

Coaxial Low Pass Filter

VLFG-575+

50Ω

DC to 575 MHz



Generic photo used for illustration purposes only

CASE STYLE: FF704

The Big Deal

- Excellent power handling, 3.5W
- Temperature stable
- Rugged unibody construction
- Good rejection, 32 dB typical

Product Overview

VLFG-575+ is a 50Ω low pass filter built in rugged unibody construction. Covering DC-575 MHz bandwidth, these units offer good matching within the passband and good rejection in stopband. VLFG-575+ offer low insertion loss, and excellent power handling capability. It handles up to 3.5W 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.
3.5W 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 575 MHz

VLFG-575+



Features

- Low loss, 1 dB typical
- Good rejection 32 dB typical
- Excellent power handling, 3.5 W
- 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

- Harmonic Rejection
- VHF/UHF transmitters / receivers
- RF suppression for DC lines on PCB
- Anti-aliasing for A/D converter

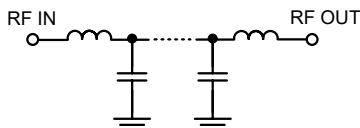
Electrical Specifications at 25°C

Parameter		F#	Frequency (MHz)	Min.	Typ.	Max.	Unit
Pass Band	Insertion Loss	DC-F1	DC - 575	—	1.0	1.9	dB
	Freq. Cut-Off	F2*	725	—	3.0	—	dB
	Return Loss	DC-F1	DC - 575	—	18	—	dB
Stop Band	Rejection Loss	F3-F4	1020 - 2500	25	32	—	dB
		F4-F5	2500 - 4400	—	25	—	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*	3.5 W max. @25°C

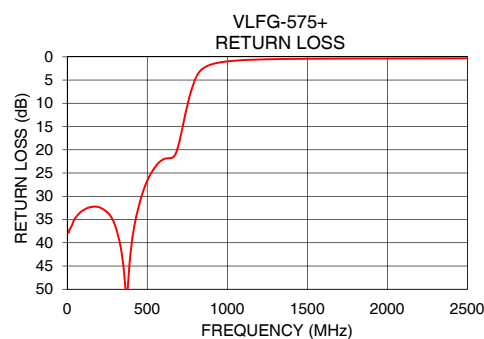
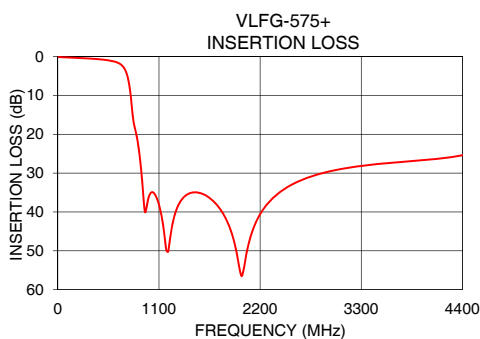
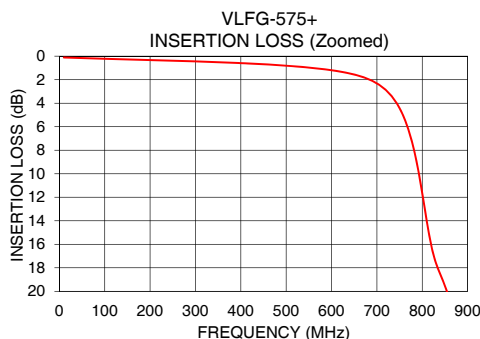
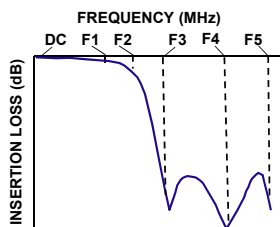
*Passband rating, derate linearly to 0.6 W at 125°C ambient

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	0.11	37.81
50	0.16	34.67
100	0.22	33.03
250	0.39	33.43
500	0.81	26.63
575	1.07	22.66
700	2.31	18.31
725	3.08	14.39
800	11.66	4.75
860	20.68	2.23
910	30.05	1.53
1000	35.49	0.98
1020	34.94	0.91
1500	34.95	0.42
2000	56.53	0.36
2500	33.56	0.32
3000	29.33	0.29
3500	27.62	0.27
4000	26.61	0.27
4400	25.39	0.28

Typical Frequency Response



Notes

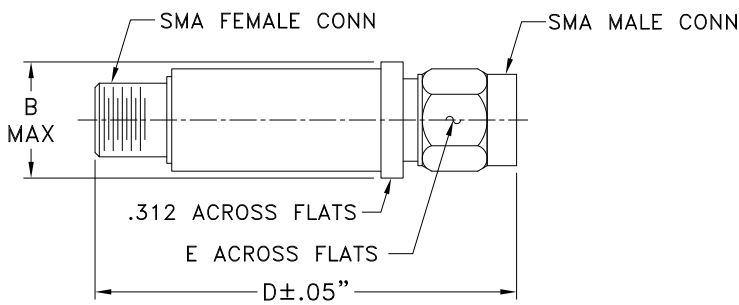
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Coaxial Connections

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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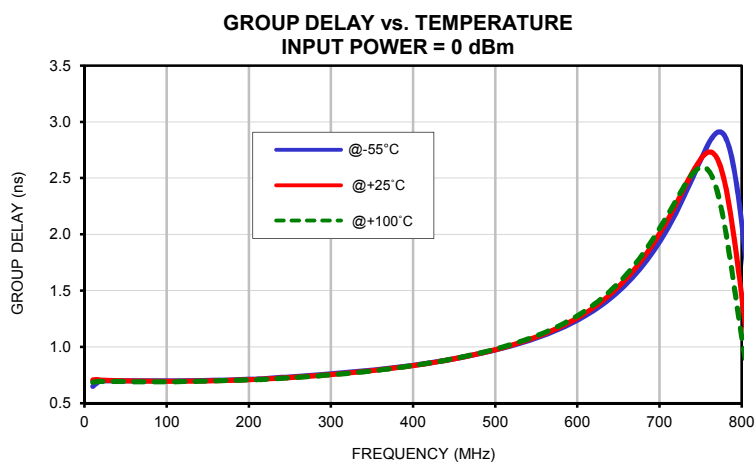
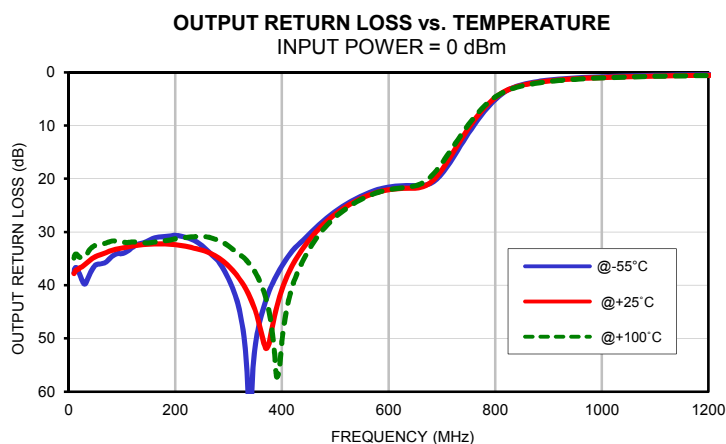
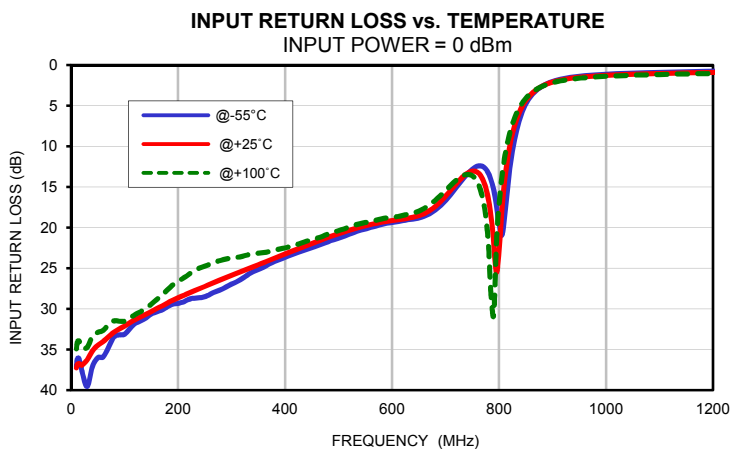
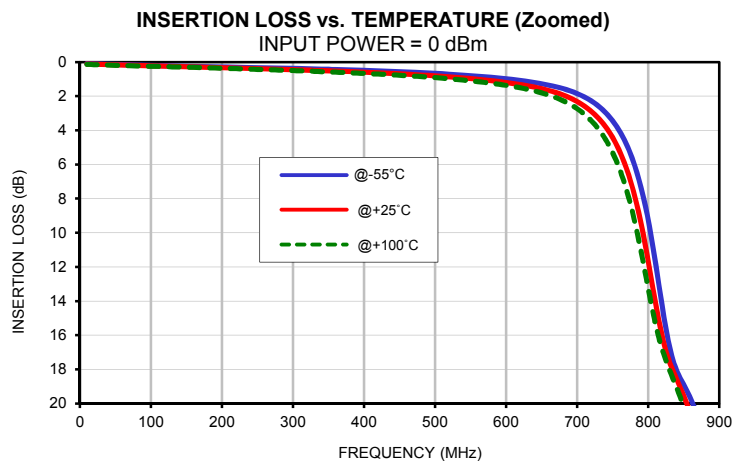
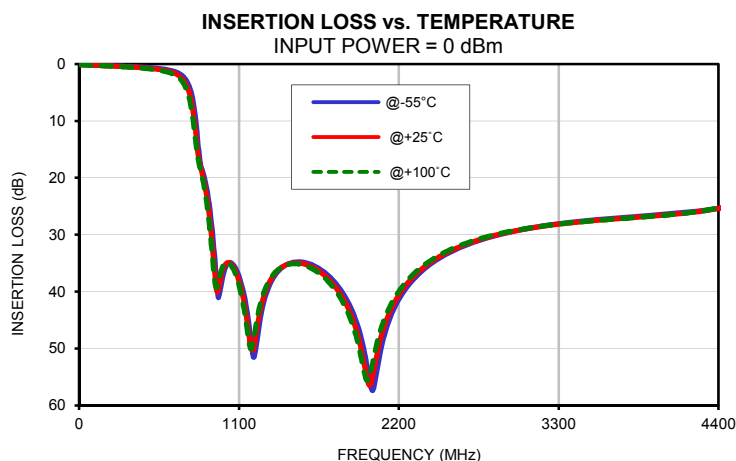
Typical Performance Data

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	0.09	0.11	0.14	37.04	37.25	34.90	37.62	37.81	34.88
50	0.14	0.16	0.19	35.99	34.46	32.88	36.25	34.67	32.51
100	0.20	0.22	0.25	33.11	32.10	31.51	34.07	33.03	31.91
150	0.24	0.27	0.30	30.62	30.29	29.41	31.60	32.31	32.06
200	0.29	0.33	0.36	29.31	28.61	26.59	30.64	32.37	31.29
250	0.33	0.39	0.43	28.49	27.23	24.73	32.54	33.43	30.79
300	0.37	0.44	0.50	26.94	25.84	23.73	38.88	36.42	32.66
350	0.42	0.51	0.57	25.12	24.55	23.14	51.70	44.73	37.58
400	0.48	0.59	0.66	23.64	23.23	22.48	36.39	40.80	50.59
450	0.56	0.68	0.77	22.45	21.93	21.48	30.58	31.69	33.47
500	0.66	0.81	0.91	21.28	20.74	20.36	26.12	26.63	27.18
520	0.71	0.87	0.98	20.79	20.31	19.92	24.87	25.28	25.66
575	0.88	1.07	1.22	19.70	19.40	19.00	22.17	22.66	22.74
600	0.98	1.19	1.37	19.35	19.12	18.72	21.58	22.07	22.09
635	1.16	1.43	1.64	18.98	18.78	18.27	21.27	21.80	21.59
685	1.62	2.01	2.36	17.60	17.13	16.38	20.49	20.16	19.02
725	2.42	3.08	3.67	14.60	14.22	13.89	15.42	14.39	13.40
800	9.26	11.66	13.27	19.49	22.83	17.07	5.13	4.75	4.64
860	19.75	20.68	21.55	3.77	3.55	3.44	2.10	2.23	2.36
900	25.61	27.63	29.22	2.01	2.09	2.17	1.48	1.64	1.75
910	27.76	30.05	31.80	1.82	1.91	2.00	1.38	1.53	1.65
950	39.49	40.10	39.13	1.37	1.50	1.61	1.07	1.23	1.32
1000	36.20	35.49	35.14	1.12	1.26	1.37	0.84	0.98	1.06
1020	35.14	34.94	34.90	1.06	1.19	1.31	0.77	0.91	0.98
1200	51.53	50.24	48.51	0.74	0.91	1.02	0.47	0.57	0.61
1500	34.76	34.95	35.11	0.50	0.68	0.79	0.33	0.42	0.43
1700	36.84	37.43	37.84	0.40	0.57	0.69	0.29	0.39	0.39
1800	39.70	40.54	41.17	0.36	0.54	0.66	0.28	0.38	0.38
1900	44.71	46.16	47.30	0.33	0.50	0.62	0.27	0.37	0.37
2000	55.96	56.53	54.85	0.31	0.48	0.59	0.27	0.36	0.37
2100	47.70	46.09	44.91	0.29	0.46	0.56	0.26	0.35	0.36
2200	41.37	40.60	39.96	0.28	0.44	0.55	0.25	0.34	0.35
2300	37.86	37.38	36.95	0.27	0.43	0.53	0.24	0.34	0.35
2400	35.50	35.18	34.86	0.27	0.42	0.52	0.23	0.33	0.34
2500	33.81	33.56	33.31	0.26	0.42	0.51	0.22	0.32	0.33
2600	32.52	32.32	32.11	0.26	0.42	0.51	0.21	0.32	0.33
2700	31.48	31.33	31.17	0.26	0.42	0.51	0.21	0.31	0.33
2800	30.63	30.53	30.40	0.26	0.42	0.51	0.19	0.30	0.32
2900	29.93	29.88	29.77	0.26	0.43	0.52	0.18	0.30	0.32
3000	29.35	29.33	29.24	0.27	0.43	0.53	0.17	0.29	0.32
3050	29.09	29.09	29.02	0.27	0.43	0.53	0.17	0.29	0.32
3100	28.85	28.87	28.81	0.27	0.43	0.53	0.17	0.29	0.32
3150	28.63	28.67	28.62	0.27	0.44	0.53	0.17	0.29	0.32
3200	28.43	28.48	28.45	0.27	0.44	0.54	0.17	0.29	0.32
3250	28.24	28.31	28.28	0.27	0.44	0.54	0.16	0.28	0.32
3300	28.08	28.16	28.14	0.27	0.44	0.54	0.16	0.28	0.32
3350	27.92	28.01	27.99	0.27	0.44	0.54	0.16	0.28	0.32
3400	27.77	27.87	27.86	0.27	0.44	0.54	0.15	0.28	0.32
3450	27.63	27.74	27.74	0.27	0.45	0.54	0.14	0.28	0.32
3500	27.50	27.62	27.63	0.28	0.45	0.54	0.14	0.27	0.32
3550	27.38	27.50	27.52	0.28	0.45	0.54	0.13	0.27	0.32
3600	27.27	27.39	27.42	0.28	0.45	0.54	0.13	0.27	0.33
3700	27.05	27.19	27.23	0.29	0.45	0.54	0.12	0.27	0.32
3800	26.85	27.00	27.04	0.30	0.46	0.53	0.11	0.27	0.33
3900	26.64	26.81	26.85	0.30	0.46	0.53	0.10	0.27	0.33
4000	26.45	26.61	26.65	0.31	0.46	0.53	0.10	0.27	0.34
4100	26.26	26.40	26.41	0.30	0.46	0.53	0.10	0.27	0.35
4200	26.01	26.13	26.13	0.31	0.46	0.53	0.10	0.27	0.36
4300	25.72	25.81	25.77	0.30	0.46	0.54	0.10	0.27	0.37
4400	25.38	25.39	25.28	0.30	0.47	0.56	0.10	0.28	0.38

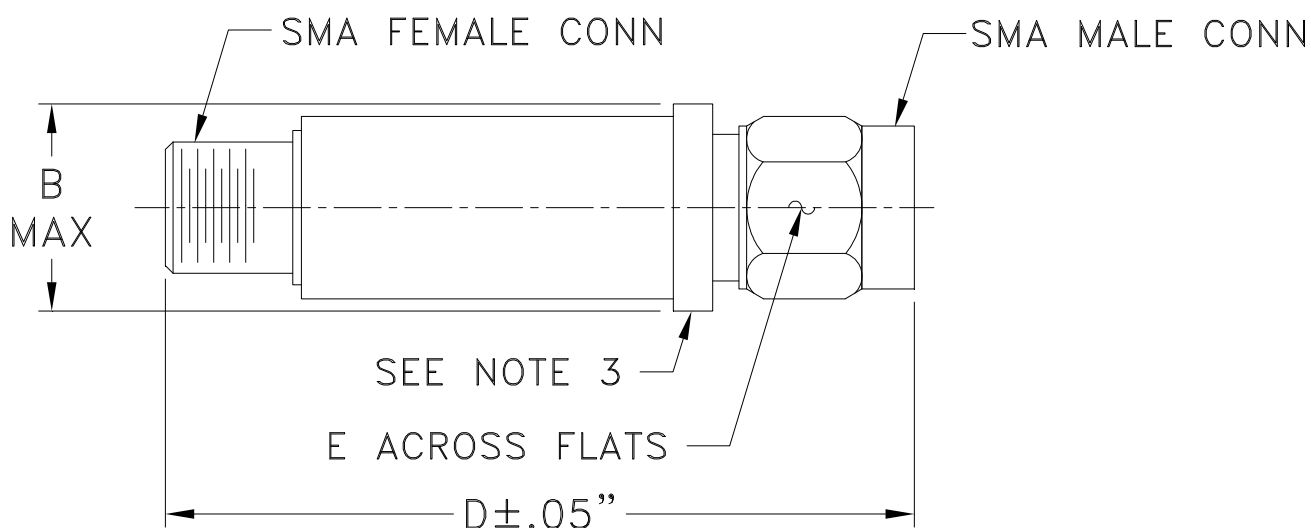
Typical Performance Data

FREQ.	GROUP DELAY		
(MHz)	(nsec)		
	@-55°C	@+25°C	@+100°C
10	0.65	0.71	0.68
20	0.70	0.70	0.69
30	0.70	0.70	0.69
40	0.70	0.70	0.69
50	0.70	0.70	0.69
60	0.70	0.70	0.69
70	0.70	0.70	0.69
80	0.70	0.69	0.69
90	0.70	0.69	0.69
100	0.70	0.69	0.69
110	0.70	0.69	0.69
120	0.70	0.69	0.69
130	0.70	0.70	0.69
140	0.70	0.70	0.69
150	0.70	0.70	0.70
160	0.70	0.70	0.70
170	0.70	0.70	0.70
180	0.71	0.70	0.70
190	0.71	0.71	0.70
200	0.71	0.71	0.71
210	0.71	0.71	0.71
225	0.72	0.72	0.71
240	0.73	0.72	0.72
255	0.74	0.73	0.73
270	0.74	0.74	0.73
285	0.75	0.74	0.74
300	0.76	0.75	0.75
315	0.77	0.76	0.76
330	0.78	0.77	0.77
345	0.79	0.78	0.78
360	0.80	0.80	0.79
375	0.81	0.81	0.81
390	0.83	0.82	0.82
405	0.84	0.84	0.84
420	0.86	0.86	0.86
500	0.97	0.97	0.98
510	0.99	0.99	1.00
530	1.03	1.04	1.05
550	1.08	1.09	1.10
560	1.10	1.12	1.13
575	1.15	1.16	1.18

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



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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 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