Coaxial

Low Pass Filter

50Ω *DC to 1000 MHz

VLF-1000+
VLF-1000

Generic photo used for illustration purposes only

CASE STYLE: FF704

Connectors	Model
SMA	VLF-1000(+)

+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.

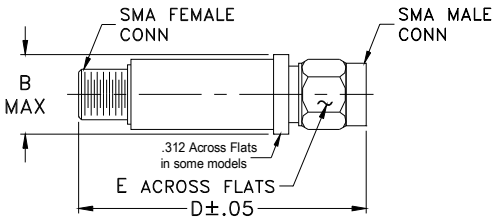
Features

- rugged unibody 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

Outline Drawing



Outline Dimensions (inch / mm)

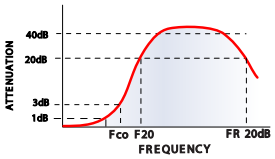
B	D	E	wt
.410	1.43	.312	grams
10.41	36.32	7.92	10.0

Electrical Specifications at 25°C

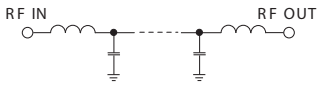
PASSBAND (MHz)	fco, MHz Nom.	STOP BAND (MHz) (loss, dB)			VSWR (:1)		NO. OF SECTIONS
(loss < 1 dB)	(loss 3 dB)	F 20	30	Fr 20	Stopband	Passband	
Max.	Typ.	Min.	Typ.	Typ.	Typ.	Typ.	
*DC-1000	1300	1550	1900-5000	5500	20	1.3	7

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

typical frequency response

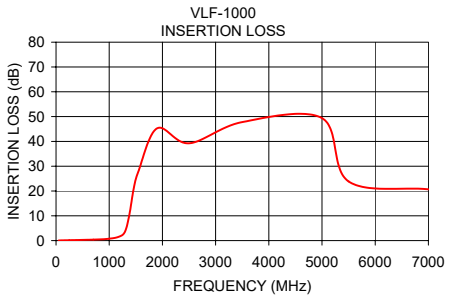


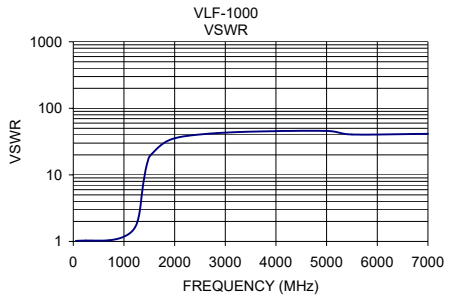
electrical schematic



Typical Performance Data at 25°C

Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)
50	0.07	1.02
250	0.18	1.03
700	0.39	1.04
1000	0.77	1.18
1200	1.69	1.55
1300	3.79	2.53
1380	10.57	7.31
1460	20.88	15.13
1550	27.95	20.70
1900	45.25	33.42
2500	39.24	40.41
3500	47.78	44.55
5000	49.39	45.72
5500	23.86	40.41
7000	20.67	41.37





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

Coaxial Low Pass Filter VLF-1000

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
10	0.02	0.05	0.05	50.05	46.06	45.16	51.11	46.06	45.03
50	0.04	0.07	0.07	44.26	40.64	39.53	45.49	40.82	39.03
100	0.08	0.10	0.13	41.58	41.97	41.50	39.46	37.43	35.91
500	0.21	0.30	0.33	34.24	31.95	29.95	27.73	26.54	25.52
800	0.35	0.47	0.55	42.88	39.50	37.37	36.73	35.48	34.35
900	0.45	0.58	0.69	30.18	29.40	28.62	30.53	30.08	29.32
950	0.51	0.68	0.77	25.68	24.98	24.29	25.44	24.90	24.25
1000	0.59	0.77	0.90	22.33	21.70	21.05	22.19	21.63	21.01
1015	0.62	0.78	0.94	21.25	20.66	20.06	21.24	20.67	20.11
1050	0.73	0.91	1.07	19.49	18.97	18.41	19.41	18.94	18.42
1076	0.78	0.99	1.15	18.26	17.77	17.22	18.44	18.00	17.54
1100	0.86	1.08	1.27	17.10	16.69	16.22	17.49	17.14	16.75
1200	1.37	1.69	2.00	13.68	13.32	12.96	15.72	15.96	16.27
1230	1.63	2.02	2.41	12.54	12.09	11.67	15.68	16.26	16.95
1280	2.42	3.04	3.67	9.56	8.91	8.27	14.38	14.68	14.83
1300	3.02	3.79	4.61	7.93	7.27	6.66	12.57	12.49	12.21
1325	4.15	5.22	6.30	5.87	5.32	4.85	9.68	9.47	9.12
1375	8.36	9.97	11.50	2.69	2.57	2.47	5.28	5.33	5.32
1400	11.38	13.12	14.77	1.86	1.89	1.90	4.06	4.25	4.36
1425	14.65	16.42	18.07	1.38	1.46	1.53	3.32	3.57	3.78
1455	18.58	20.28	21.80	1.04	1.19	1.30	2.73	3.01	3.25
1500	23.64	24.95	26.03	0.80	0.97	1.09	2.19	2.46	2.70
1550	27.12	27.95	28.58	0.67	0.84	0.97	1.75	2.02	2.23
1620	29.49	30.01	30.44	0.57	0.73	0.86	1.32	1.54	1.73
1700	31.77	32.34	32.87	0.49	0.66	0.79	0.97	1.16	1.31
1800	36.01	36.86	37.71	0.40	0.59	0.69	0.71	0.86	0.97
1850	39.25	40.32	41.49	0.40	0.58	0.70	0.61	0.75	0.86
1900	43.75	45.25	47.13	0.36	0.52	0.67	0.55	0.68	0.77
1985	58.20	55.85	53.08	0.33	0.51	0.65	0.43	0.55	0.64
2500	39.05	39.24	39.39	0.27	0.43	0.56	0.23	0.30	0.35
3000	43.27	43.61	43.81	0.26	0.41	0.51	0.16	0.24	0.28
3500	47.65	47.78	47.80	0.24	0.39	0.50	0.11	0.21	0.28
4000	47.24	47.33	47.34	0.18	0.37	0.48	0.09	0.20	0.30
5000	52.13	49.39	47.28	0.16	0.38	0.55	0.12	0.28	0.42
5095	44.29	42.66	41.22	0.13	0.35	0.55	0.12	0.29	0.44
5200	38.44	37.10	35.92	0.13	0.35	0.55	0.14	0.32	0.47
5500	25.15	23.86	22.63	0.18	0.43	0.66	0.34	0.59	0.87
5755	11.17	9.71	9.28	1.04	1.75	2.22	3.47	7.25	12.32
6895	20.09	20.71	21.35	0.16	0.40	0.61	0.83	1.66	3.13
7000	21.49	20.67	20.12	0.16	0.42	0.64	4.21	3.42	2.06
8050	18.74	19.01	19.25	0.19	0.44	0.60	0.19	0.34	0.47

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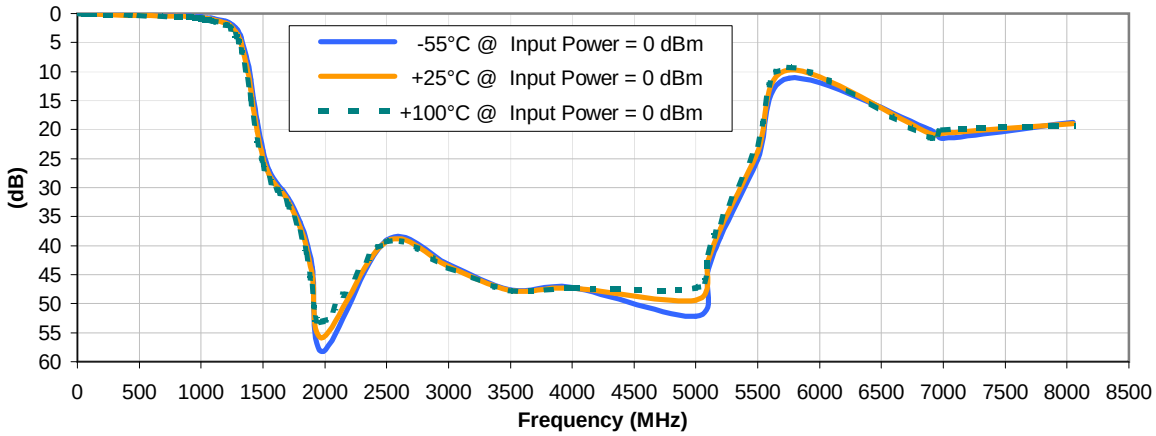
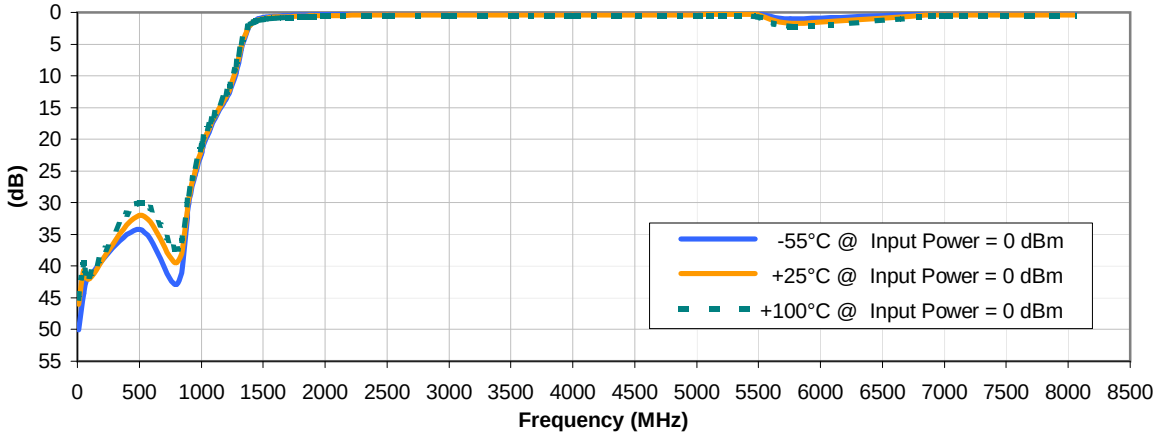
Typical Performance Curves

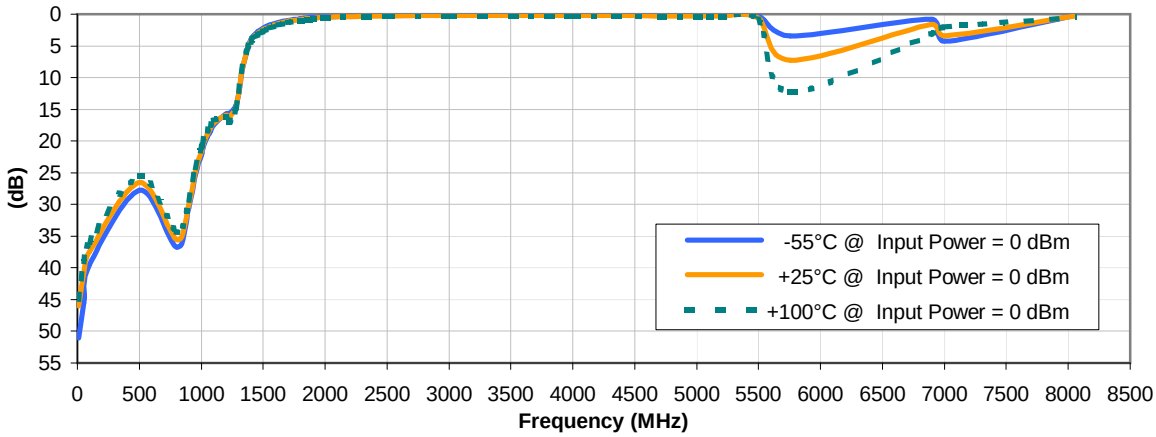
INSERTION LOSS vs. TEMPERATURE



INPUT RETURN LOSS vs. TEMPERATURE



OUTPUT RETURN LOSS vs. TEMPERATURE



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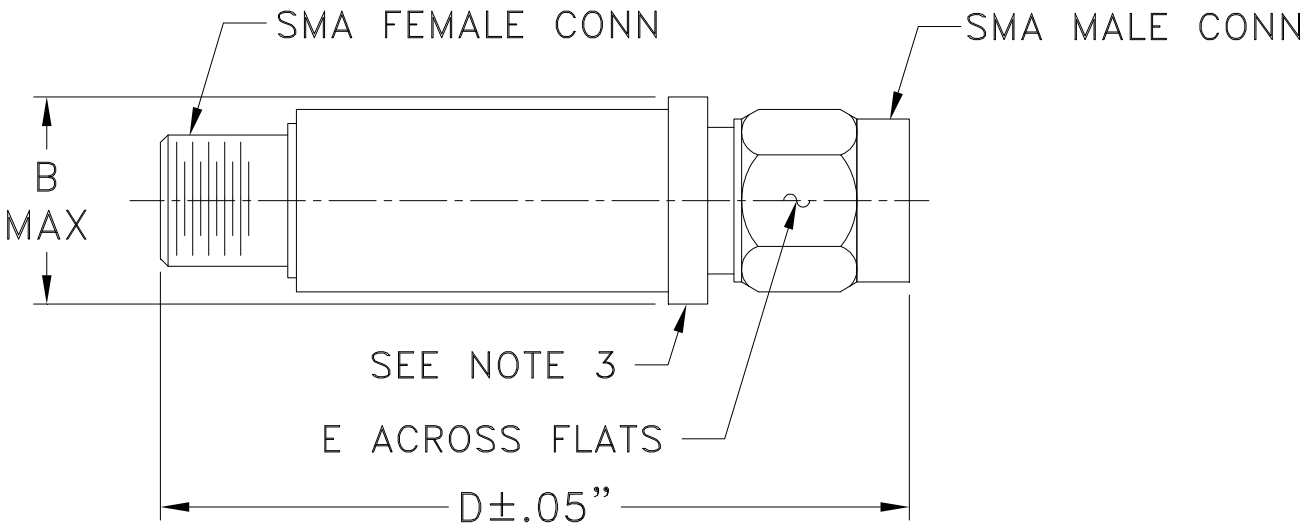
Case Style FF

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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Mini-Circuits

Environmental Specifications ENV28

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

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