

Coaxial Low Pass Filter

VLFG-1575+

50Ω DC to 1575 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, 45 dB typical

Product Overview

VLFG-1575+ is a 50Ω low pass filter built in rugged unibody construction. Covering DC-1575 MHz bandwidth, these units offer good matching within the passband and good rejection in stopband. VLFG-1575+ 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



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+RoHS Compliant

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

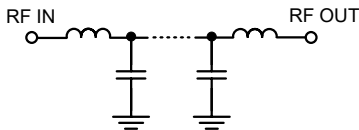
Features

- Low loss, 1.1 dB typical
- Good rejection 45 dB typical
- Excellent power handling, 5.5W
- Temperature stable
- Connectorized package
- Rugged unibody construction

Applications

- Military radar applications
- Test and measurement
- Telecommunication and broadband wireless applications

Functional Schematic



Electrical Specifications at 25°C

Parameter	F#	Frequency (MHz)	Min.	Typ.	Max.	Unit
Pass Band	Insertion Loss	DC-F1	DC - 1575	—	1.1	1.8 dB
	Freq. Cut-Off	F2*	1850	—	3.0	dB
	Return Loss	DC-F1	DC - 1575	—	15	dB
Stop Band	Rejection Loss	F3-F4	2175 - 2400	20	38	dB
		F4-F5	2400 - 7000	36	45	dB
		F5-F6	7000 - 12000	—	35	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.

Maximum Ratings

Operating Temperature	-55°C to 125°C
Storage Temperature	-55°C to 125°C
RF Power Input*	5.5W max. @25°C

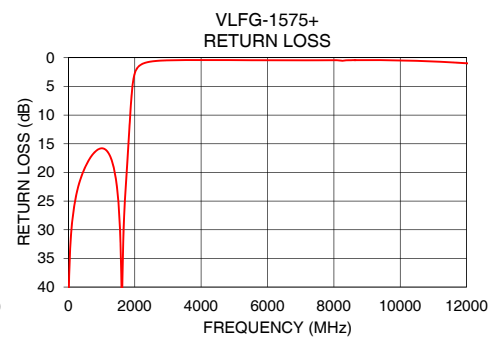
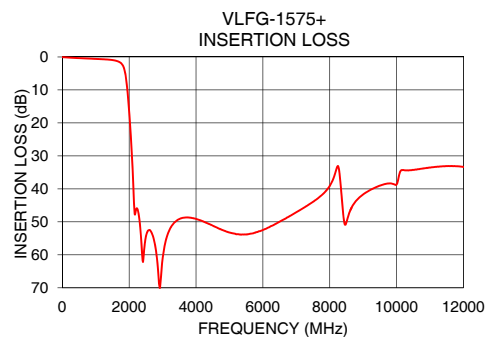
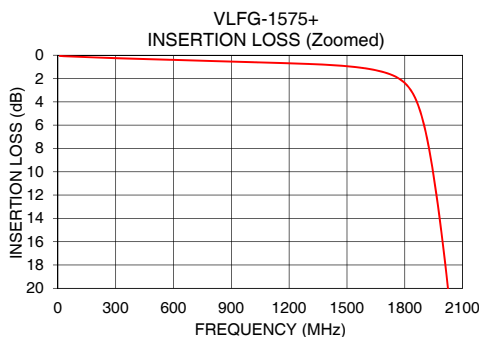
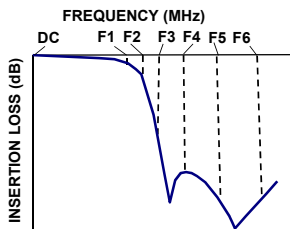
*Passband rating, derate linearly to 1W at 125°C ambient

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	41.92
100	0.13	29.52
1000	0.59	15.80
1100	0.64	15.95
1400	0.82	20.07
1500	0.94	24.62
1575	1.08	33.09
1850	3.53	11.28
1960	11.49	3.78
2035	21.64	2.19
2100	33.33	1.61
2175	47.80	1.25
2400	61.50	0.76
3000	61.27	0.45
7000	47.10	0.44
8000	39.12	0.43
9000	41.67	0.41
10000	38.68	0.47
11000	33.55	0.65
12000	33.35	0.97

Typical Frequency Response



Notes

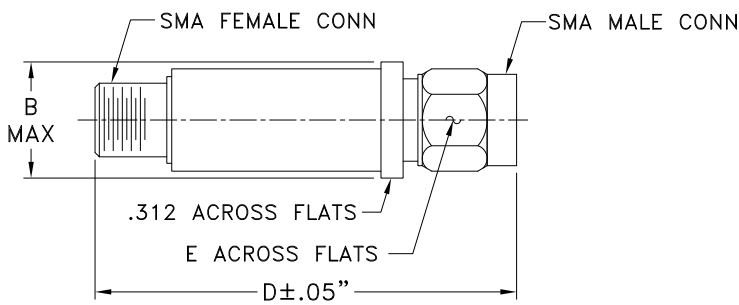
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Coaxial Connections

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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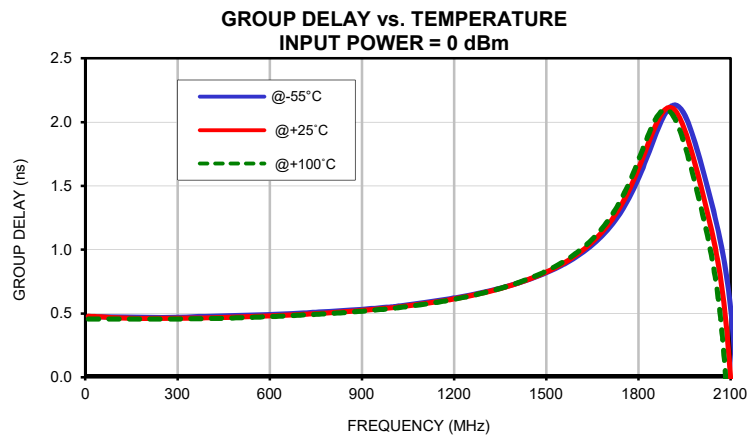
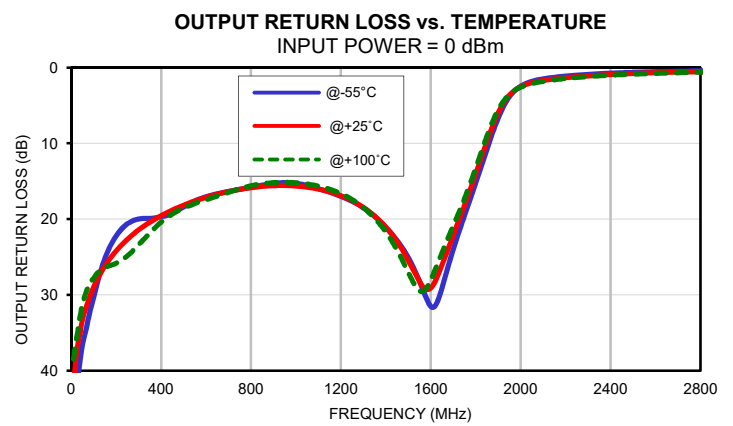
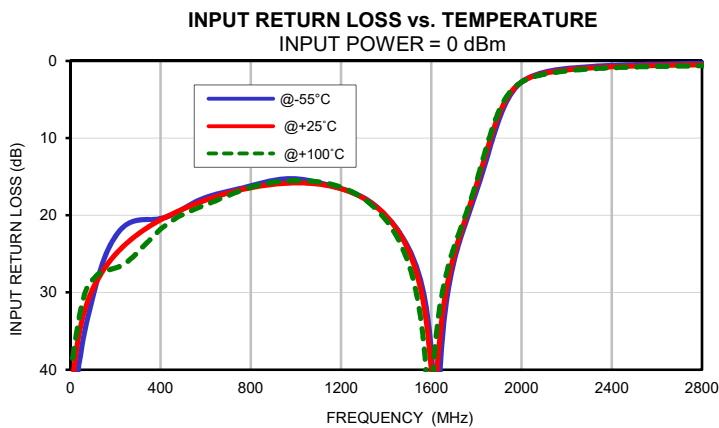
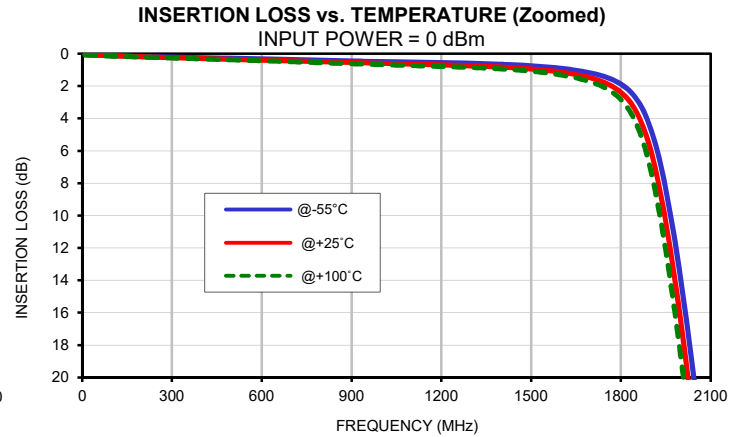
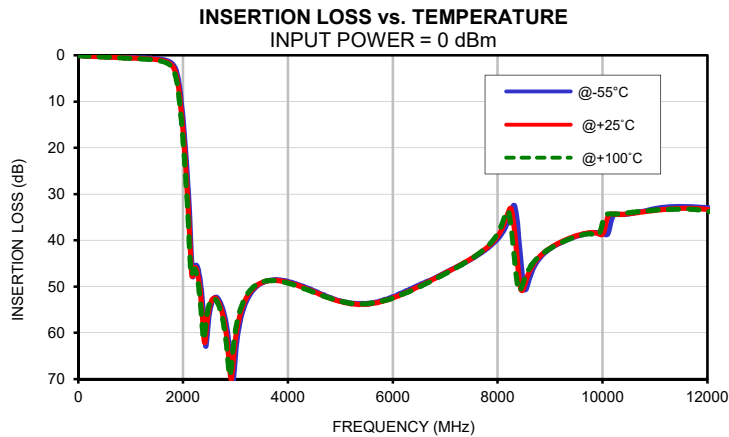
Typical Performance Data

FREQ.	INSERTION LOSS			INPUT RETURN LOSS			OUTPUT RETURN LOSS		
(MHz)	(dB)			(dB)			(dB)		
	@-55°C	@+25°C	@+100°C	@-55°C	@+25°C	@+100°C	@-55°C	@+25°C	@+100°C
10	0.05	0.06	0.08	44.20	41.92	38.56	43.43	42.48	38.46
60	0.08	0.10	0.12	35.66	32.67	30.57	35.33	32.21	30.17
100	0.11	0.13	0.15	30.63	29.52	28.33	30.32	28.96	27.79
140	0.14	0.16	0.17	26.43	27.36	27.34	26.01	26.66	26.58
180	0.17	0.18	0.20	23.68	25.73	26.99	23.20	24.90	26.05
200	0.18	0.19	0.21	22.72	25.06	26.84	22.20	24.20	25.79
240	0.20	0.22	0.23	21.41	23.90	26.31	20.83	22.96	25.06
300	0.22	0.25	0.26	20.62	22.42	24.75	19.97	21.40	23.37
400	0.24	0.30	0.32	20.40	20.58	21.81	19.69	19.54	20.39
500	0.28	0.35	0.38	19.15	19.17	19.88	18.39	18.16	18.53
800	0.40	0.50	0.56	16.18	16.43	16.37	15.79	15.83	15.60
1000	0.49	0.59	0.68	15.26	15.80	15.51	15.27	15.63	15.21
1575	0.86	1.08	1.24	31.42	33.09	39.50	30.08	29.19	29.28
1700	1.19	1.50	1.75	26.10	25.28	24.21	23.95	22.07	20.87
1850	2.74	3.53	4.26	12.24	11.28	10.67	10.74	9.70	9.03
1900	4.65	5.99	7.22	7.64	6.95	6.48	6.63	5.97	5.57
2000	13.94	16.52	18.70	2.74	2.73	2.74	2.45	2.52	2.59
2030	17.99	20.87	23.27	2.18	2.25	2.32	2.02	2.17	2.27
2035	18.71	21.64	24.08	2.10	2.19	2.26	1.96	2.12	2.23
2050	20.96	24.04	26.61	1.91	2.02	2.11	1.82	2.00	2.11
2075	25.01	28.39	31.24	1.66	1.79	1.89	1.63	1.84	1.95
2100	29.54	33.33	36.52	1.46	1.61	1.73	1.49	1.70	1.82
2175	47.00	47.80	47.18	1.07	1.25	1.37	1.20	1.41	1.52
2400	58.18	61.50	61.24	0.58	0.76	0.88	0.74	0.92	1.01
2500	56.03	54.53	53.80	0.47	0.65	0.78	0.63	0.79	0.87
2700	53.15	53.97	54.78	0.35	0.53	0.66	0.49	0.63	0.69
2800	56.81	58.53	60.23	0.31	0.50	0.62	0.44	0.57	0.62
3000	64.45	61.27	59.51	0.27	0.45	0.58	0.36	0.49	0.53
3200	53.39	52.62	52.09	0.24	0.43	0.56	0.31	0.44	0.47
3500	49.26	49.14	49.06	0.22	0.41	0.55	0.27	0.38	0.41
3600	48.80	48.80	48.78	0.22	0.41	0.54	0.26	0.37	0.40
4000	48.91	49.12	49.24	0.24	0.40	0.51	0.21	0.34	0.38
4200	49.62	49.81	49.99	0.25	0.40	0.50	0.19	0.33	0.38
4500	50.95	51.17	51.31	0.24	0.41	0.49	0.18	0.32	0.39
4750	52.16	52.32	52.34	0.23	0.41	0.51	0.16	0.32	0.40
5000	53.15	53.23	53.22	0.21	0.41	0.55	0.15	0.32	0.41
5250	53.62	53.76	53.66	0.19	0.42	0.61	0.14	0.32	0.43
5500	53.68	53.81	53.74	0.16	0.43	0.66	0.14	0.33	0.44
5750	53.15	53.32	53.26	0.15	0.43	0.69	0.13	0.33	0.46
6000	52.22	52.46	52.53	0.14	0.44	0.73	0.14	0.34	0.48
6250	50.91	51.28	51.38	0.15	0.44	0.73	0.15	0.36	0.50
6500	49.71	49.96	50.13	0.15	0.44	0.73	0.17	0.37	0.51
6750	48.41	48.59	48.73	0.16	0.44	0.71	0.18	0.38	0.53
7000	47.01	47.10	47.25	0.18	0.44	0.68	0.20	0.40	0.54
7500	44.08	43.94	43.99	0.18	0.44	0.63	0.23	0.43	0.55
8000	39.74	39.12	38.53	0.14	0.43	0.65	0.28	0.48	0.58
8500	49.96	50.18	48.72	0.10	0.43	0.69	0.32	0.49	0.54
9000	41.82	41.67	41.79	0.06	0.41	0.73	0.28	0.50	0.54
9500	39.20	39.04	39.19	0.10	0.42	0.76	0.27	0.51	0.56
10000	38.53	38.68	36.25	0.21	0.47	0.74	0.32	0.79	1.10
10250	34.40	34.39	34.34	0.27	0.50	0.70	0.46	0.62	0.67
10500	34.31	34.26	34.06	0.33	0.54	0.69	0.26	0.55	0.66
10750	33.79	33.90	33.75	0.37	0.59	0.70	0.24	0.54	0.68
11000	33.14	33.55	33.51	0.38	0.65	0.77	0.26	0.55	0.71
11250	32.80	33.29	33.35	0.35	0.72	0.89	0.27	0.57	0.74
11500	32.72	33.11	33.25	0.29	0.79	1.09	0.29	0.59	0.78
11750	32.77	33.13	33.35	0.27	0.88	1.34	0.30	0.61	0.81
11800	32.81	33.14	33.36	0.26	0.89	1.40	0.30	0.61	0.81
11900	32.89	33.22	33.50	0.27	0.93	1.51	0.31	0.62	0.83
12000	32.94	33.35	33.67	0.28	0.97	1.62	0.31	0.63	0.84

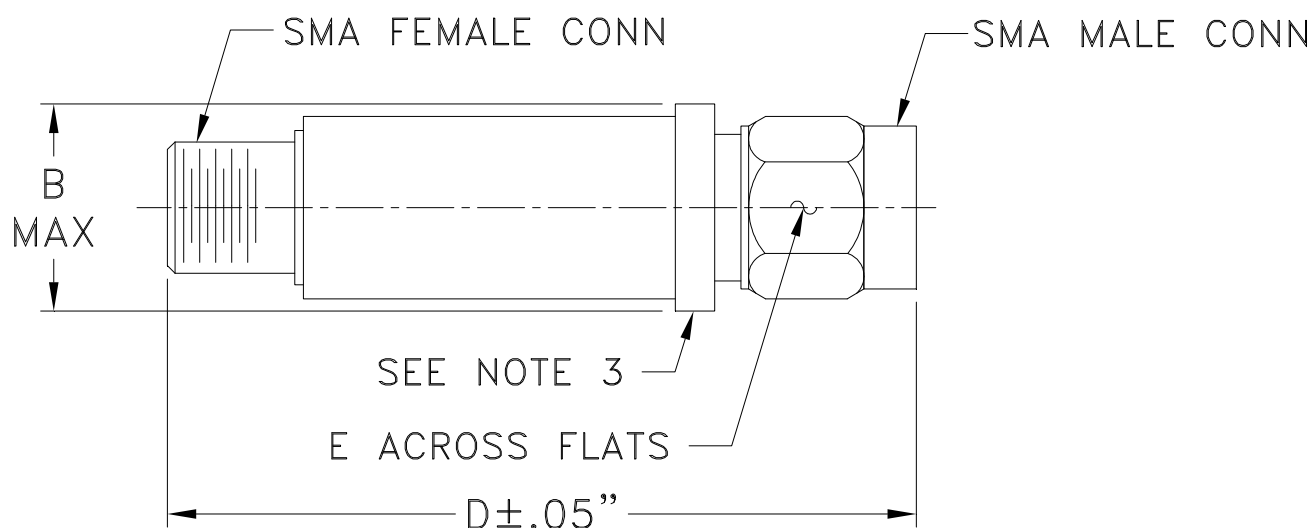
Typical Performance Data

FREQ.	GROUP DELAY		
(MHz)	(nsec)		
	@-55°C	@+25°C	@+100°C
10	0.47	0.48	0.46
30	0.47	0.48	0.46
70	0.47	0.47	0.46
110	0.47	0.46	0.46
150	0.47	0.46	0.46
190	0.47	0.46	0.46
230	0.47	0.46	0.46
270	0.47	0.46	0.46
310	0.47	0.46	0.46
350	0.47	0.46	0.46
390	0.48	0.47	0.46
430	0.48	0.47	0.46
470	0.48	0.47	0.46
510	0.48	0.47	0.47
550	0.49	0.48	0.47
590	0.49	0.48	0.47
630	0.49	0.48	0.48
670	0.50	0.49	0.48
710	0.50	0.49	0.49
750	0.51	0.50	0.49
790	0.52	0.50	0.50
830	0.52	0.51	0.50
870	0.53	0.52	0.51
910	0.53	0.53	0.52
950	0.54	0.53	0.53
990	0.55	0.54	0.54
1000	0.55	0.54	0.54
1010	0.56	0.55	0.54
1020	0.56	0.55	0.55
1030	0.56	0.55	0.55
1070	0.57	0.57	0.56
1110	0.59	0.58	0.57
1150	0.60	0.59	0.59
1190	0.62	0.61	0.61
1200	0.62	0.61	0.61
1230	0.63	0.63	0.63
1250	0.64	0.64	0.64
1300	0.67	0.66	0.66
1400	0.73	0.73	0.73
1500	0.82	0.82	0.83
1575	0.91	0.92	0.93

Typical Performance Curves



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 100° C Ambient Environment	Individual Model Data Sheet
Storage Temperature	-55° to 100° 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 100°C, 5 cycles	MIL-STD-202, Method 107, Condition A, Except +100°C