

Coaxial Low Pass Filter

50Ω

*DC to 530 MHz

VLF-530+
VLF-530



Generic photo used for illustration purposes only

CASE STYLE: FF704

Connectors	Model
SMA	VLF-530+

+RoHS Compliant

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

Maximum Ratings

Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
RF Power Input*	8.5W max. at 25°C
DC Current Input to Output	0.5A max. at 25°C

* Passband rating, derate linearly to 3.5W at 100°C ambient.
Permanent damage may occur if any of these limits are exceeded.

Features

- rugged uni-body construction, small size
- 7 sections
- excellent power handling, 8.5W
- temperature stable
- low cost
- protected by U.S. Patent 6,943,646

Applications

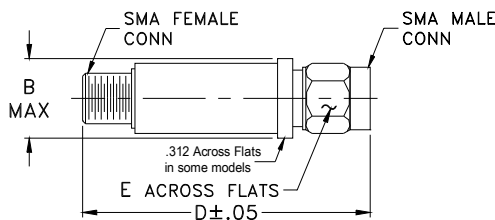
- harmonic rejection
- transmitters/receivers
- lab use

Electrical Specifications at 25°C

PASSBAND (MHz) (loss < 1.2 dB)	fco, MHz Nom. (loss 3 dB)	STOP BAND (MHz) (loss, dB)			VSWR (:1)		NO. OF SECTIONS
		f 20 Min.	40 Typ.	fr 20 Typ.	Stopband Typ.	Passband Typ.	
Max.	Typ.	Min.	Typ.	Typ.	Typ.	Typ.	
*DC-530	700	820	945-3000	6000	20	1.2	7

* Not for use with DC voltage at input and output ports

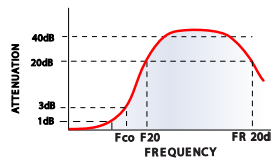
Outline Drawing



Outline Dimensions (inch/mm)

B	D	E	wt
.410	1.43	.312	grams
10.41	36.32	7.92	10.0

typical frequency response

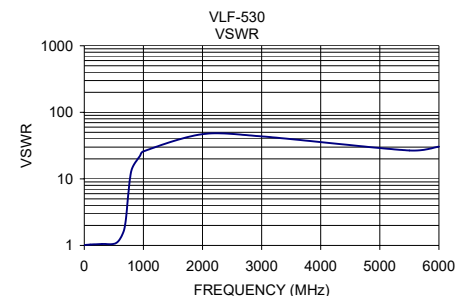
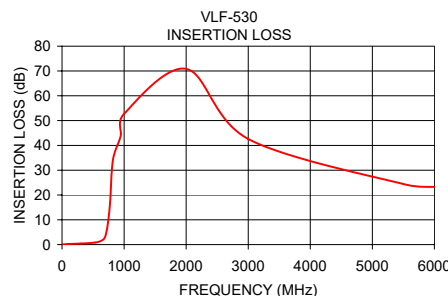


electrical schematic



Typical Performance Data at 25°C

Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)
1	0.05	1.01
100	0.22	1.03
300	0.41	1.05
530	0.83	1.08
650	1.78	1.50
700	3.52	2.31
740	8.75	5.42
775	17.33	10.43
820	34.05	15.13
945	43.81	22.29
1000	52.72	25.94
2000	70.84	46.96
3000	42.58	43.44
5500	24.42	26.74
6000	23.25	30.49



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/VCLStore/terms.jsp



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Typical Performance Data

FREQ. (MHz)	INSERTION LOSS (dB)			INPUT RETURN LOSS (dB)			OUTPUT RETURN LOSS (dB)		
	@ -55° C	@ +25° C	@ +100° C	@ -55° C	@ +25° C	@ +100° C	@ -55° C	@ +25° C	@ +100° C
1	0.02	0.05	0.07	49.14	46.06	44.83	49.27	46.06	44.83
50	0.12	0.15	0.17	39.26	36.18	34.95	38.57	35.36	34.13
100	0.17	0.22	0.24	37.42	36.29	35.49	33.73	32.15	31.24
200	0.25	0.30	0.35	46.05	38.50	34.02	28.80	27.78	27.05
300	0.35	0.41	0.48	35.44	31.99	29.29	26.95	25.36	24.46
400	0.45	0.55	0.66	33.97	31.35	30.50	29.01	27.07	25.99
500	0.62	0.76	0.89	38.53	38.64	36.01	34.49	33.59	31.19
530	0.67	0.83	0.99	29.21	28.58	27.06	28.60	27.78	26.23
560	0.79	0.99	1.15	23.96	23.17	22.13	23.72	22.94	21.91
580	0.90	1.12	1.29	21.22	20.48	19.57	21.51	20.81	19.99
600	0.99	1.22	1.42	18.98	18.32	17.49	19.78	19.25	18.62
650	1.43	1.78	2.12	14.64	14.02	13.35	17.81	18.00	18.20
670	1.76	2.21	2.64	12.80	12.11	11.38	17.55	18.12	18.63
700	2.78	3.52	4.25	8.75	8.04	7.37	13.02	12.82	12.30
705	3.08	3.89	4.72	7.99	7.31	6.67	11.85	11.55	11.00
725	4.95	6.14	7.34	5.05	4.65	4.26	7.47	7.20	6.82
735	6.40	7.80	9.18	3.88	3.63	3.38	5.77	5.62	5.41
745	8.17	9.76	11.29	3.00	2.87	2.74	4.48	4.45	4.36
755	10.26	12.01	13.69	2.31	2.31	2.28	3.51	3.58	3.58
790	19.77	22.02	24.16	1.25	1.40	1.50	1.98	2.20	2.32
820	31.16	34.05	36.49	1.00	1.15	1.27	1.53	1.75	1.90
845	42.23	40.98	39.69	0.86	1.01	1.13	1.39	1.61	1.76
900	37.79	38.36	38.89	0.70	0.84	0.96	1.18	1.39	1.53
945	42.47	43.81	45.07	0.64	0.78	0.89	1.09	1.31	1.45
1000	54.91	52.72	50.53	0.54	0.67	0.78	0.98	1.19	1.34
1165	39.73	39.97	40.14	0.40	0.52	0.63	0.80	0.98	1.13
1955	79.22	78.56	72.56	0.23	0.39	0.48	0.32	0.41	0.47
2500	52.59	51.98	51.68	0.24	0.38	0.45	0.22	0.29	0.32
3000	42.63	42.58	42.26	0.28	0.40	0.47	0.20	0.27	0.30
3500	36.43	36.77	36.42	0.25	0.38	0.45	0.11	0.19	0.26
4780	33.59	29.72	24.23	0.37	1.59	1.92	0.19	0.40	0.60
4880	20.90	22.55	22.30	0.81	2.01	1.99	0.41	0.39	0.46
5500	22.82	24.42	24.82	0.29	0.65	0.94	0.20	0.34	0.47
6000	22.26	23.25	23.51	0.40	0.57	0.79	0.23	0.39	0.52
7000	20.98	20.82	20.83	0.46	0.53	0.76	0.22	0.36	0.51
8000	18.82	18.47	18.57	0.41	0.49	0.65	0.24	0.36	0.47
9000	16.72	16.76	16.93	0.38	0.60	0.77	0.32	0.47	0.55
10000	15.39	15.83	15.92	0.96	0.99	1.37	0.68	0.97	1.10
11000	16.34	16.73	17.55	2.64	2.50	3.14	0.83	1.27	1.73
12060	38.96	38.05	32.97	2.84	3.05	3.40	7.69	10.65	12.49
13000	22.01	21.03	20.76	2.20	1.97	2.48	1.53	1.66	1.80

REV. X2

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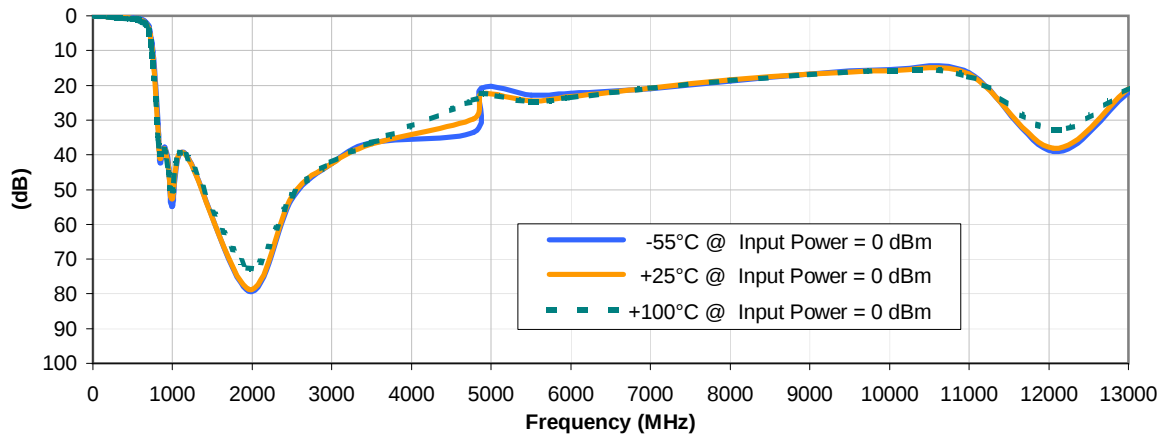


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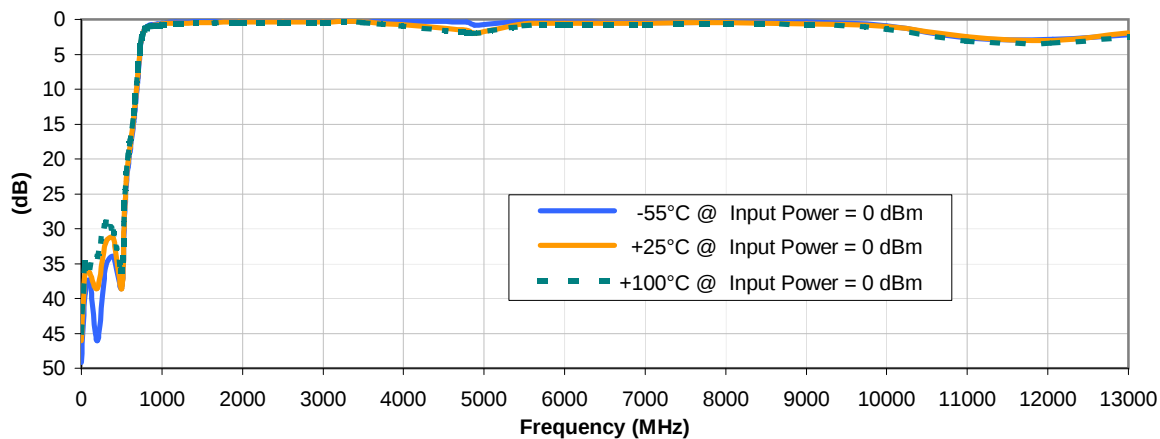
Typical Performance Curves

VLF-530

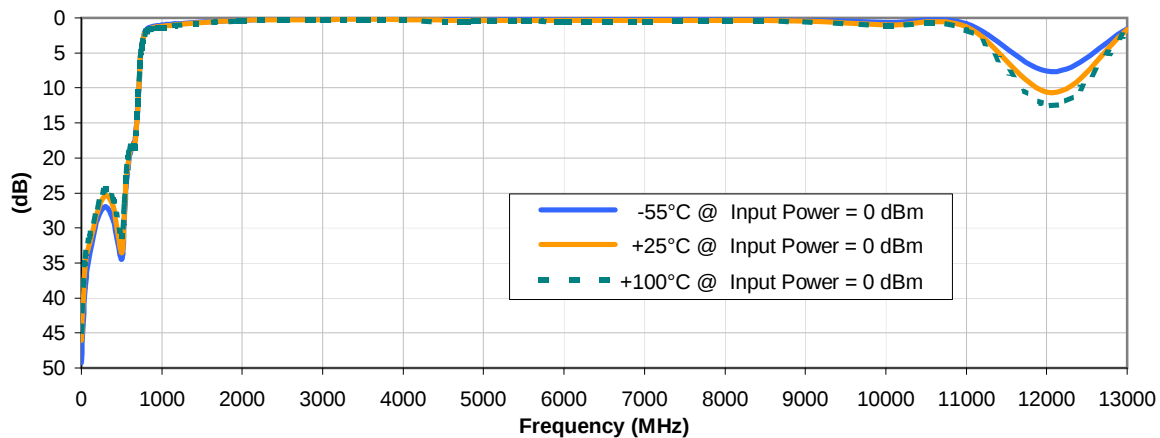
INSERTION LOSS vs. TEMPERATURE



INPUT RETURN LOSS vs. TEMPERATURE



OUTPUT RETURN LOSS vs. TEMPERATURE



REV. X2

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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.



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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
Barometric Pressure	100,000 Feet	MIL-STD-202, Method 105, Condition D
Humidity	90% RH, 65°C Units may require bake-out after humidity to restore full performance.	MIL-STD-202, Method 103
Thermal Shock	-65° to 125°C, 5 cycles	MIL-STD-202, Method 107, Condition B
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	100g, 6ms sawtooth, 3 shocks each direction 3 axes (total 18)	MIL-STD-202, Method 213, Condition I