

# Coaxial Low Pass Filter

## VLFG-530+

50Ω DC to 530 MHz



Generic photo used for illustration purposes only  
CASE STYLE: FF704

### The Big Deal

- Excellent power handling, 4 W
- Temperature stable
- Rugged unibody construction
- Good rejection, 31 dB typical

### Product Overview

VLFG-530+ is a 50Ω low pass filter built in rugged unibody construction. Covering DC-530 MHz bandwidth, these units offer good matching within the passband and good rejection in stopband. VLFG-530+ offer low insertion loss, and excellent power handling capability. It handles up to 4W RF input power and provides a wide operating temperature range from -55°C to 100°C.

### Key Features

Feature	Advantages
Low passband insertion loss	Suitable for high performance application.
4 W 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](http://www.minicircuits.com/MCLStore/terms.jsp)



# Low Pass Filter

## VLFG-530+

50Ω DC to 530 MHz



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CASE STYLE: FF704

**+RoHS Compliant**

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

### Features

- Low loss, 1dB typical
- Good rejection 31 dB typical
- Excellent power handling, 4 W
- Temperature stable
- Connectorized package
- Rugged unibody construction

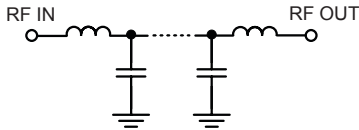
### Applications

- 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 - 530	—	1.0	1.8	dB
	Freq. Cut-Off	F2	670	—	3.0	—	dB
	VSWR	DC-F1	DC - 530	—	1.3	—	:1
Stop Band	Rejection Loss	F3-F4	980 - 2600	25	31	—	dB
		F4-F5	2600 - 4000	—	27	—	dB
	VSWR	F3-F5	980 - 4000	—	20	—	:1

### Functional Schematic



### Maximum Ratings

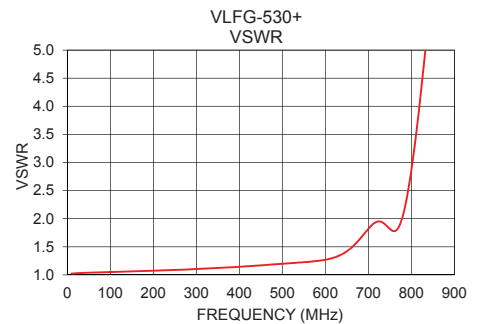
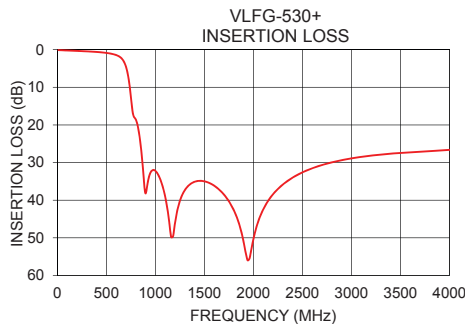
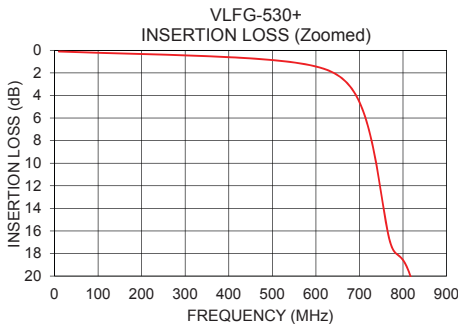
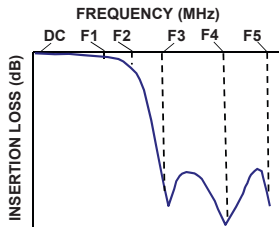
Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
RF Power Input*	4 W max. @ 25°C

\*Passband rating, derate linearly to 2 W at 100°C ambient  
Permanent damage may occur if any of these limits are exceeded.

### Typical Performance Data at 25°C

Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)
10	0.11	1.02
50	0.16	1.04
100	0.22	1.05
250	0.38	1.04
500	0.86	1.11
530	0.98	1.13
650	2.20	1.32
670	2.83	1.49
675	3.03	1.55
790	18.18	7.15
820	20.36	9.27
870	30.87	13.07
980	31.96	21.31
1000	32.22	22.77
2000	50.28	52.58
2600	31.51	60.23
3000	28.89	65.82
3500	27.44	71.90
3750	27.03	74.04
4000	26.65	74.33

### Typical Frequency Response



### Notes

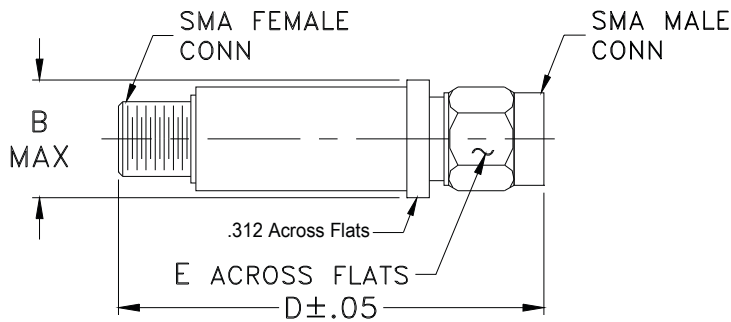
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**Coaxial Connections**

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

**Outline Drawing**



**Outline Dimensions ( inch )**

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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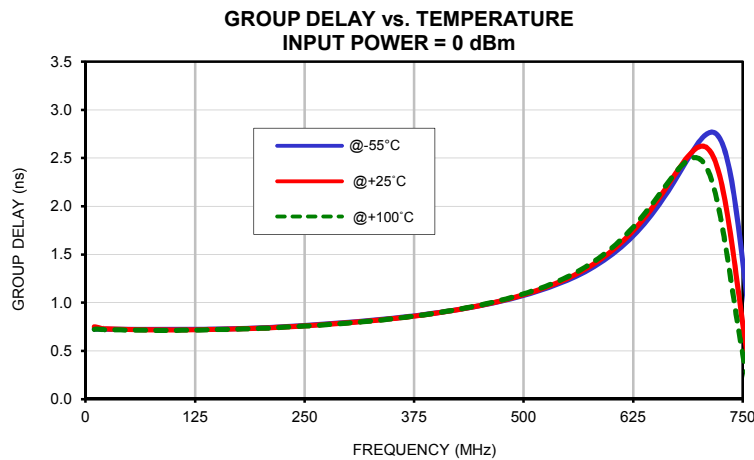
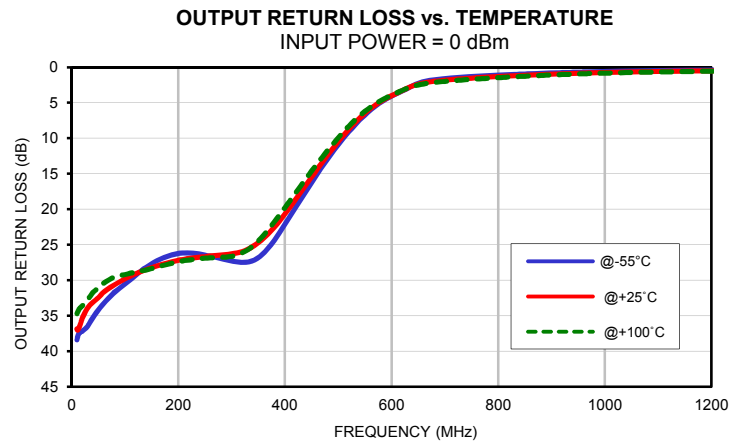
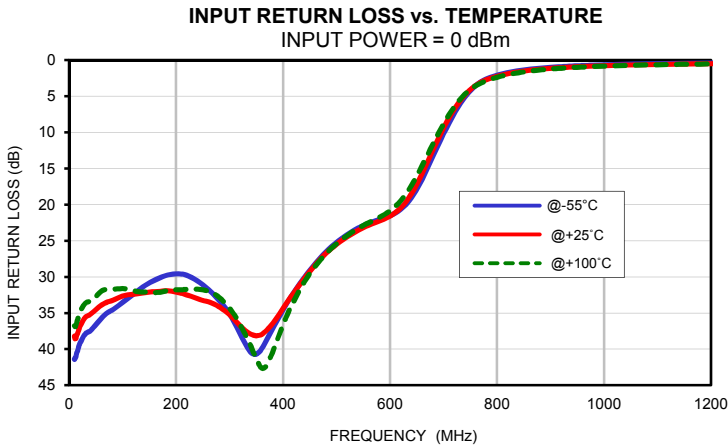
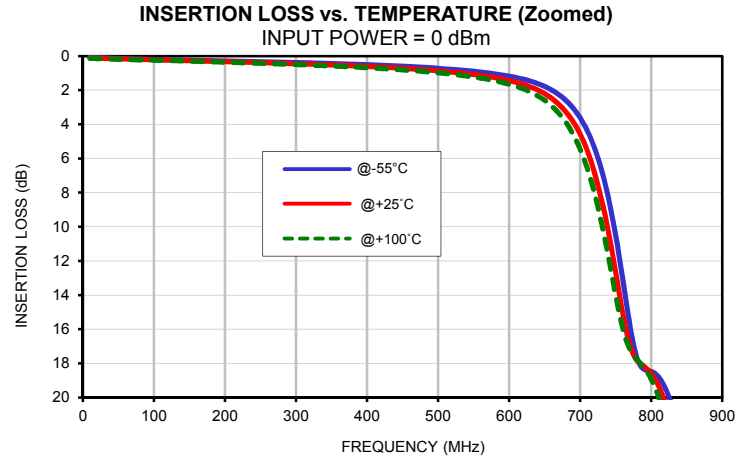
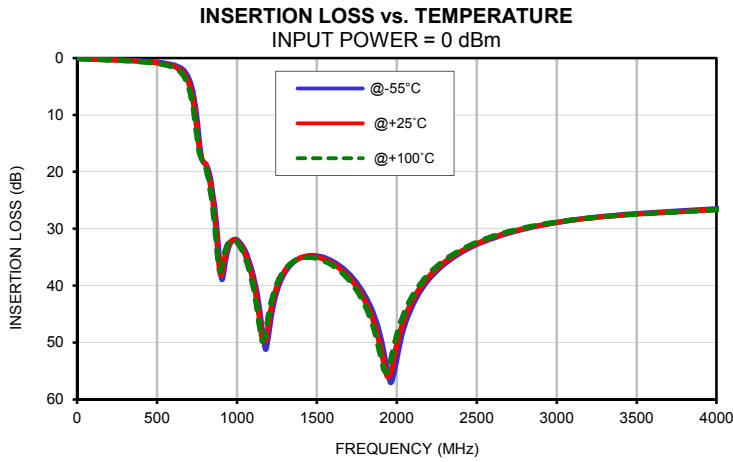
*Typical Performance Data*

FREQ.  (MHz)	INSERTION LOSS			INPUT RETURN LOSS			OUTPUT RETURN LOSS		
	(dB)			(dB)			(dB)		
	@-55°C	@+25°C	@+100°C	@-55°C	@+25°C	@+100°C	@-55°C	@+25°C	@+100°C
10	0.08	0.11	0.13	41.42	38.21	36.80	38.41	36.88	34.72
20	0.10	0.12	0.15	39.23	36.88	34.86	37.16	35.34	33.63
50	0.14	0.16	0.18	36.59	34.52	32.73	34.16	32.49	31.08
100	0.19	0.22	0.24	33.53	32.67	31.62	30.57	29.81	29.21
150	0.24	0.27	0.30	30.83	32.10	32.12	27.68	28.22	28.36
200	0.29	0.32	0.36	29.59	32.10	31.80	26.22	27.20	27.39
225	0.31	0.35	0.39	29.91	32.61	31.69	26.18	26.89	27.10
250	0.33	0.38	0.42	31.11	33.27	31.80	26.47	26.68	26.90
275	0.35	0.41	0.46	32.80	33.92	32.51	26.86	26.49	26.81
300	0.38	0.45	0.50	35.15	35.24	34.33	27.30	26.28	26.64
325	0.40	0.48	0.54	38.67	37.18	37.34	27.48	25.82	25.96
350	0.43	0.52	0.58	40.70	38.15	41.31	26.82	24.72	24.47
375	0.47	0.56	0.63	37.96	36.96	41.39	24.89	22.96	22.28
400	0.50	0.61	0.68	34.54	34.36	36.62	22.16	20.67	19.78
450	0.59	0.72	0.81	29.11	29.24	29.53	16.19	15.46	14.63
500	0.72	0.86	0.98	25.22	25.49	25.42	10.91	10.48	9.93
530	0.81	0.98	1.11	23.67	23.98	23.75	8.23	7.92	7.54
550	0.89	1.08	1.23	22.88	23.19	22.87	6.72	6.48	6.22
600	1.18	1.43	1.65	21.53	21.59	20.86	4.06	4.00	3.94
650	1.78	2.20	2.59	17.86	17.15	16.04	2.25	2.37	2.49
670	2.26	2.83	3.35	14.95	14.08	13.11	1.87	2.08	2.24
700	3.62	4.58	5.46	10.21	9.43	8.83	1.59	1.82	1.99
725	5.97	7.54	8.84	6.75	6.23	5.96	1.44	1.66	1.84
750	10.51	12.68	14.05	4.22	4.06	4.06	1.31	1.53	1.70
775	16.89	17.49	17.52	2.78	2.87	2.99	1.21	1.42	1.58
800	18.48	18.58	18.94	2.08	2.23	2.37	1.11	1.31	1.47
825	19.97	21.02	22.00	1.66	1.81	1.94	1.03	1.21	1.36
830	20.56	21.77	22.84	1.59	1.74	1.87	1.01	1.20	1.34
850	23.83	25.59	27.05	1.36	1.51	1.63	0.95	1.13	1.26
860	25.99	28.03	29.66	1.27	1.41	1.53	0.92	1.09	1.23
875	30.00	32.44	34.15	1.15	1.29	1.40	0.87	1.04	1.17
880	31.57	34.08	35.58	1.11	1.26	1.36	0.86	1.03	1.16
900	38.19	38.21	37.09	0.99	1.13	1.23	0.81	0.97	1.09
925	36.32	34.83	33.95	0.88	1.01	1.09	0.75	0.90	1.01
980	31.91	31.96	32.03	0.69	0.82	0.88	0.63	0.78	0.87
1000	31.94	32.22	32.46	0.65	0.76	0.83	0.60	0.74	0.83
1100	37.93	39.16	40.18	0.49	0.59	0.63	0.47	0.59	0.66
1200	48.26	46.00	44.61	0.41	0.49	0.52	0.39	0.50	0.56
1300	37.73	37.32	37.12	0.36	0.44	0.46	0.34	0.44	0.49
1400	35.09	35.09	35.19	0.33	0.41	0.42	0.31	0.41	0.45
1500	34.76	34.99	35.23	0.31	0.39	0.40	0.30	0.38	0.42
1600	35.74	36.17	36.53	0.29	0.37	0.38	0.28	0.37	0.40
1700	37.89	38.54	39.05	0.28	0.36	0.37	0.28	0.36	0.39
1800	41.65	42.69	43.49	0.26	0.35	0.36	0.27	0.35	0.38
1900	49.12	51.19	52.69	0.26	0.34	0.35	0.27	0.34	0.37
2000	52.89	50.28	48.52	0.25	0.33	0.34	0.27	0.34	0.37
2200	38.96	38.41	37.92	0.23	0.32	0.33	0.26	0.34	0.36
2400	34.24	33.99	33.71	0.21	0.30	0.32	0.26	0.33	0.36
2600	31.70	31.51	31.33	0.19	0.29	0.31	0.26	0.33	0.36
2800	30.04	29.94	29.82	0.17	0.28	0.31	0.25	0.33	0.37
3000	28.92	28.89	28.81	0.15	0.26	0.30	0.24	0.33	0.37
3100	28.47	28.49	28.43	0.14	0.26	0.30	0.24	0.33	0.38
3200	28.09	28.16	28.12	0.13	0.25	0.31	0.24	0.33	0.38
3300	27.80	27.88	27.87	0.12	0.25	0.31	0.23	0.33	0.39
3400	27.55	27.64	27.64	0.12	0.24	0.31	0.23	0.33	0.39
3500	27.32	27.44	27.45	0.11	0.24	0.31	0.23	0.33	0.40
3600	27.13	27.26	27.28	0.10	0.24	0.31	0.22	0.33	0.41
3700	26.97	27.10	27.13	0.09	0.24	0.31	0.22	0.33	0.42
3800	26.81	26.95	26.99	0.08	0.23	0.32	0.21	0.34	0.43
4000	26.50	26.65	26.67	0.07	0.23	0.33	0.22	0.37	0.50

*Typical Performance Data*

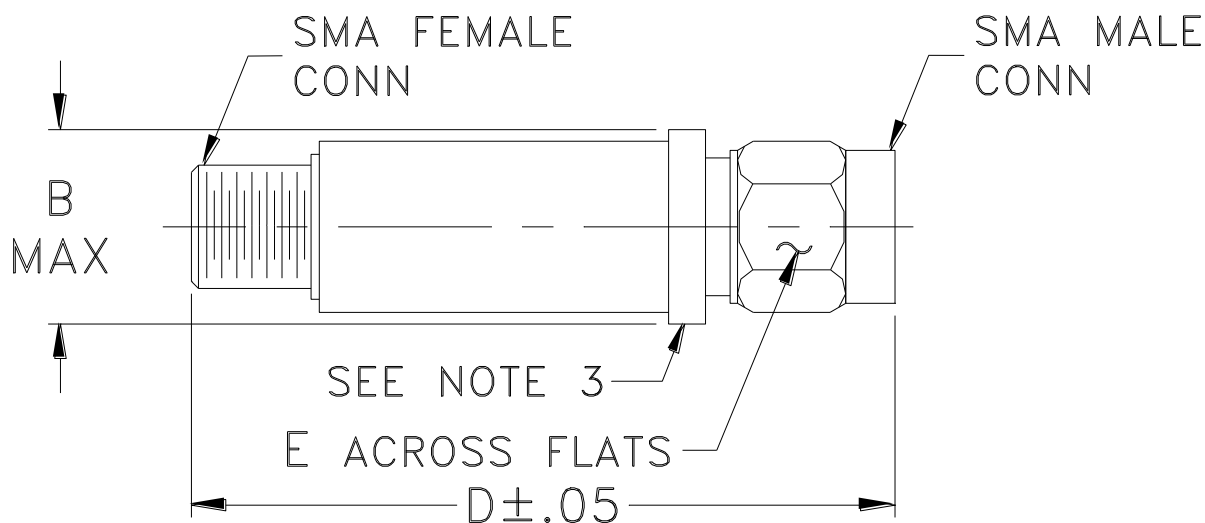
FREQ.  (MHz)	GROUP DELAY		
	(nsec)		
	@-55°C	@+25°C	@+100°C
10	0.73	0.75	0.72
20	0.73	0.73	0.72
30	0.73	0.73	0.72
40	0.72	0.72	0.72
50	0.72	0.72	0.72
70	0.72	0.72	0.71
100	0.72	0.72	0.71
150	0.73	0.72	0.72
170	0.73	0.73	0.73
200	0.74	0.74	0.73
225	0.75	0.75	0.74
250	0.76	0.76	0.76
275	0.78	0.77	0.77
300	0.80	0.79	0.79
300	0.80	0.79	0.79
305	0.80	0.80	0.79
310	0.80	0.80	0.80
315	0.81	0.80	0.80
320	0.81	0.81	0.81
325	0.82	0.81	0.81
330	0.82	0.82	0.81
335	0.82	0.82	0.82
440	0.95	0.95	0.96
445	0.96	0.96	0.96
450	0.97	0.97	0.97
455	0.98	0.98	0.98
460	0.99	0.99	0.99
465	1.00	1.00	1.00
470	1.01	1.01	1.02
475	1.02	1.02	1.03
480	1.03	1.03	1.04
485	1.04	1.04	1.05
490	1.05	1.06	1.06
495	1.06	1.07	1.08
500	1.08	1.08	1.09
505	1.09	1.10	1.11
510	1.10	1.11	1.12
515	1.12	1.13	1.14
520	1.13	1.14	1.15
525	1.15	1.16	1.17
530	1.16	1.17	1.19

## Typical Performance Curves



FF704  
 FF886  
 FF887  
 FF888  
 FF969  
 FF1118  
 FF1145

## Outline Dimensions



CASE #.	A	B	C	D	E	WT GRAMS
FF704		.410 (10.41)		1.43 (36.32)		10.0
FF886		.62 (15.75)		1.90 (48.26)		22.0
FF887		.62 (15.75)		2.24 (56.90)		26.0
FF888	--	.410 (10.41)	--	1.18 (29.97)	.312 (7.92)	7.0
FF969		.555 (14.10)		1.75 (44.45)		20.0
FF1118		.410 (10.41)		2.67 (67.82)		17.0
FF1145		.410 (10.41)		1.91 (48.51)		11.8

Dimensions are in inches (mm). Tolerances: 2Pl. ± .03; 3Pl. ± .015

### Notes:

1. Case material: Stainless steel.
2. Case finish: Passivation for FF888, gold plate on all remaining case style.
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