.74	0.78	0.94	1.11
2350	52.53	55.16	57.96	0.42	0.54	0.69	0.68	0.84	1.00
3000	70.47	67.69	65.58	0.17	0.28	0.41	0.25	0.34	0.42
3200	59.51	58.86	58.40	0.14	0.25	0.37	0.21	0.29	0.37
3220	59.01	58.43	58.02	0.14	0.25	0.37	0.21	0.29	0.37
3280	57.82	57.41	57.15	0.13	0.24	0.36	0.20	0.28	0.35
3400	56.35	56.18	56.11	0.12	0.23	0.34	0.18	0.26	0.33
3600	55.53	55.56	55.68	0.11	0.21	0.31	0.16	0.24	0.31
3800	55.88	56.05	56.28	0.10	0.20	0.29	0.14	0.22	0.30
4000	57.00	57.23	57.53	0.09	0.18	0.27	0.12	0.21	0.30
4200	58.73	59.12	59.50	0.08	0.17	0.26	0.11	0.20	0.30
4400	61.01	61.44	61.93	0.07	0.16	0.24	0.10	0.20	0.31
4600	64.45	64.99	65.81	0.06	0.15	0.23	0.09	0.20	0.32
4800	68.72	69.66	69.25	0.06	0.15	0.23	0.08	0.20	0.34
5000	69.81	70.14	69.60	0.05	0.14	0.23	0.08	0.20	0.36
5200	69.34	68.87	69.10	0.05	0.14	0.23	0.07	0.20	0.38
5400	69.60	69.56	69.44	0.04	0.14	0.23	0.07	0.21	0.40
5600	66.43	66.78	66.84	0.03	0.14	0.24	0.07	0.22	0.43
5800	64.37	63.84	63.22	0.03	0.14	0.26	0.07	0.23	0.45
6000	66.08	65.31	64.65	0.03	0.14	0.27	0.07	0.23	0.47
6200	61.90	61.49	59.29	0.03	0.15	0.29	0.08	0.24	0.49
6500	56.14	55.76	55.47	0.03	0.16	0.32	0.09	0.26	0.52
7000	52.24	52.09	51.35	0.04	0.19	0.39	0.10	0.28	0.55
7500	47.96	47.64	47.44	0.06	0.23	0.46	0.11	0.29	0.56
8000	42.31	41.64	41.54	0.10	0.27	0.54	0.16	0.33	0.56
8500	40.23	40.12	39.98	0.11	0.30	0.59	0.10	0.28	0.50
9000	37.49	37.34	37.47	0.13	0.33	0.63	0.08	0.25	0.44
9500	35.38	35.22	35.41	0.14	0.34	0.63	0.06	0.22	0.37
10000	33.82	33.81	33.91	0.14	0.34	0.60	0.04	0.19	0.32
11000	30.90	30.94	31.09	0.15	0.34	0.54	0.01	0.18	0.34
12000	29.24	29.41	29.55	0.17	0.37	0.55	0.01	0.22	0.49

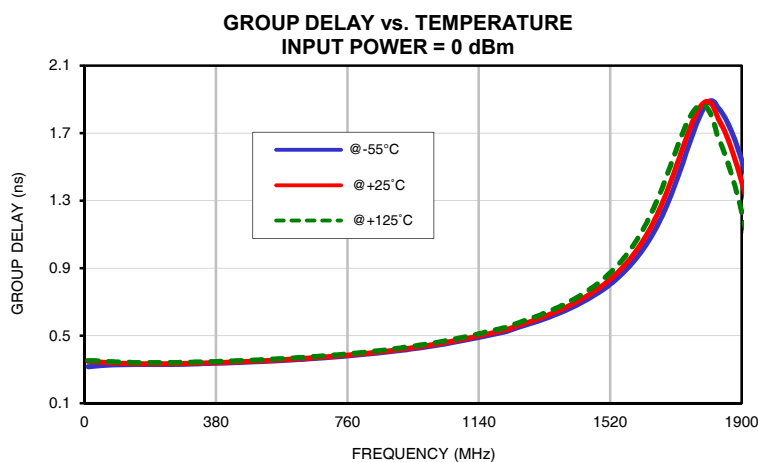
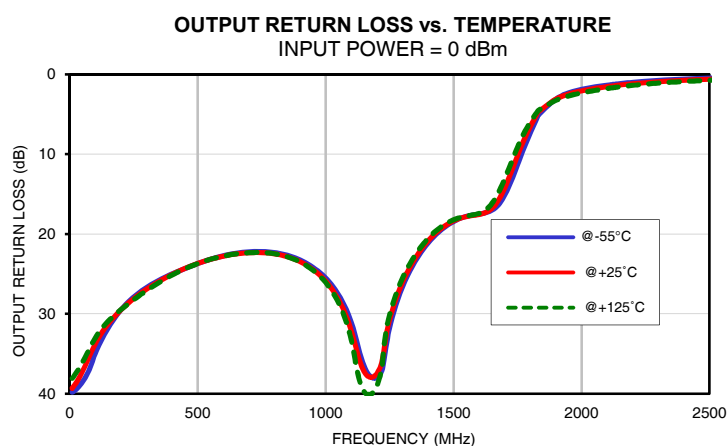
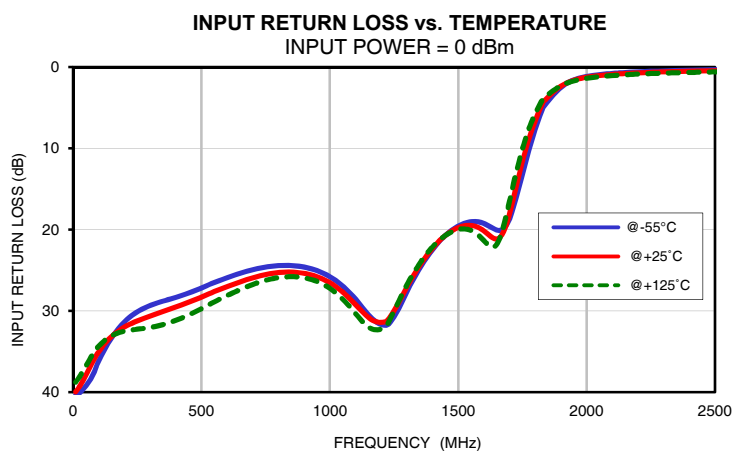
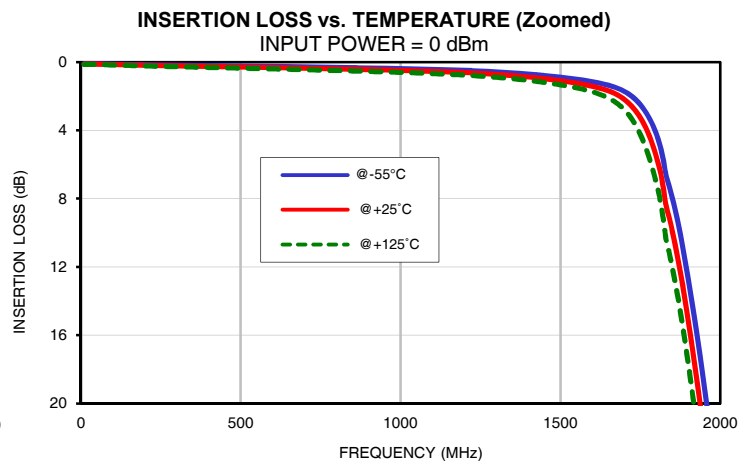
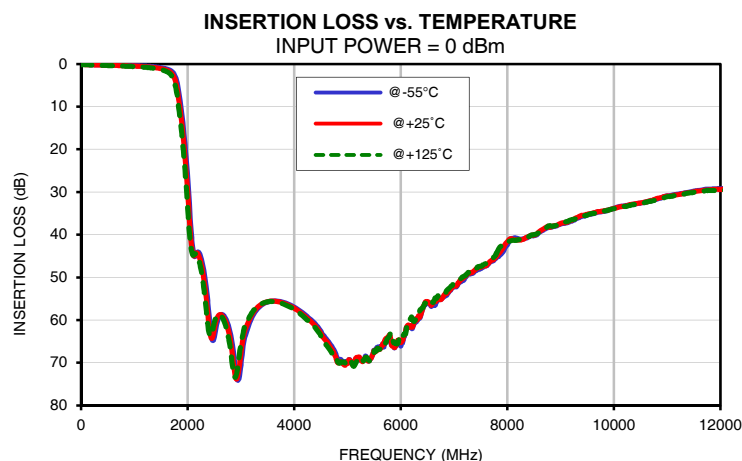
* Temperature test data was based on the underlying chip

Typical Performance Data

FREQ.	GROUP DELAY		
(MHz)	(nsec)		
	@-55°C	@+25°C	@+125°C
10	0.32	0.35	0.35
50	0.32	0.34	0.35
100	0.33	0.34	0.34
110	0.33	0.34	0.34
140	0.33	0.33	0.34
170	0.33	0.33	0.34
200	0.33	0.33	0.34
230	0.33	0.33	0.34
260	0.33	0.33	0.34
290	0.33	0.33	0.34
320	0.33	0.34	0.34
350	0.33	0.34	0.34
380	0.34	0.34	0.35
410	0.34	0.34	0.35
440	0.34	0.34	0.35
470	0.34	0.35	0.35
500	0.35	0.35	0.36
530	0.35	0.35	0.36
560	0.35	0.36	0.36
590	0.35	0.36	0.37
620	0.36	0.36	0.37
650	0.36	0.37	0.37
680	0.37	0.37	0.38
710	0.37	0.38	0.38
740	0.38	0.38	0.39
770	0.38	0.39	0.39
800	0.39	0.39	0.40
830	0.39	0.40	0.41
850	0.40	0.40	0.41
900	0.41	0.41	0.42
950	0.42	0.43	0.44
1000	0.44	0.44	0.45
1050	0.45	0.46	0.47
1100	0.47	0.48	0.49
1150	0.49	0.50	0.52
1200	0.52	0.53	0.54
1250	0.55	0.56	0.57
1300	0.58	0.59	0.61
1400	0.66	0.68	0.70
1500	0.77	0.80	0.84
1525	0.81	0.84	0.88

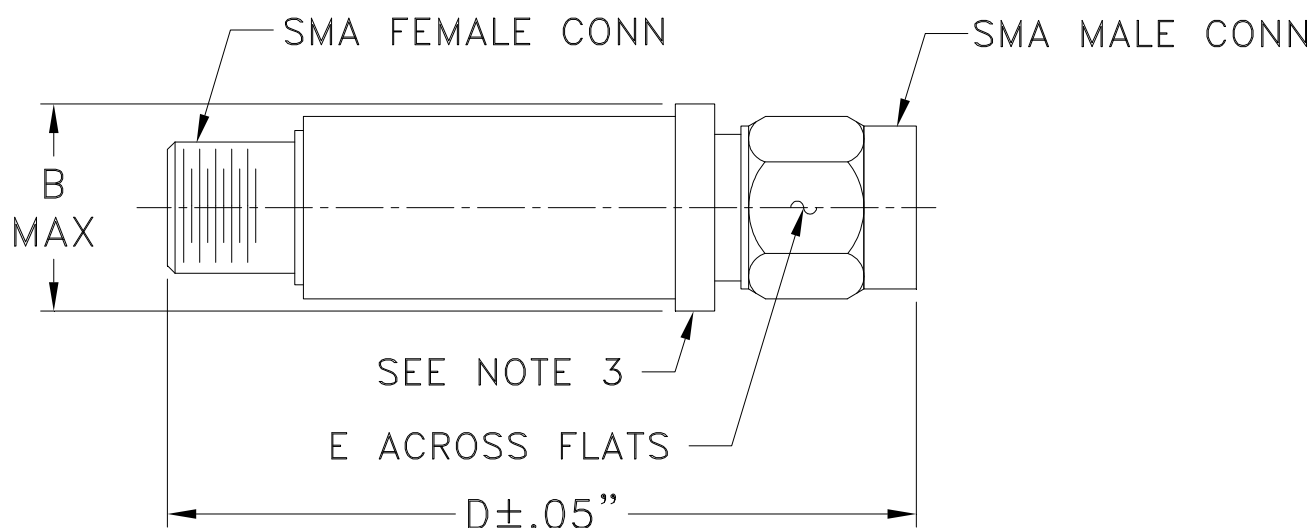
* Temperature test data was based on the underlying chip

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. $\pm .04$; 3Pl. $\pm .030$

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 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