

Coaxial Low Pass Filter

VLFG-1325+

50Ω DC to 1325 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, 48 dB typical

Product Overview

VLFG-1325+ is a 50Ω low pass filter built in rugged unibody construction. Covering DC-1325 MHz bandwidth, these units offer good matching within the passband and good rejection in stopband. VLFG-1325+ 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 1325 MHz

VLFG-1325+



Features

- Low loss, 1.1dB typ.
- High rejection 48dB 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

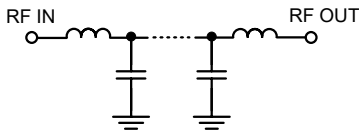
Electrical Specifications at 25°C

Parameter	F#	Frequency (MHz)	Min.	Typ.	Max.	Unit
Pass Band	Insertion Loss	DC-F1	DC - 1325	—	1.1	dB
	Freq. Cut-Off	F2*	1550	—	3.0	dB
	Return Loss	DC-F1	DC - 1325	—	21	dB
Stop Band	Rejection Loss	F3-F4	1900 - 2150	20	40	dB
		F4-F5	2150 - 6500	37	48	dB
		F5-F6	6500 - 11600	—	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

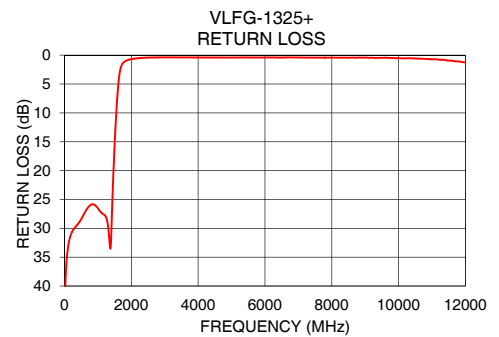
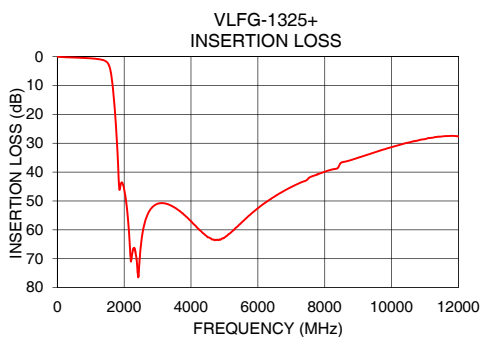
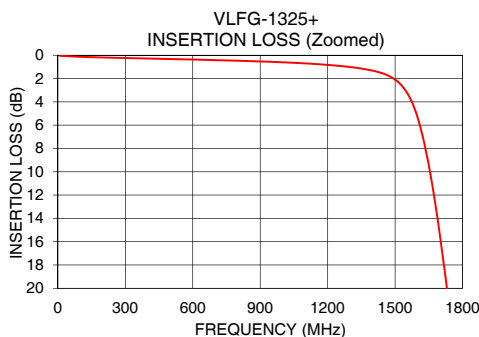
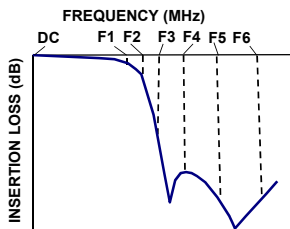
*Passband rating, derate linearly to 1W at 125°C ambient

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	0.06	42.51
100	0.13	33.57
300	0.24	29.96
500	0.32	28.42
700	0.42	26.42
900	0.54	25.94
1000	0.61	26.52
1325	1.07	30.75
1550	3.12	10.00
1655	9.99	2.97
1730	19.96	1.54
1790	30.84	1.15
1900	44.15	0.84
2150	61.68	0.56
3000	50.97	0.38
5000	62.66	0.41
6500	48.47	0.42
8000	39.89	0.42
10000	31.38	0.54
11600	27.52	0.98

Typical Frequency Response



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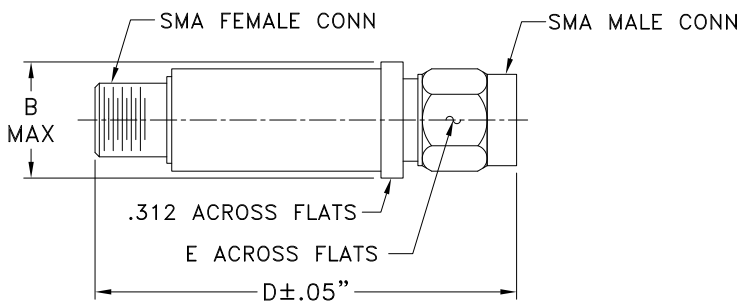


www.minicircuits.com P.O. Box 350166, Brooklyn, NY 11235-0003 (718) 934-4500 sales@minicircuits.com

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	0.12	0.14	0.15	40.26	40.31	39.07	41.01	41.58	40.18
100	0.16	0.18	0.21	34.89	33.92	33.43	34.48	33.49	32.88
200	0.20	0.24	0.27	29.80	30.17	30.55	28.63	28.71	28.64
250	0.22	0.26	0.30	28.41	29.11	29.82	26.91	27.18	27.22
300	0.24	0.28	0.33	27.43	28.26	29.18	25.63	25.91	25.98
350	0.25	0.30	0.35	26.67	27.53	28.51	24.63	24.87	24.92
400	0.27	0.33	0.38	25.98	26.87	27.84	23.79	23.99	24.02
500	0.30	0.37	0.43	24.67	25.65	26.51	22.44	22.64	22.65
550	0.32	0.39	0.45	24.11	25.10	25.89	21.94	22.16	22.18
600	0.34	0.41	0.48	23.70	24.65	25.38	21.60	21.81	21.85
650	0.36	0.43	0.51	23.42	24.31	24.99	21.42	21.61	21.69
700	0.37	0.45	0.53	23.26	24.10	24.74	21.38	21.57	21.67
750	0.39	0.47	0.56	23.26	24.08	24.69	21.50	21.70	21.82
800	0.41	0.50	0.59	23.45	24.26	24.86	21.85	22.07	22.22
850	0.43	0.52	0.62	23.88	24.70	25.30	22.50	22.75	22.94
1000	0.50	0.61	0.74	27.48	28.48	29.59	27.34	27.87	28.50
1325	0.86	1.05	1.28	26.08	26.36	26.35	23.76	23.40	22.74
1400	1.03	1.26	1.56	25.17	25.70	25.69	22.14	21.80	20.98
1550	2.01	2.58	3.41	14.15	12.71	11.17	13.45	12.32	11.06
1700	9.45	11.85	14.82	2.98	2.69	2.53	4.37	4.30	4.43
1775	18.91	22.44	26.71	1.51	1.55	1.63	3.00	3.14	3.37
1820	27.14	31.72	36.99	1.17	1.27	1.38	2.46	2.61	2.82
1900	42.64	44.38	44.65	0.89	1.01	1.14	1.80	1.95	2.13
2000	45.96	46.53	47.72	0.69	0.82	0.94	1.22	1.36	1.52
2100	52.78	55.75	59.03	0.55	0.68	0.81	0.88	1.01	1.15
2150	59.82	62.58	63.55	0.50	0.63	0.75	0.76	0.89	1.02
2200	65.23	65.08	63.33	0.46	0.59	0.71	0.67	0.79	0.92
2230	65.87	64.16	62.12	0.43	0.56	0.68	0.63	0.75	0.86
2400	66.30	68.02	69.09	0.31	0.43	0.55	0.45	0.56	0.66
2500	70.47	67.69	64.07	0.25	0.37	0.49	0.39	0.49	0.58
3000	51.29	51.12	50.93	0.06	0.18	0.29	0.25	0.33	0.39
3100	51.20	51.15	51.08	0.05	0.17	0.28	0.23	0.31	0.37
3200	51.45	51.51	51.54	0.05	0.17	0.27	0.22	0.30	0.35
3220	51.54	51.62	51.67	0.05	0.17	0.27	0.22	0.30	0.35
3280	51.89	52.03	52.15	0.06	0.17	0.27	0.21	0.29	0.35
3400	52.93	53.19	53.44	0.07	0.19	0.28	0.20	0.28	0.34
3600	55.75	56.29	56.84	0.11	0.22	0.30	0.19	0.27	0.33
3800	60.55	61.67	62.96	0.15	0.25	0.33	0.18	0.26	0.33
4000	70.15	70.41	69.97	0.18	0.28	0.35	0.17	0.26	0.35
4200	66.76	64.82	62.94	0.20	0.30	0.36	0.17	0.27	0.36
4400	59.84	58.97	57.84	0.21	0.31	0.37	0.18	0.28	0.39
4600	56.03	55.45	54.83	0.22	0.32	0.37	0.18	0.29	0.42
4800	53.92	53.53	53.06	0.22	0.32	0.37	0.19	0.30	0.44
5000	52.45	52.23	51.87	0.21	0.31	0.37	0.19	0.32	0.47
5200	51.67	51.53	51.18	0.20	0.30	0.36	0.19	0.32	0.50
5400	51.32	51.19	50.91	0.18	0.29	0.36	0.19	0.33	0.52
5600	50.94	51.01	50.95	0.17	0.28	0.35	0.19	0.34	0.54
5800	51.34	51.37	50.88	0.15	0.27	0.35	0.18	0.34	0.55
6000	51.07	51.19	51.45	0.13	0.26	0.35	0.16	0.33	0.56
6200	51.68	51.88	51.65	0.11	0.25	0.35	0.16	0.34	0.57
6500	52.63	52.84	53.02	0.09	0.24	0.36	0.14	0.32	0.56
6600	54.23	54.16	54.65	0.08	0.24	0.36	0.13	0.32	0.56
6800	53.84	53.80	54.36	0.07	0.23	0.38	0.11	0.31	0.55
7000	53.38	53.18	53.29	0.07	0.24	0.39	0.10	0.30	0.54
7200	53.99	53.95	53.84	0.06	0.24	0.41	0.08	0.27	0.51
7400	52.59	50.86	48.85	0.06	0.24	0.43	0.06	0.26	0.52
7600	45.65	41.75	39.90	0.07	0.26	0.46	0.10	0.39	0.66
8000	42.45	42.95	43.30	0.06	0.26	0.49	0.03	0.15	0.35
10000	33.79	33.84	33.94	0.20	0.42	0.64	0.25	0.09	0.02
11600	29.64	29.83	30.06	0.34	0.57	0.75	0.17	0.04	0.25

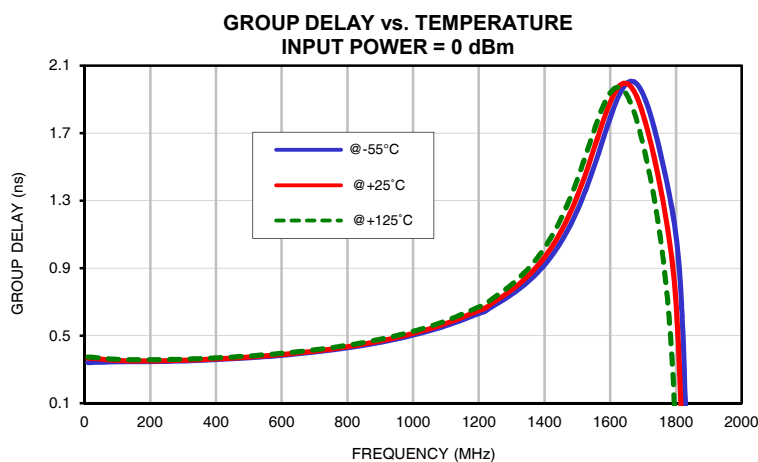
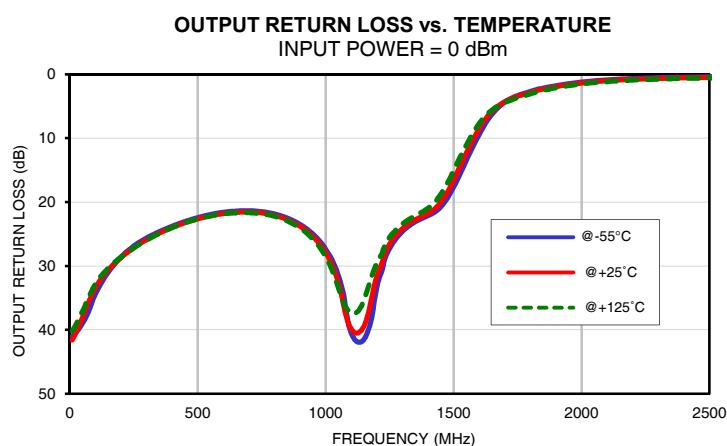
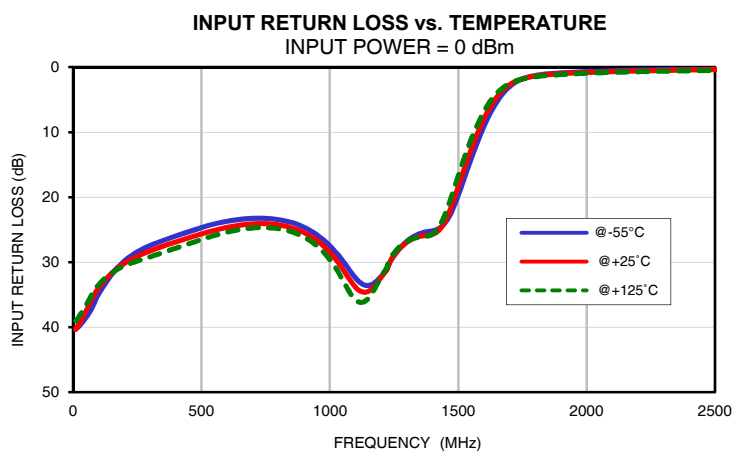
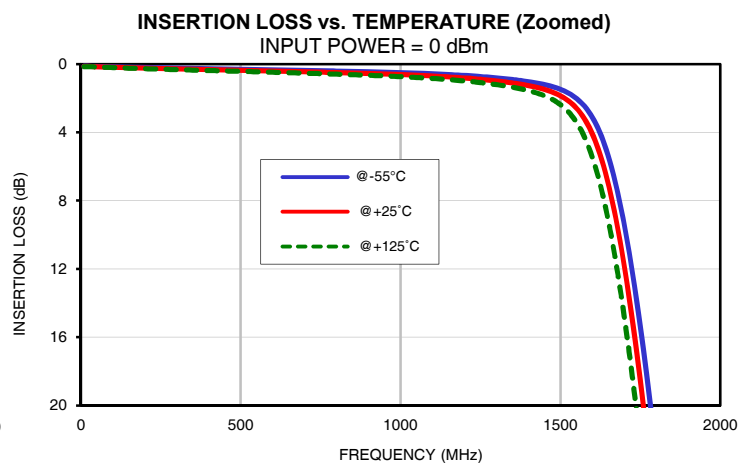
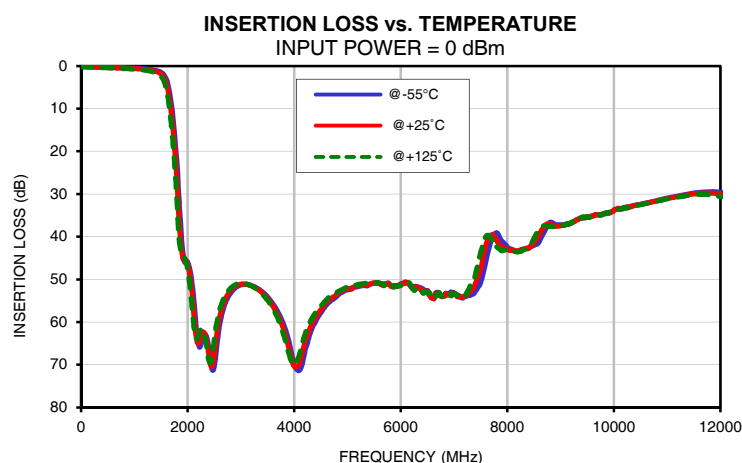
* Temperature test data was based on the underlying chip.

Typical Performance Data

FREQ.	GROUP DELAY		
(MHz)	(nsec)		
	@-55°C	@+25°C	@+125°C
10	0.34	0.37	0.37
50	0.34	0.36	0.37
80	0.34	0.36	0.36
110	0.35	0.35	0.36
140	0.35	0.35	0.36
170	0.35	0.35	0.36
200	0.35	0.35	0.36
230	0.35	0.35	0.36
260	0.35	0.35	0.36
290	0.35	0.35	0.36
320	0.35	0.36	0.36
350	0.35	0.36	0.36
380	0.36	0.36	0.37
410	0.36	0.36	0.37
440	0.36	0.37	0.37
470	0.37	0.37	0.38
500	0.37	0.37	0.38
530	0.37	0.38	0.38
560	0.38	0.38	0.39
590	0.38	0.39	0.39
620	0.39	0.39	0.40
650	0.39	0.40	0.40
680	0.40	0.40	0.41
710	0.40	0.41	0.42
740	0.41	0.42	0.43
770	0.42	0.43	0.43
800	0.43	0.43	0.44
830	0.44	0.44	0.45
860	0.45	0.45	0.46
890	0.46	0.46	0.47
920	0.47	0.48	0.49
950	0.48	0.49	0.50
980	0.49	0.50	0.51
1010	0.51	0.52	0.53
1040	0.52	0.53	0.55
1100	0.56	0.57	0.59
1110	0.57	0.58	0.60
1200	0.63	0.65	0.67
1260	0.69	0.72	0.74
1300	0.74	0.77	0.80
1325	0.78	0.81	0.85

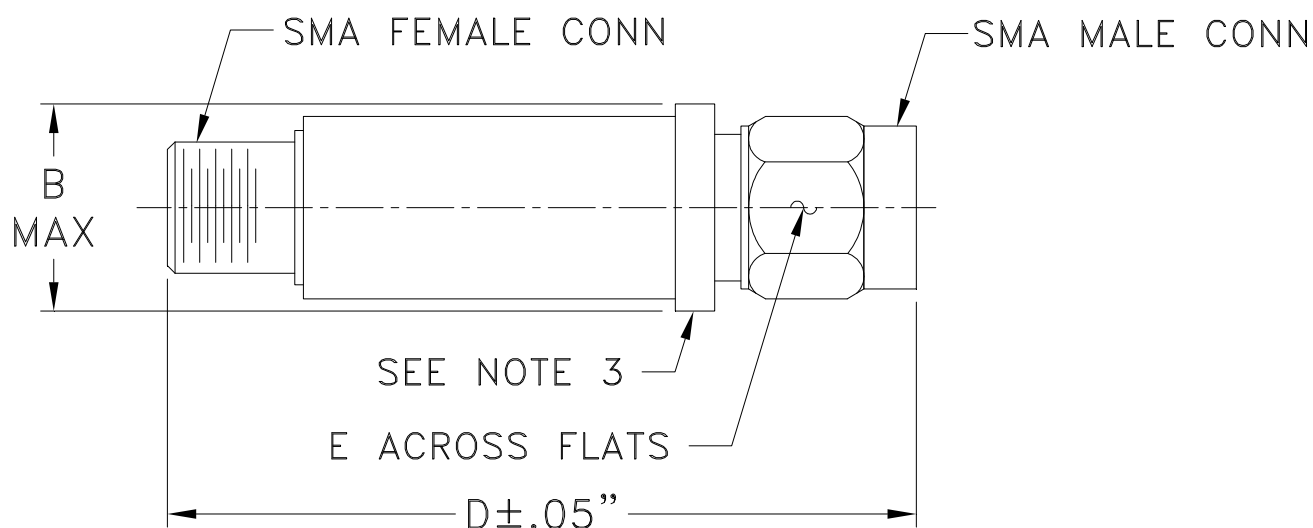
* Temperature test data was based on the underlying chip.

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