

Coaxial Low Pass Filter

50Ω

*DC to 105 MHz

VLF-105+



Generic photo used for illustration purposes only

CASE STYLE: FF704

Connectors	Model
SMA	VLF-105+

+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

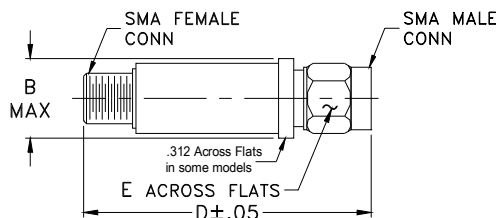
- harmonic rejection
- transmitters/receivers
- lab use

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-105	180	250	265-1650	4750	20	1.2	7

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

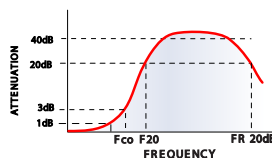
Outline Drawing



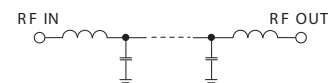
Outline Dimensions (inch/mm)

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

typical frequency response

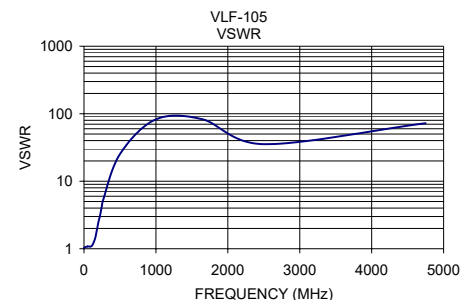
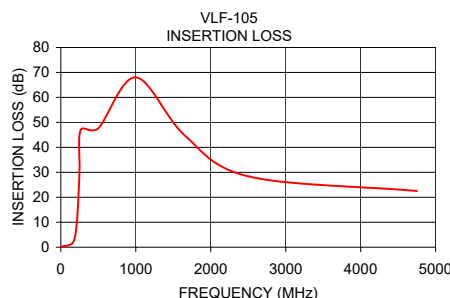


electrical schematic



Typical Performance Data at 25°C

Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)
1	0.17	1.04
50	0.45	1.08
105	0.78	1.09
150	1.45	1.37
180	3.10	1.92
200	6.17	2.45
220	12.57	2.99
240	23.78	3.85
250	31.56	4.41
265	47.01	5.23
500	47.65	25.19
1000	68.04	82.73
1650	44.82	82.73
2500	28.37	35.46
4750	22.50	72.39



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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VLF-105+

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	0.17	0.22	33.64	34.14	32.64	35.9	34.14	32.91
20	0.27	0.32	0.37	27.64	26.08	24.76	26.04	25.20	24.11
30	0.31	0.36	0.41	29.75	27.19	25.75	27.34	26.00	24.99
40	0.35	0.40	0.46	30.69	27.87	26.34	27.98	26.53	25.57
50	0.39	0.45	0.52	30.73	28.16	26.53	27.26	26.01	25.12
60	0.43	0.49	0.56	30.55	28.29	26.57	26.67	25.66	24.79
70	0.48	0.54	0.62	30.48	28.44	26.65	26.10	25.31	24.49
80	0.53	0.60	0.68	30.48	28.38	26.62	25.83	25.10	24.32
90	0.59	0.66	0.75	30.70	28.28	26.59	25.71	24.90	24.17
100	0.66	0.74	0.83	30.16	27.63	26.15	25.52	24.57	23.87
105	0.70	0.78	0.88	29.28	26.96	25.66	25.29	24.31	23.62
125	0.89	0.99	1.10	23.19	22.50	22.05	22.29	21.75	21.31
180	3.01	3.10	3.23	9.41	10.04	10.52	7.44	7.72	7.96
195	5.13	5.16	5.27	7.32	8.02	8.57	4.54	4.80	5.04
215	10.76	10.57	10.56	5.68	6.38	6.95	2.18	2.38	2.57
225	15.27	14.88	14.76	5.03	5.68	6.24	1.59	1.77	1.93
235	21.13	20.47	20.18	4.36	4.96	5.47	1.29	1.43	1.58
250	32.72	31.56	30.95	3.50	4.01	4.44	1.08	1.21	1.33
255	37.44	36.13	35.42	3.28	3.76	4.17	1.04	1.17	1.28
265	47.59	47.01	46.49	2.91	3.36	3.72	0.99	1.11	1.22
270	49.05	50.66	51.87	2.77	3.19	3.55	0.97	1.08	1.19
300	38.03	38.53	38.90	2.18	2.52	2.82	0.87	0.98	1.08
330	35.86	35.99	36.13	1.79	2.07	2.31	0.80	0.90	1.00
400	43.05	42.57	42.33	1.12	1.29	1.46	0.68	0.77	0.85
455	57.12	57.70	57.10	0.78	0.90	1.03	0.60	0.68	0.76
500	47.05	47.65	48.05	0.59	0.69	0.80	0.54	0.61	0.69
585	44.29	44.42	44.54	0.39	0.45	0.53	0.45	0.52	0.58
700	47.58	47.38	47.27	0.27	0.31	0.37	0.35	0.41	0.48
800	54.31	53.50	53.10	0.22	0.26	0.30	0.30	0.36	0.42
890	67.14	64.19	62.47	0.20	0.23	0.28	0.25	0.30	0.36
1000	65.52	68.04	70.18	0.19	0.21	0.26	0.23	0.27	0.33
1650	44.42	44.82	44.87	0.16	0.21	0.28	0.23	0.26	0.30
2000	35.39	35.61	35.79	0.14	0.21	0.30	0.15	0.20	0.24
3000	27.05	27.57	27.83	0.56	0.75	0.78	0.16	0.22	0.27
4750	22.07	22.50	22.91	0.08	0.24	0.48	1.14	1.50	1.92
5000	21.16	21.30	21.55	0.19	0.33	0.57	0.86	0.94	1.04
7000	17.04	17.12	17.17	0.71	0.78	0.88	1.08	1.12	1.21
9000	22.40	21.56	21.30	11.63	9.03	7.68	2.10	1.93	1.87
11000	26.63	26.12	26.07	10.83	12.39	14.35	6.32	6.37	6.83
13000	19.04	16.76	16.04	5.03	4.86	5.01	13.87	10.81	7.89
15000	10.79	11.03	11.52	4.26	3.75	3.92	2.02	2.19	2.43

REV. X1

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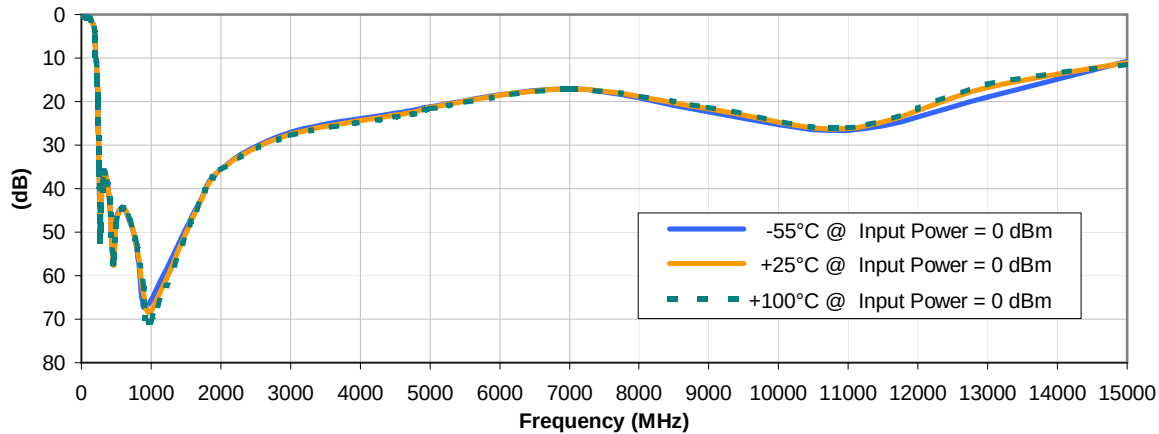


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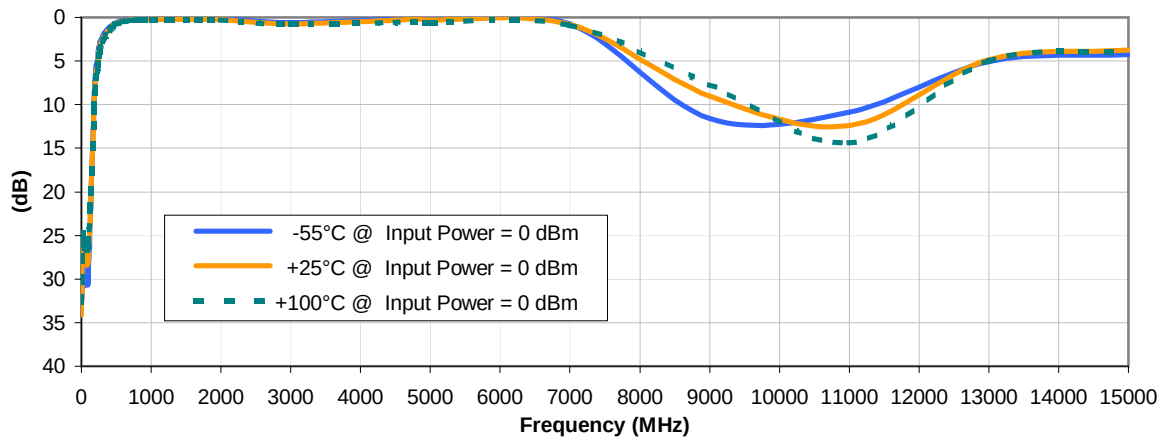
Typical Performance Curves

VLF-105+

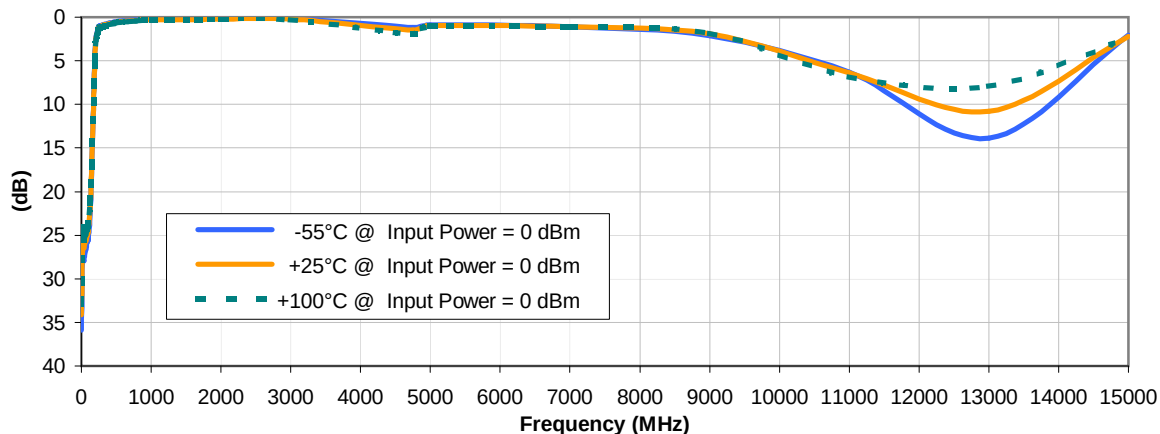
INSERTION LOSS vs. TEMPERATURE



INPUT RETURN LOSS vs. TEMPERATURE



OUTPUT RETURN LOSS vs. TEMPERATURE



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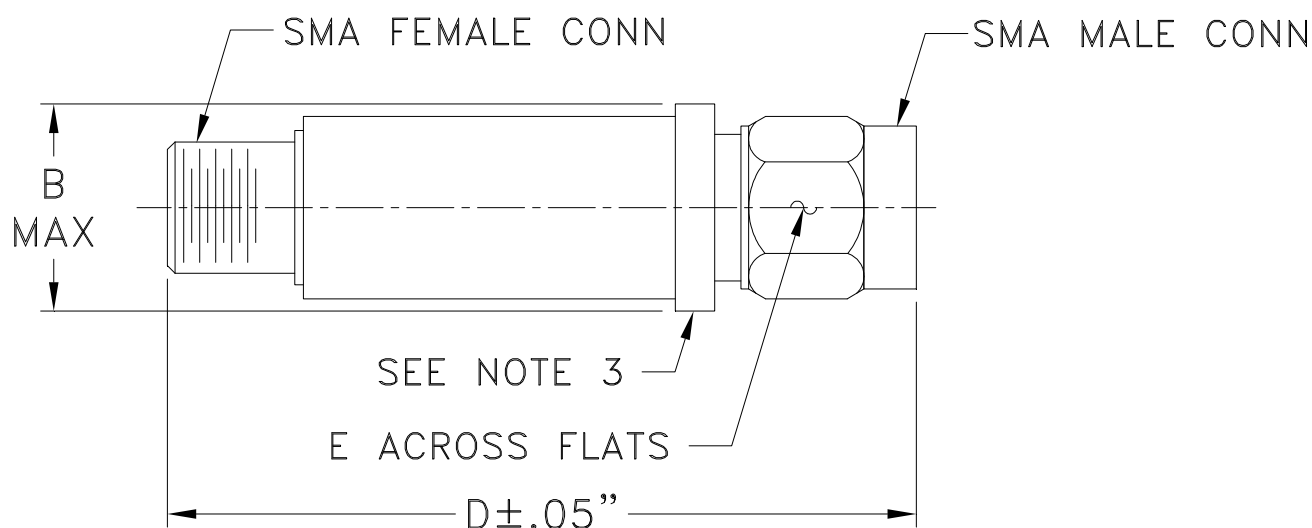
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Outline Dimensions



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. ± .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