

Coaxial Low Pass Filter

50Ω

*DC to 120 MHz

VLF-120+



Generic photo used for illustration purposes only

CASE STYLE: FF704

Connectors	Model
SMA	VLF-120+

+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

* 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

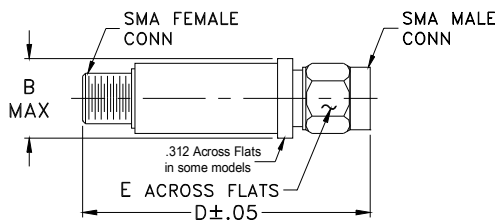
- harmonic rejection
- transmitters/receivers
- lab use

Electrical Specifications at 25°C

PASSBAND (MHz) (loss < 1 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-120	195	280	300-1850	4750	20	1.2	7

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

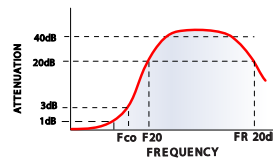
Outline Drawing



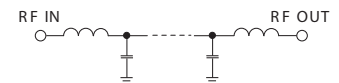
Outline Dimensions (inch/mm)

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

typical frequency response

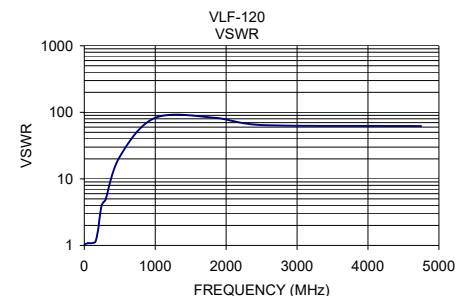
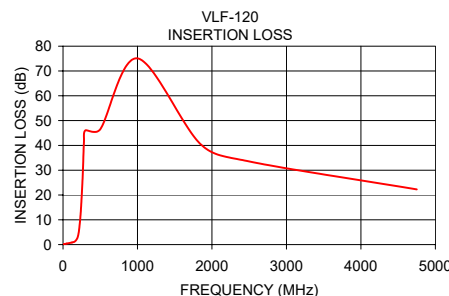


electrical schematic



Typical Performance Data at 25°C

Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)
1	0.13	1.04
50	0.42	1.08
120	0.84	1.09
160	1.31	1.16
195	2.90	1.74
216	6.14	2.62
240	14.01	3.81
265	28.41	4.40
280	41.01	4.56
300	46.04	4.87
500	46.50	21.46
1000	75.07	82.73
1850	40.40	82.73
2500	33.53	64.35
4750	22.25	62.05



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



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VLF-120+

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
1	0.12	0.13	0.22	33.64	34.14	32.64	35.90	34.14	32.91
20	0.24	0.29	0.33	29.30	27.52	26.23	27.51	26.49	25.51
50	0.37	0.42	0.48	29.03	28.61	27.56	27.72	27.29	26.63
51	0.38	0.43	0.49	28.90	28.55	27.53	27.68	27.28	26.62
60	0.41	0.47	0.53	27.75	27.94	27.30	26.62	26.54	26.18
80	0.50	0.57	0.63	25.89	26.63	26.59	24.78	25.10	25.19
90	0.56	0.62	0.69	25.59	26.41	26.53	24.41	24.81	25.00
100	0.62	0.68	0.76	25.64	26.49	26.68	24.33	24.72	24.94
110	0.69	0.76	0.84	26.13	26.88	27.05	24.64	24.98	25.17
120	0.76	0.84	0.92	27.13	27.65	27.67	25.54	25.74	25.83
140	0.92	1.02	1.12	28.92	28.43	27.95	30.13	29.45	28.80
150	1.03	1.14	1.25	26.63	26.28	25.98	30.05	29.28	28.49
180	1.78	1.91	2.04	15.24	15.80	16.25	14.28	14.58	14.85
190	2.37	2.49	2.63	12.14	12.77	13.30	10.64	10.95	11.24
195	2.79	2.90	3.04	10.75	11.40	11.95	9.06	9.37	9.66
200	3.33	3.43	3.57	9.48	10.15	10.70	7.64	7.95	8.23
240	14.24	14.01	13.94	4.20	4.67	5.11	1.81	1.98	2.15
250	19.23	18.83	18.64	3.88	4.30	4.71	1.45	1.59	1.74
260	25.48	24.83	24.47	3.69	4.09	4.48	1.25	1.38	1.51
270	33.55	32.46	31.78	3.57	3.97	4.34	1.13	1.25	1.37
280	42.44	41.01	39.96	3.47	3.87	4.25	1.06	1.17	1.28
285	44.27	43.29	42.43	3.41	3.82	4.21	1.03	1.13	1.24
290	44.74	43.98	43.36	3.35	3.76	4.15	1.00	1.11	1.21
300	47.25	46.04	45.23	3.21	3.62	4.02	0.96	1.06	1.16
400	43.30	43.01	42.87	1.50	1.70	1.90	0.71	0.79	0.87
500	46.07	46.50	46.81	0.70	0.81	0.91	0.57	0.64	0.71
800	50.66	50.18	49.79	0.23	0.26	0.31	0.31	0.36	0.42
1000	74.53	75.07	73.04	0.18	0.21	0.25	0.23	0.27	0.33
1050	67.65	70.20	72.52	0.19	0.22	0.26	0.22	0.26	0.31
1200	71.23	72.75	74.50	0.17	0.21	0.25	0.19	0.23	0.28
1400	55.85	56.28	56.56	0.17	0.22	0.26	0.16	0.20	0.25
1500	50.38	50.78	50.98	0.16	0.20	0.26	0.16	0.20	0.24
1800	41.92	42.17	42.30	0.16	0.21	0.28	0.18	0.21	0.25
1850	39.88	40.40	40.77	0.15	0.21	0.28	0.19	0.22	0.26
2000	37.31	37.51	37.68	0.15	0.22	0.29	0.15	0.19	0.22
2050	37.29	37.26	37.27	0.16	0.23	0.31	0.16	0.19	0.22
2200	35.99	36.14	36.21	0.13	0.21	0.30	0.16	0.19	0.23
2400	35.54	35.41	35.21	0.14	0.22	0.32	0.25	0.26	0.29
2800	30.28	30.48	30.48	0.16	0.25	0.34	0.41	0.44	0.44
3000	28.38	28.63	28.94	0.47	0.46	0.50	0.35	0.37	0.34
3050	27.79	28.09	28.71	0.70	0.78	0.76	0.40	0.42	0.39
3500	24.43	24.52	24.46	0.19	0.30	0.46	0.23	0.30	0.41
4000	23.18	23.29	23.31	0.09	0.21	0.37	0.30	0.36	0.44
4050	23.04	23.15	23.19	0.07	0.19	0.35	0.34	0.40	0.48
4100	22.98	23.09	23.15	0.13	0.25	0.42	0.35	0.42	0.50
4200	22.65	22.78	22.85	0.09	0.21	0.38	0.52	0.56	0.62
4400	22.56	22.60	22.65	0.08	0.21	0.40	1.65	1.47	1.39
4500	23.05	22.96	22.92	0.11	0.25	0.44	3.70	3.26	2.89
4750	21.87	22.25	22.63	0.15	0.28	0.47	1.21	1.46	1.80
5000	21.15	21.21	21.36	0.75	0.87	0.95	0.84	0.85	0.93
9000	15.37	15.76	16.35	5.17	5.02	5.35	1.93	1.88	1.95
10000	15.48	15.22	15.58	4.85	5.09	5.69	5.95	5.49	5.23
12000	15.73	16.64	18.88	3.93	3.84	3.70	4.08	4.69	4.91
14000	20.35	20.79	19.41	18.03	12.28	6.92	4.96	6.55	9.46
15000	12.76	13.42	14.23	2.74	2.75	3.18	2.94	3.09	3.18



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VLF-120+

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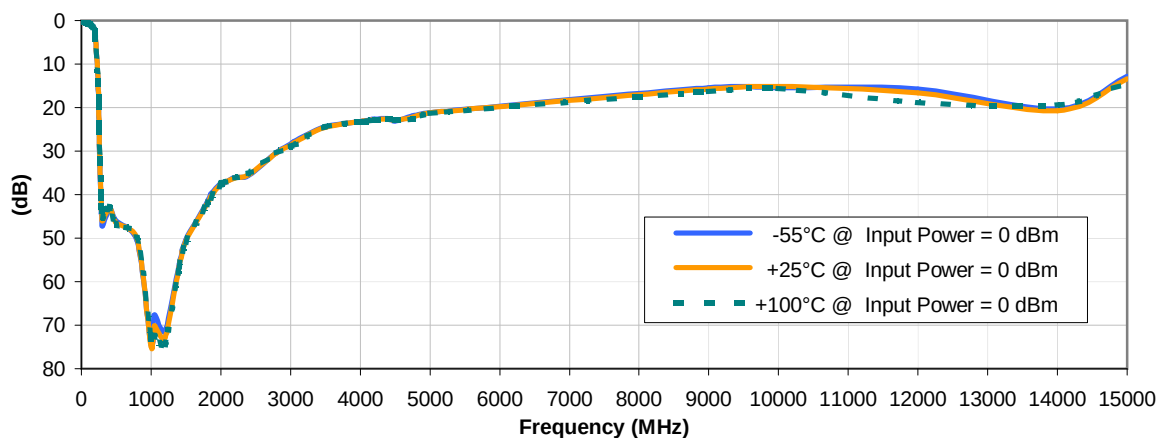
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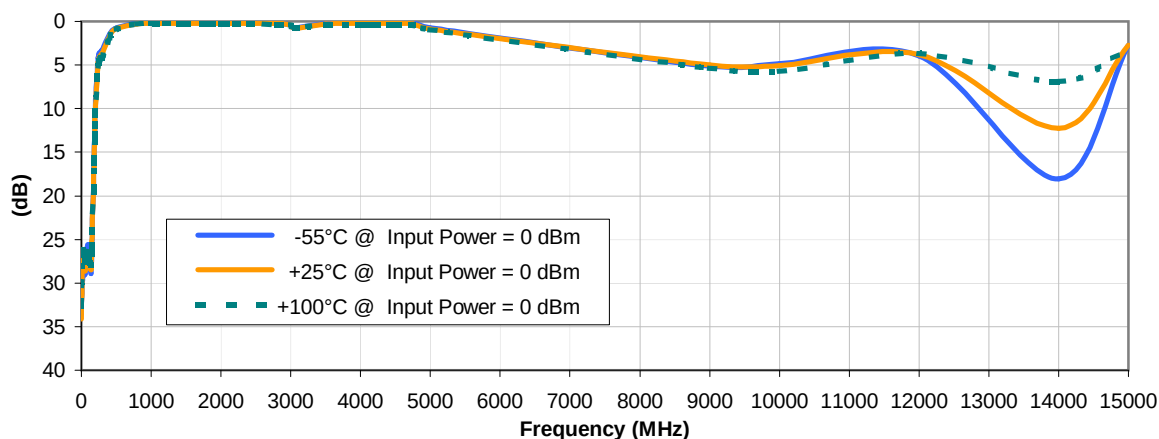
Typical Performance Curves

VLF-120+

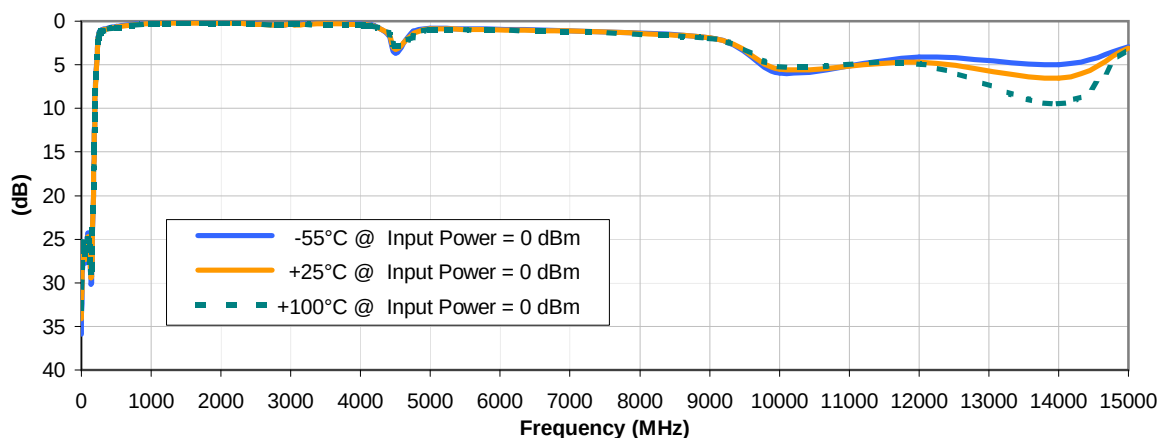
INSERTION LOSS vs. TEMPERATURE



INPUT RETURN LOSS vs. TEMPERATURE



OUTPUT RETURN LOSS vs. TEMPERATURE



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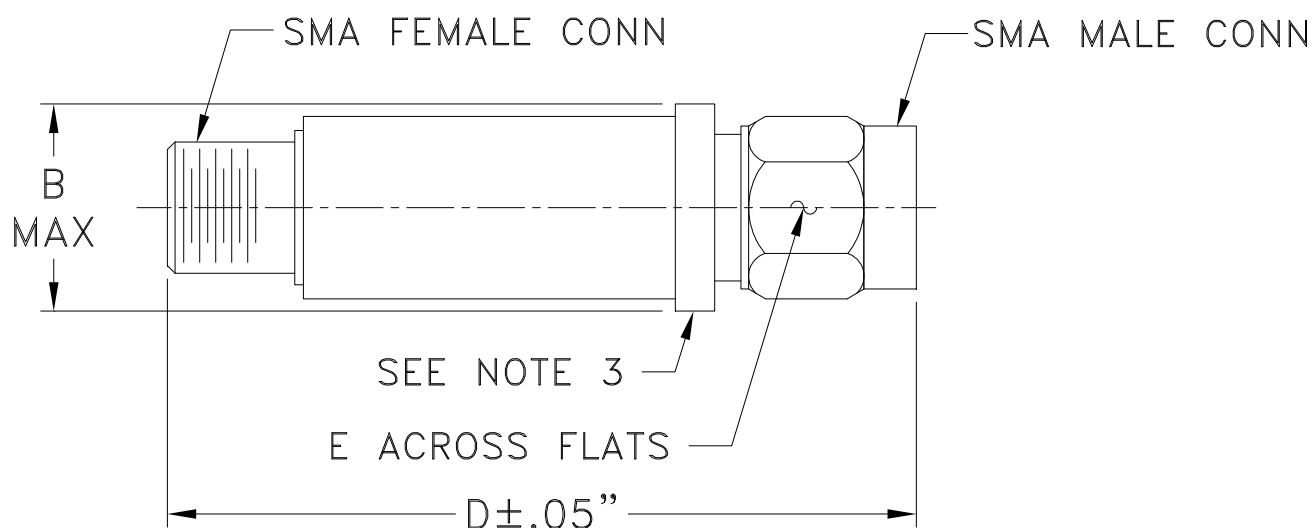
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Outline Dimensions



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