

Coaxial Low Pass Filter

50Ω

*DC to 630 MHz

VLF-630+
VLF-630



Generic photo used for illustration purposes only

CASE STYLE: FF704

Connectors	Model
SMA	VLF-630(+)

+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

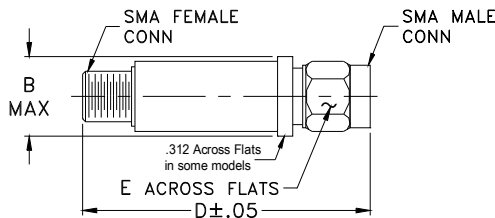
- harmonic rejection
- transmitters/receivers
- lab use

Electrical Specifications at 25°C

PASSBAND (MHz)	f _{co} , MHz Nom.	STOP BAND (MHz) (loss, dB)			VSWR (:1)		NO. OF SECTIONS
(loss < 1.2 dB)	(loss 3 dB)	f 20	40	fr 20	Stopband	Passband	
Max.	Typ.	Min.	Typ.	Typ.	Typ.	Typ.	
*DC-630	830	1000	1050-3500	6000	20	1.2	7

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

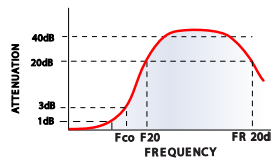
Outline Drawing



Outline Dimensions (inch/mm)

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

typical frequency response

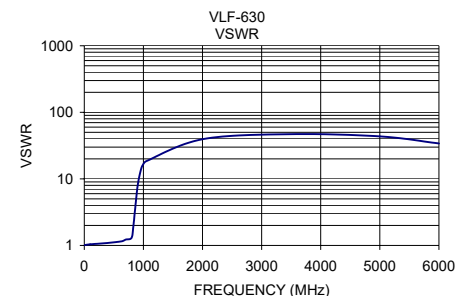
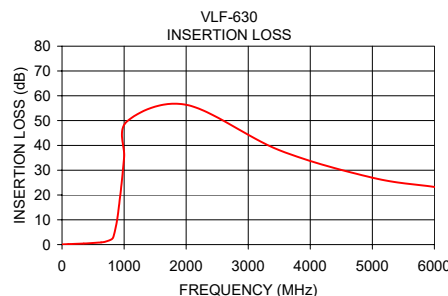


electrical schematic



Typical Performance Data at 25°C

Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)
1	0.05	1.01
100	0.19	1.04
350	0.42	1.08
630	0.89	1.15
700	1.17	1.22
800	2.16	1.30
830	3.34	1.92
880	8.80	5.25
910	14.08	8.64
960	24.64	13.92
1000	35.29	16.72
1050	49.74	18.50
2000	56.37	39.49
3500	38.09	46.96
5000	26.98	43.44
6000	23.24	34.07



Notes

- 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.
- Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
- 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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Coaxial Low Pass Filter

VLF-630+

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
50	0.10	0.13	0.14	38.22	36.44	35.10	41.41	38.68	36.62
100	0.14	0.19	0.19	35.15	34.28	33.62	36.65	35.12	34.50
110	0.15	0.18	0.22	34.72	34.15	33.42	36.57	35.07	34.33
120	0.15	0.21	0.23	33.37	32.65	31.92	35.68	34.43	33.67
130	0.18	0.21	0.24	33.19	32.46	31.60	35.63	34.19	33.42
140	0.19	0.23	0.25	33.37	32.40	31.34	35.31	33.93	33.09
150	0.17	0.20	0.23	33.11	31.93	30.89	35.39	33.80	32.92
160	0.18	0.22	0.25	32.77	31.35	30.22	35.18	33.53	32.38
170	0.17	0.21	0.25	32.52	31.05	29.78	35.27	33.40	32.21
180	0.19	0.24	0.28	32.42	30.69	29.29	34.59	32.80	31.54
190	0.20	0.25	0.29	31.94	30.17	28.63	34.87	32.78	31.27
200	0.22	0.28	0.31	31.78	29.79	28.17	34.57	32.33	30.73
300	0.27	0.35	0.39	28.77	27.08	25.55	32.26	29.93	27.97
350	0.30	0.38	0.45	27.79	26.63	25.50	31.51	29.71	28.06
400	0.35	0.43	0.52	27.51	26.54	25.81	32.24	30.83	29.51
500	0.42	0.55	0.63	31.55	30.45	30.29	41.49	40.36	39.64
600	0.57	0.74	0.86	28.17	27.46	26.55	28.86	28.11	27.16
630	0.65	0.81	0.95	24.51	23.84	23.08	25.21	24.52	23.76
700	0.89	1.11	1.28	19.20	18.72	18.26	20.13	19.72	19.29
800	1.57	1.99	2.39	21.13	19.34	17.50	28.25	23.16	19.97
830	2.41	3.11	3.84	11.93	10.56	9.37	12.99	11.45	10.17
880	7.32	8.74	10.10	3.29	3.12	2.96	3.82	3.69	3.57
900	10.72	12.28	13.77	2.07	2.09	2.07	2.54	2.61	2.66
910	12.58	14.21	15.72	1.71	1.77	1.81	2.17	2.28	2.38
960	23.06	24.90	26.61	0.91	1.07	1.17	1.33	1.54	1.70
1000	33.24	35.46	37.66	0.73	0.87	0.99	1.13	1.33	1.48
1020	39.73	42.37	44.92	0.69	0.84	0.95	1.05	1.24	1.41
1030	43.70	46.51	48.82	0.70	0.83	0.94	1.01	1.22	1.38
1040	48.10	50.49	50.92	0.63	0.78	0.89	1.02	1.21	1.36
1050	52.27	51.72	50.43	0.63	0.77	0.87	0.98	1.17	1.33
1100	47.43	47.51	47.60	0.57	0.70	0.81	0.88	1.05	1.22
1200	56.01	57.57	59.36	0.48	0.62	0.71	0.72	0.89	1.03
1300	55.77	54.97	54.48	0.44	0.60	0.68	0.60	0.76	0.90
1400	51.31	51.34	51.49	0.41	0.55	0.66	0.52	0.68	0.78
1500	51.26	51.52	51.84	0.36	0.49	0.61	0.44	0.57	0.70
2000	56.29	56.22	56.25	0.27	0.42	0.53	0.22	0.34	0.41
2500	62.30	63.02	63.85	0.24	0.37	0.47	0.19	0.28	0.33
3000	48.79	48.15	47.72	0.19	0.32	0.41	0.16	0.24	0.31
3500	38.83	38.58	38.31	0.16	0.29	0.37	0.09	0.18	0.26
4000	33.41	33.33	33.21	0.12	0.29	0.37	0.10	0.21	0.31
4500	29.78	29.76	29.73	0.12	0.30	0.42	0.08	0.22	0.35
5000	27.25	27.29	27.36	0.12	0.33	0.50	0.11	0.27	0.44
5500	24.25	24.37	24.47	0.19	0.37	0.56	0.18	0.33	0.53
6000	22.89	22.97	23.07	0.17	0.36	0.56	0.12	0.30	0.53
6500	21.16	21.30	21.47	0.15	0.37	0.58	0.15	0.35	0.55
7000	20.01	20.09	20.19	0.15	0.38	0.59	0.20	0.37	0.56
7500	19.05	19.17	19.18	0.24	0.44	0.62	0.20	0.37	0.54
8000	18.03	18.20	18.32	0.17	0.42	0.60	0.22	0.40	0.53
8500	17.51	17.74	17.98	0.24	0.45	0.58	0.28	0.45	0.55
9000	16.92	17.08	17.20	0.19	0.43	0.58	0.81	1.05	0.99
9500	16.19	16.27	16.38	0.25	0.55	0.73	0.40	0.64	0.79
10000	15.94	15.92	15.84	0.30	0.65	0.92	0.45	0.76	1.01
10500	15.72	15.84	15.76	0.45	0.81	1.16	0.59	0.99	1.40
11000	15.67	16.32	16.85	0.82	1.31	1.81	0.79	1.24	1.76

REV. X2

VLF-630+

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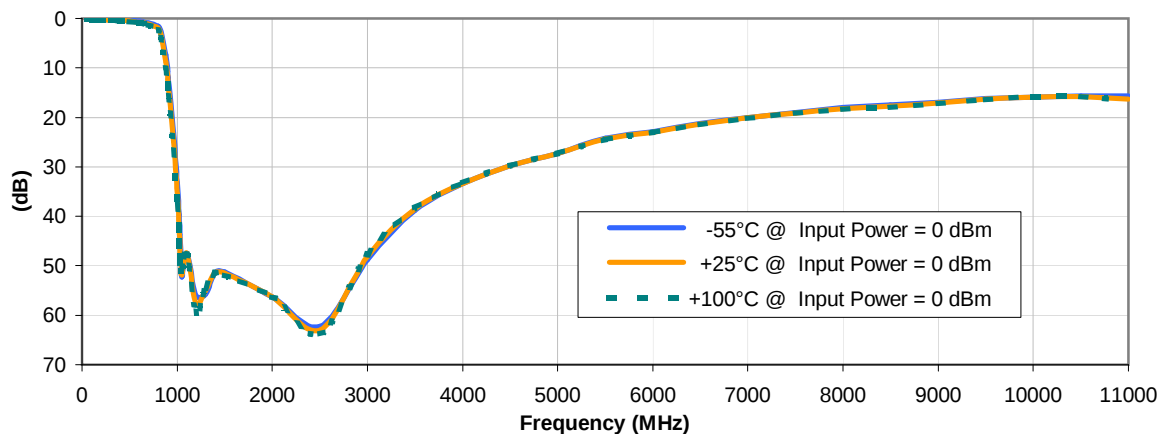


Coaxial Low Pass Filter

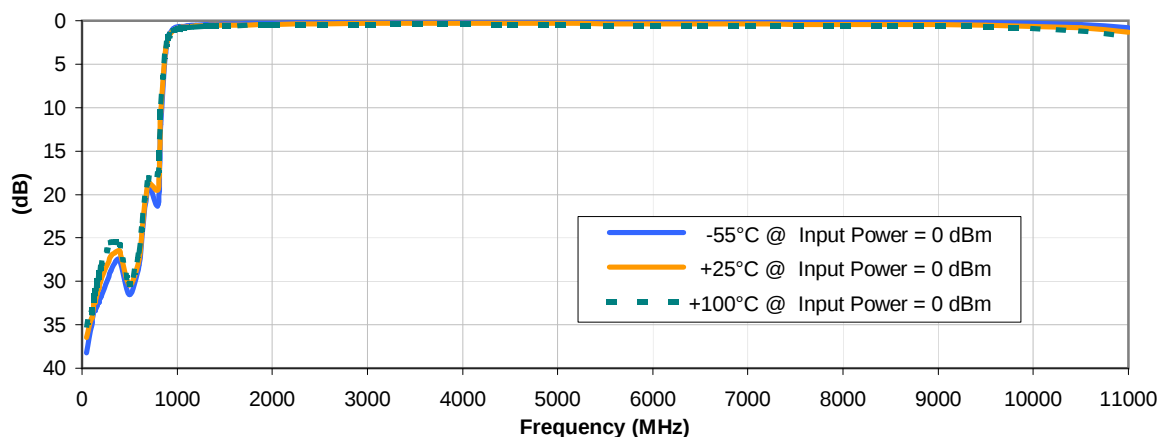
Typical Performance Curves

VLF-630+

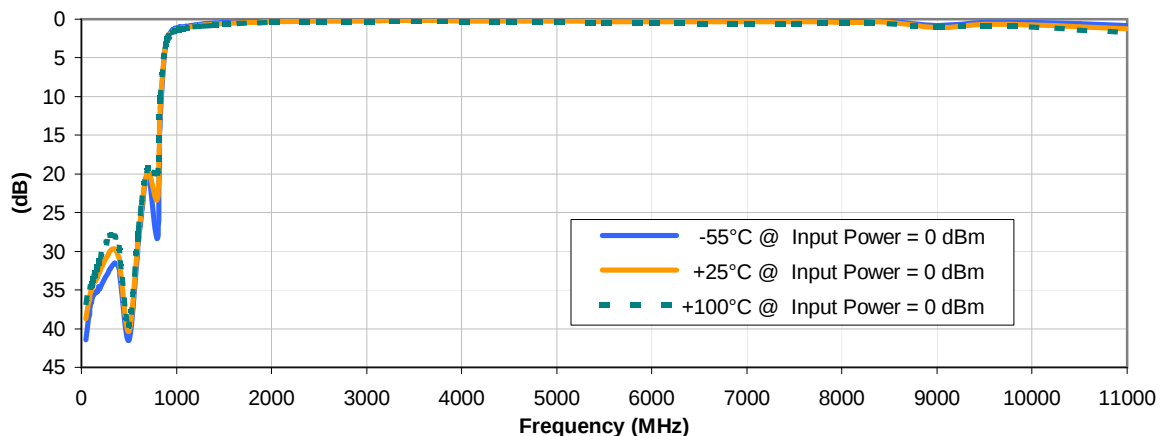
INSERTION LOSS vs. TEMPERATURE



INPUT RETURN LOSS vs. TEMPERATURE



OUTPUT RETURN LOSS vs. TEMPERATURE



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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. ± .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.



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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