

Coaxial Low Pass Filter

VLF-3000+

50Ω *DC to 3000 MHz



CASE STYLE: FF704

Connectors	Model
SMA	VLF-3000+

+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

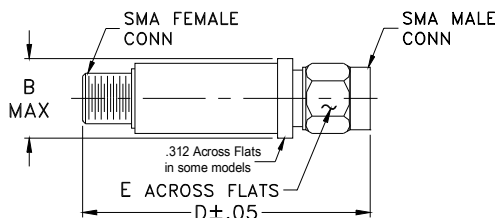
- harmonic rejection
- transmitters/receivers
- lab use

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-3000	3600	4550	4780-7500	10000	20	1.2	7

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

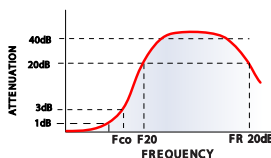
Outline Drawing



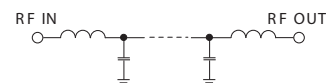
Outline Dimensions (inch/mm)

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

typical frequency response

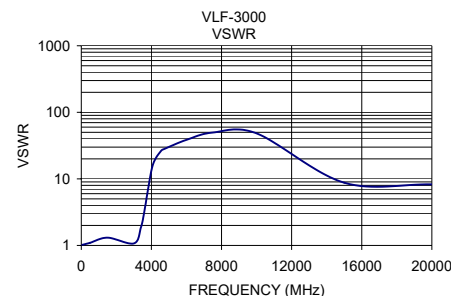
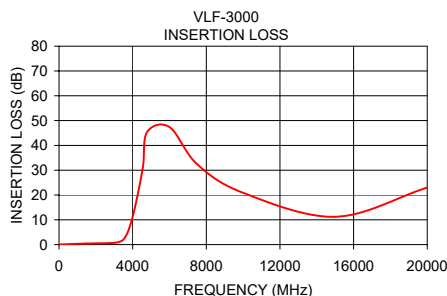


electrical schematic



Typical Performance Data at 25°C

Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)
50	0.06	1.02
500	0.17	1.09
1500	0.41	1.31
3000	0.72	1.07
3400	1.51	1.86
3600	3.08	3.27
3800	6.38	6.83
4100	14.30	16.72
4550	31.05	26.33
4780	45.38	28.49
6000	47.38	38.61
7500	32.41	49.64
10000	20.88	48.26
15000	11.22	8.77
20000	23.02	8.27



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



Coaxial Low Pass Filter

VLF-3000+

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	0.06	0.06	0.07	44.58	40.80	36.96	48.78	41.91	37.37
100	0.07	0.08	0.09	39.03	41.68	40.21	39.30	40.99	38.22
500	0.14	0.17	0.22	28.29	26.90	24.24	28.25	26.67	24.13
1000	0.23	0.29	0.34	20.69	20.50	20.63	20.47	20.31	20.29
2000	0.41	0.50	0.59	16.95	17.06	17.09	17.17	17.28	17.39
2500	0.47	0.57	0.68	18.88	19.85	20.48	18.96	19.94	20.54
3000	0.57	0.72	0.87	31.26	29.26	26.81	27.20	26.26	25.61
3240	0.80	1.00	1.21	16.93	15.91	15.18	17.13	16.24	15.73
3580	2.49	2.86	3.28	6.08	5.88	5.69	6.41	6.23	5.98
3600	2.70	3.08	3.52	5.64	5.48	5.31	5.97	5.81	5.58
3720	4.37	4.83	5.39	3.52	3.49	3.44	3.81	3.78	3.66
3940	9.12	9.73	10.50	1.48	1.57	1.66	1.72	1.81	1.83
4120	14.14	14.91	15.81	0.88	1.00	1.13	1.08	1.21	1.31
4280	19.25	20.18	21.20	0.66	0.80	0.93	0.85	1.01	1.15
4350	21.70	22.71	23.79	0.61	0.75	0.88	0.80	0.97	1.13
4410	23.94	25.01	26.15	0.56	0.72	0.85	0.77	0.95	1.12
4530	28.88	30.10	31.41	0.52	0.67	0.81	0.73	0.93	1.12
4550	29.79	31.05	32.38	0.51	0.66	0.80	0.72	0.92	1.12
4710	38.32	40.00	41.77	0.47	0.63	0.76	0.71	0.93	1.14
4780	43.31	45.38	47.52	0.45	0.61	0.74	0.72	0.93	1.16
4910	57.26	58.61	58.94	0.43	0.59	0.71	0.73	0.95	1.18
5020	54.77	54.28	54.72	0.42	0.57	0.70	0.74	0.97	1.20
5450	59.64	58.04	55.68	0.37	0.51	0.64	0.76	0.96	1.13
5900	47.31	47.28	47.17	0.33	0.47	0.62	0.69	0.88	0.99
6410	57.60	59.38	58.73	0.24	0.42	0.62	0.56	0.73	0.86
7000	39.15	38.67	37.95	0.20	0.38	0.62	0.39	0.61	0.79
7500	32.58	32.41	32.11	0.20	0.35	0.56	0.29	0.53	0.75
8000	28.79	28.77	28.68	0.20	0.33	0.51	0.26	0.49	0.73
8500	26.10	26.23	26.26	0.18	0.33	0.50	0.29	0.48	0.72
9000	24.17	24.31	24.36	0.15	0.35	0.52	0.32	0.48	0.69
9500	22.62	22.57	22.56	0.12	0.37	0.56	0.34	0.51	0.68
10000	21.29	20.88	20.78	0.09	0.36	0.57	0.33	0.50	0.64
10500	19.99	19.81	19.65	0.14	0.38	0.58	0.32	0.47	0.58
11000	18.79	18.90	18.80	0.20	0.41	0.59	0.30	0.46	0.57
11500	17.65	18.02	18.06	0.25	0.46	0.64	0.31	0.47	0.58
12000	17.62	17.93	17.43	0.59	1.10	1.70	0.32	0.52	0.72
13000	14.73	14.18	13.96	0.28	0.64	1.03	0.48	0.73	1.00
14000	11.19	11.59	11.74	0.78	1.10	1.59	1.04	1.29	1.65
16000	10.22	11.06	11.85	2.42	2.67	3.12	1.43	1.60	1.79
18000	25.21	25.97	26.26	1.49	2.03	2.87	0.39	0.74	1.05
20000	20.32	23.02	25.89	2.04	2.11	2.21	0.82	1.21	1.74

REV. X1
VLF-3000+
080720
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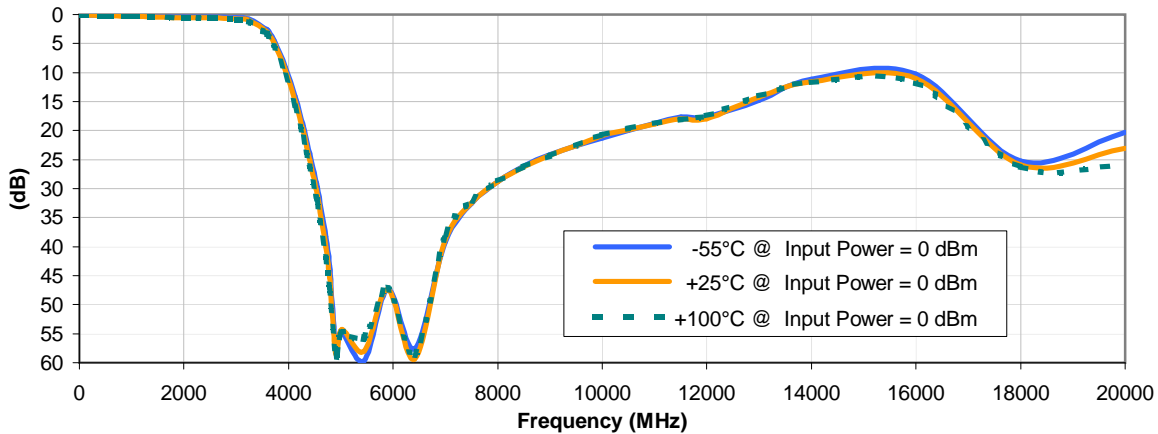


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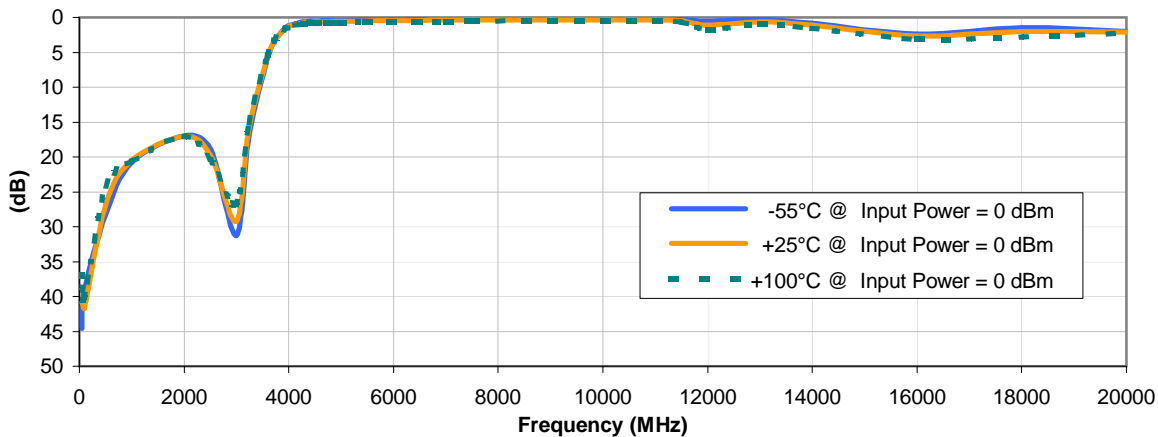


Typical Performance Curves

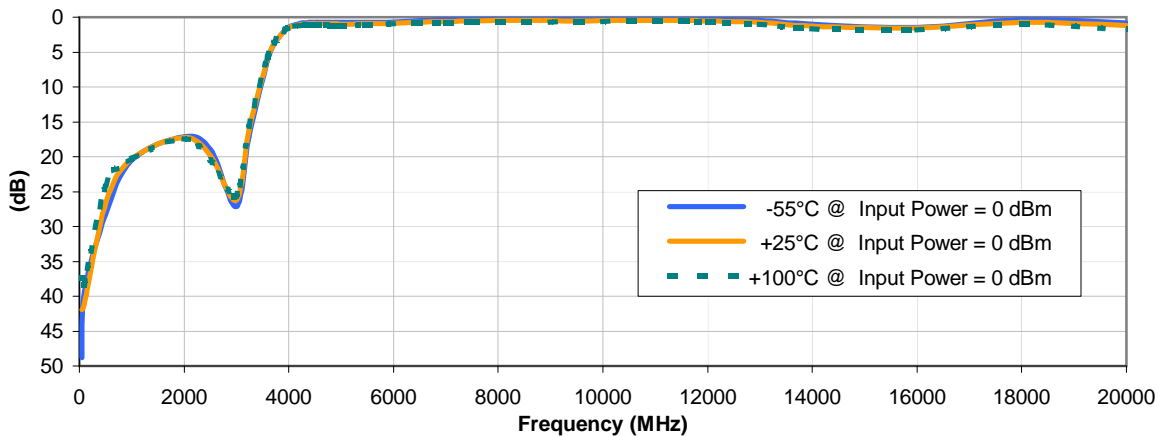
INSERTION LOSS vs. TEMPERATURE



INPUT RETURN LOSS vs. TEMPERATURE



OUTPUT RETURN LOSS vs. TEMPERATURE

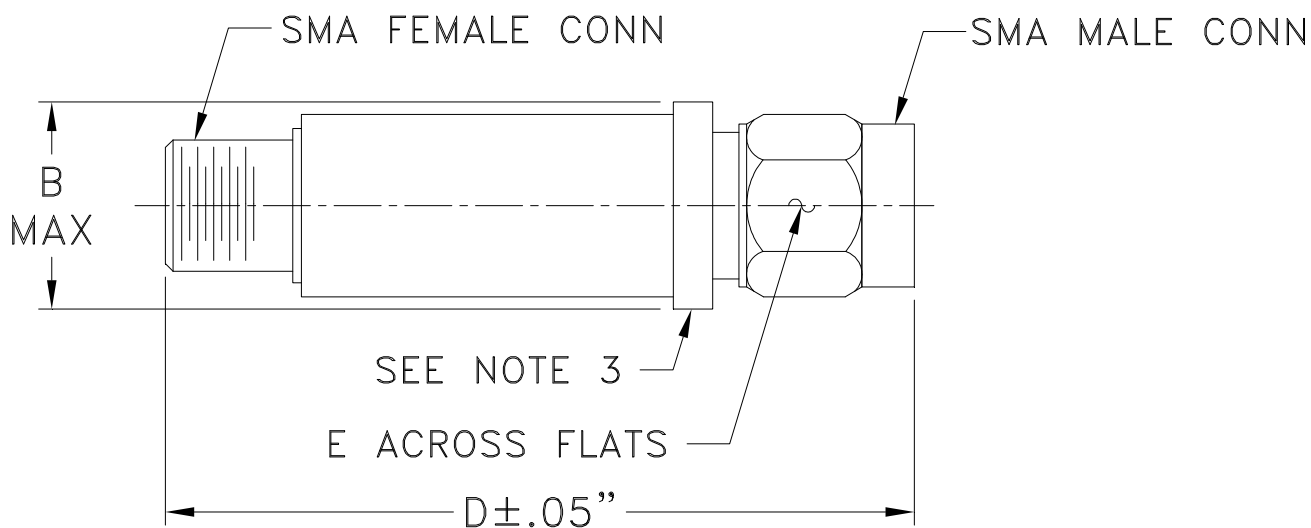


Case Style

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