

Coaxial Low Pass Filter

50Ω *DC to 1700 MHz

VLF-1700+



Generic photo used for illustration purposes only

CASE STYLE: FF704

Connectors	Model
SMA	VLF-1700+

+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*	10W 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, 10W
- temperature stable
- low cost
- protected by U.S. Patent 6,943,646

Applications

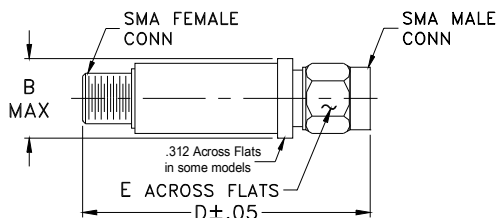
- harmonic rejection
- transmitters/receivers
- lab use

Electrical Specifications at 25°C

PASSBAND (MHz) (loss < 1.2 dB)	f _{co} , MHz Nom. (loss 3 dB)	STOP BAND (MHz) (loss, dB)			VSWR (:1)		NO. OF SECTIONS
		f 20 Min.	30 Typ.	fr 20 Typ.	Stopband Typ.	Passband Typ.	
Max.	Typ.						
*DC-1700	2050	2375	2500-6500	7000	20	1.2	7

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

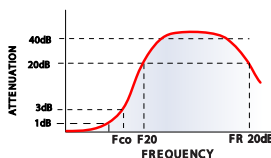
Outline Drawing



Outline Dimensions (inch/mm)

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

typical frequency response

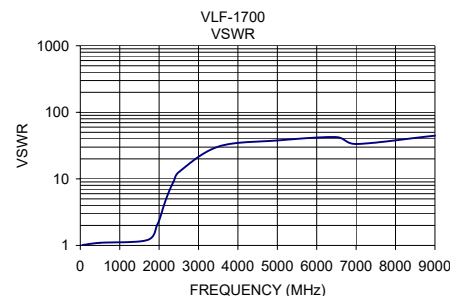
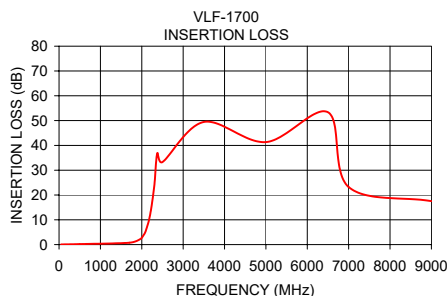


electrical schematic



Typical Performance Data at 25°C

Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)
50	0.05	1.01
500	0.21	1.09
1700	0.77	1.20
1950	2.11	2.03
2050	3.98	2.91
2100	5.73	3.64
2200	11.93	5.44
2300	23.47	7.53
2375	36.86	9.28
2500	33.29	12.61
3500	49.47	30.49
5000	41.34	37.77
6500	53.35	42.38
7000	23.20	33.42
9000	17.55	44.55



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-Circuit's 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-Circuit's website at www.minicircuits.com/MCLStore/terms.jsp



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Coaxial Low Pass Filter

VLF-1700+

Typical Performance Data

FREQ. (MHz)	INSERTION LOSS (dB)			INPUT RETURN LOSS (dB)			OUTPUT RETURNLOSS (dB)		
	@ -55° C	@ +25° C	@ +100° C	@ -55° C	@ +25° C	@ +100° C	@ -55° C	@ +25° C	@ +100° C
50	0.04	0.05	0.06	45.66	43.91	42.71	49.33	44.41	41.25
100	0.04	0.07	0.09	40.81	43.22	44.28	41.13	40.49	39.82
500	0.13	0.21	0.24	28.24	26.87	25.62	26.75	25.48	24.32
1000	0.25	0.33	0.39	22.64	22.11	21.62	21.91	21.24	20.70
1200	0.28	0.39	0.47	22.49	22.30	22.21	22.15	21.89	21.61
1500	0.40	0.54	0.64	28.37	28.40	29.10	31.14	32.37	35.30
1600	0.47	0.61	0.77	28.12	26.96	26.09	32.02	31.03	29.79
1700	0.58	0.77	0.94	21.69	20.73	19.88	22.01	21.18	20.21
1750	0.69	0.89	1.08	18.54	17.88	17.11	18.65	17.95	17.11
1785	0.78	1.00	1.20	16.67	16.10	15.47	16.70	16.09	15.31
1930	1.51	1.89	2.26	10.36	10.04	9.77	9.93	9.41	8.87
2000	2.31	2.83	3.40	7.85	7.70	7.53	7.25	6.82	6.38
2050	3.28	3.98	4.75	6.28	6.23	6.17	5.51	5.15	4.81
2070	3.78	4.57	5.43	5.64	5.64	5.65	4.83	4.51	4.23
2100	4.77	5.73	6.75	4.84	4.90	5.00	3.93	3.68	3.50
2160	7.60	8.92	10.36	3.55	3.76	3.96	2.48	2.43	2.40
2220	11.91	13.71	15.63	2.71	3.01	3.25	1.62	1.69	1.80
2260	15.79	18.03	20.38	2.35	2.64	2.88	1.30	1.46	1.59
2295	20.06	22.72	25.59	2.09	2.37	2.59	1.13	1.32	1.49
2320	23.75	26.87	30.12	1.96	2.22	2.45	1.08	1.27	1.45
2375	34.95	36.86	36.05	1.65	1.88	2.10	0.97	1.17	1.36
2400	37.94	36.15	34.59	1.54	1.78	1.97	0.94	1.14	1.34
2500	32.90	33.29	33.94	1.17	1.38	1.57	0.88	1.09	1.28
2605	37.07	38.73	40.74	0.92	1.11	1.28	0.81	1.01	1.19
2700	49.18	50.96	49.30	0.74	0.95	1.13	0.73	0.93	1.10
2995	37.68	37.87	38.13	0.51	0.72	0.89	0.58	0.76	0.87
3400	44.42	45.41	46.43	0.41	0.60	0.75	0.45	0.56	0.67
3755	64.56	61.19	58.69	0.37	0.54	0.68	0.30	0.43	0.52
4000	50.27	49.80	49.39	0.34	0.51	0.65	0.29	0.40	0.50
4500	44.24	44.19	44.13	0.28	0.48	0.62	0.19	0.33	0.43
5500	39.32	39.34	39.53	0.21	0.41	0.61	0.16	0.31	0.47
6000	39.36	39.82	40.43	0.17	0.39	0.59	0.14	0.28	0.46
6320	43.51	45.00	47.40	0.19	0.42	0.64	0.13	0.31	0.51
6500	52.57	53.35	48.21	0.18	0.41	0.63	0.13	0.31	0.51
6550	52.36	48.11	43.78	0.18	0.43	0.66	0.15	0.33	0.52
6700	39.60	37.06	34.68	0.16	0.41	0.64	0.14	0.34	0.54
7000	25.14	23.20	21.19	0.23	0.52	0.84	0.29	0.55	0.88
7210	15.20	12.72	10.45	0.64	1.32	2.34	1.07	2.16	4.31
8000	16.67	17.11	17.54	0.25	0.49	0.71	0.26	0.44	0.59
9000	17.29	17.55	17.82	0.14	0.39	0.57	0.25	0.43	0.54

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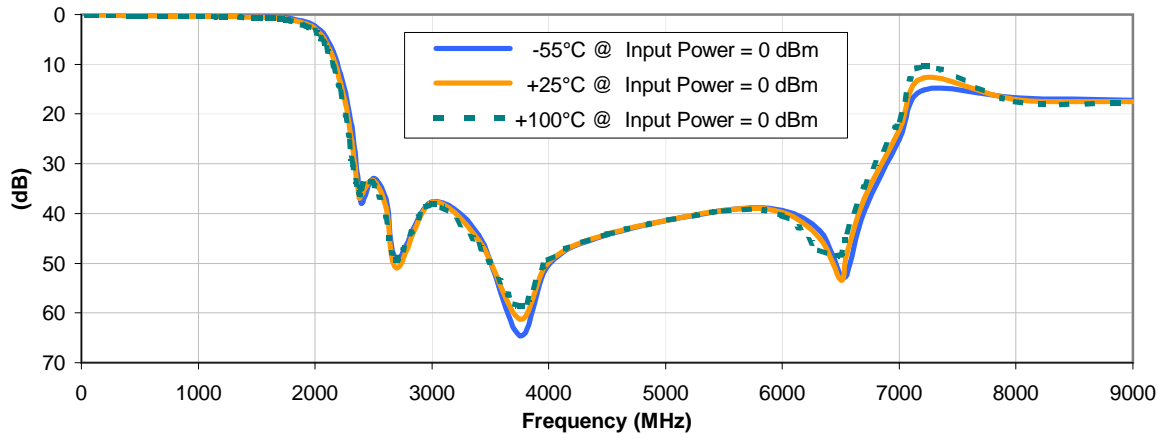


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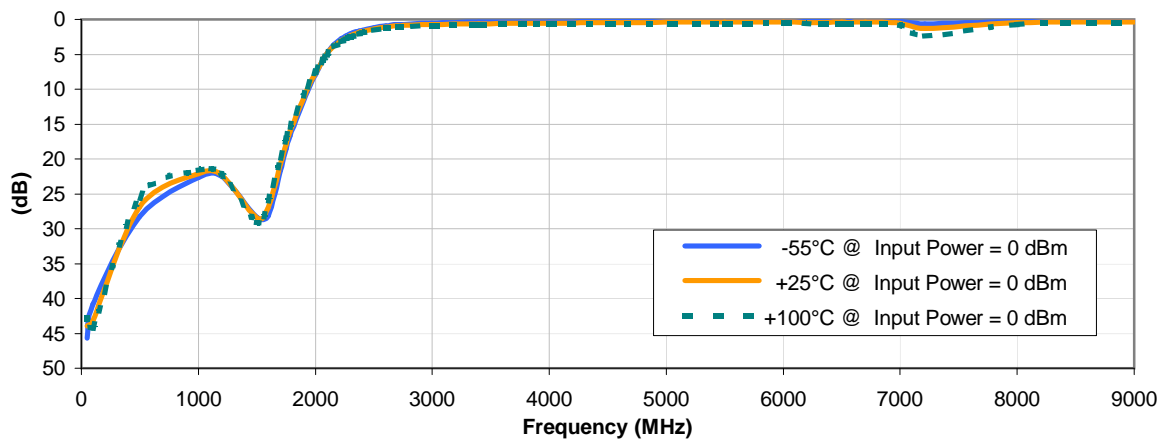


Typical Performance Curves

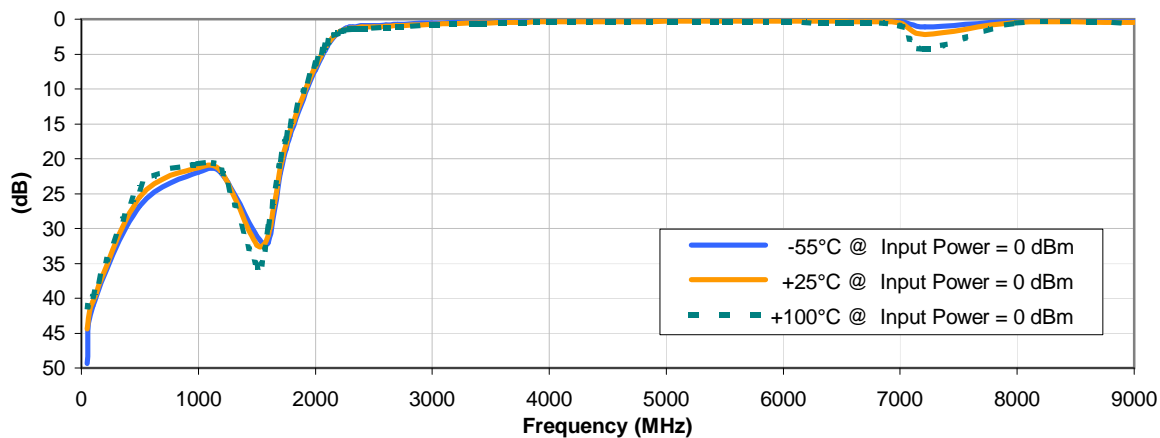
INSERTION LOSS vs. TEMPERATURE



INPUT RETURN LOSS vs. TEMPERATURE



OUTPUT RETURN LOSS vs. TEMPERATURE



Case Style

FF

FF704

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