Coaxial

Low Pass Filter

50Ω *DC to 225 MHz

VLF-225+
VLF-225

Generic photo used for illustration purposes only

CASE STYLE: FF704

Connectors	Model
SMA	VLF-225(+)

+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.

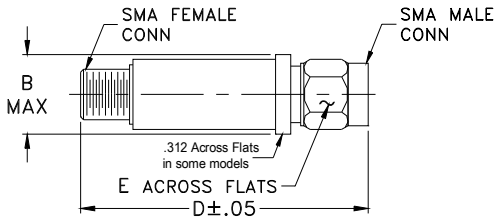
Features

- 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

Outline Drawing



Outline Dimensions (inch / mm)

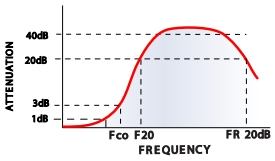
B	D	E	wt
.410	1.43	.312	grams
10.41	36.32	7.92	10.0

Electrical Specifications at 25°C

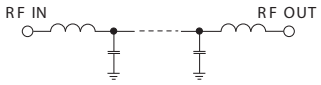
PASSBAND (MHz)	fco, MHz Nom.	STOP BAND (MHz) (loss, dB)			VSWR (:1)		NO. OF SECTIONS
(loss < 1.2 dB)	(loss 3 dB)	f 20	40	fr 20	Stopband	Passband	
Max.	Typ.	Min.	Typ.	Typ.	Typ.	Typ.	
*DC-225	350	460	510-2500	5500	20	1.2	7

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

typical frequency response

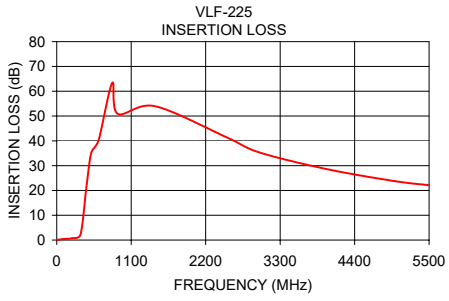


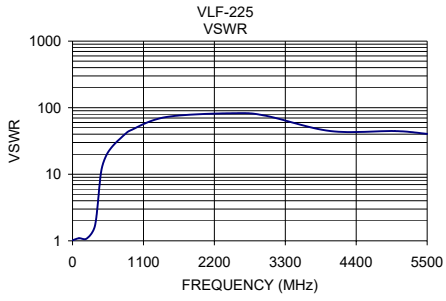
electrical schematic



Typical Performance Data at 25°C

Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)
1	0.09	1.02
100	0.38	1.09
225	0.72	1.09
350	2.21	1.71
440	21.59	10.43
510	35.18	17.93
620	40.34	26.33
820	63.40	40.41
900	50.90	45.72
1450	53.99	72.39
2500	41.57	82.73
3000	35.27	75.53
4000	28.53	44.55
5000	23.72	44.55
5500	22.12	40.41





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-225

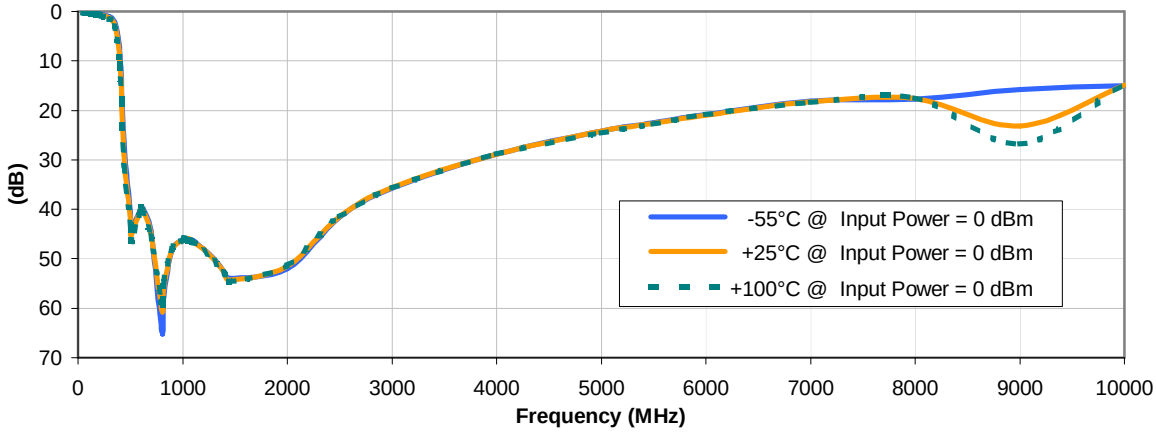
Typical Performance Data

FREQ. (MHz)	INSERTION LOSS (dB)			INPUT RETURN LOSS (dB)			OUTPUT RETURN LOSS (dB)		
	@ -55° C	@ +25° C	@ +100° C	@ -55° C	@ +25° C	@ +100° C	@ -55° C	@ +25° C	@ +100° C
50	0.19	0.24	0.30	32.46	30.65	29.39	30.88	28.91	28.08
60	0.25	0.29	0.34	33.11	31.43	30.32	29.66	28.34	27.36
70	0.25	0.30	0.35	33.13	31.73	30.41	29.76	28.59	27.48
80	0.25	0.30	0.35	33.71	31.96	30.98	28.31	27.14	26.34
90	0.27	0.34	0.39	34.40	32.79	31.87	27.96	27.12	26.41
100	0.29	0.36	0.41	37.12	34.94	33.99	27.28	26.46	25.88
110	0.30	0.35	0.41	37.05	35.49	34.67	26.85	26.01	25.38
120	0.38	0.45	0.52	38.25	36.95	35.77	26.22	25.53	25.00
130	0.38	0.41	0.50	38.92	38.27	37.82	25.70	25.05	24.63
140	0.41	0.48	0.55	41.23	41.36	40.38	25.16	24.56	24.18
150	0.40	0.49	0.56	45.57	42.84	38.80	25.14	24.49	24.08
160	0.42	0.53	0.58	44.44	47.98	40.57	24.55	24.10	23.68
170	0.46	0.57	0.63	45.09	51.26	39.83	24.66	23.99	23.77
180	0.45	0.58	0.64	47.11	48.73	38.32	24.72	24.23	23.88
190	0.47	0.63	0.71	42.05	48.64	39.18	24.50	24.07	23.62
200	0.49	0.65	0.72	46.78	48.06	38.39	24.58	24.21	23.73
225	0.63	0.76	0.85	43.08	65.93	43.14	25.05	24.65	24.38
300	1.08	1.32	1.50	20.43	19.67	18.88	20.22	19.52	18.93
350	2.06	2.53	2.95	11.10	10.60	10.09	13.19	13.33	13.38
400	7.29	8.88	10.45	3.77	3.54	3.33	8.78	9.06	9.06
440	26.56	29.09	31.36	1.22	1.37	1.49	2.80	3.11	3.28
500	40.79	42.02	43.21	0.75	0.88	0.99	1.48	1.75	1.91
510	44.03	45.34	46.50	0.71	0.85	0.95	1.45	1.69	1.91
600	39.81	39.73	39.83	0.48	0.59	0.68	1.01	1.21	1.35
620	39.75	39.95	40.07	0.46	0.57	0.65	0.92	1.11	1.26
700	44.21	44.97	45.48	0.40	0.52	0.60	0.78	0.94	1.07
800	64.65	60.45	59.07	0.32	0.39	0.49	0.50	0.66	0.75
820	57.67	55.95	54.57	0.36	0.44	0.50	0.50	0.61	0.72
900	48.15	48.16	48.01	0.25	0.33	0.39	0.36	0.46	0.55
1000	46.07	46.16	46.16	0.18	0.27	0.35	0.27	0.36	0.42
1010	45.97	45.90	45.93	0.18	0.28	0.33	0.29	0.40	0.46
1020	45.99	45.97	46.07	0.16	0.28	0.35	0.30	0.36	0.45
1030	45.90	45.97	46.05	0.19	0.29	0.37	0.27	0.38	0.47
1040	46.17	46.18	46.23	0.21	0.29	0.35	0.26	0.32	0.41
1050	46.09	46.14	46.31	0.16	0.28	0.34	0.29	0.36	0.43
1060	46.10	45.99	46.36	0.15	0.25	0.30	0.24	0.35	0.43
1070	46.23	46.33	46.36	0.17	0.25	0.30	0.25	0.35	0.40
1080	46.17	46.37	46.52	0.19	0.30	0.36	0.25	0.33	0.40
1100	46.32	46.55	46.65	0.22	0.30	0.36	0.24	0.31	0.37
1200	48.03	48.06	48.37	0.16	0.27	0.33	0.22	0.27	0.34
1300	50.11	50.16	50.51	0.12	0.23	0.28	0.19	0.25	0.32
1400	52.86	52.98	53.01	0.16	0.24	0.31	0.17	0.23	0.28
1450	53.91	54.34	54.54	0.14	0.17	0.29	0.13	0.21	0.25
2000	52.00	51.51	51.37	0.04	0.16	0.24	0.09	0.17	0.17
2500	41.59	41.44	41.53	0.12	0.21	0.27	0.04	0.10	0.16
3000	35.73	35.62	35.65	0.15	0.23	0.28	0.07	0.17	0.24
4000	28.91	28.84	28.86	0.18	0.30	0.41	0.05	0.13	0.27
5000	24.18	24.26	24.58	0.17	0.30	0.43	0.04	0.15	0.35
5500	22.51	22.63	22.81	0.24	0.34	0.50	0.08	0.28	0.49
6000	20.79	20.95	20.79	0.26	0.41	0.61	0.06	0.30	0.52
7000	18.12	18.28	18.40	1.33	1.89	2.56	0.22	0.42	0.57
8000	17.68	17.63	17.53	0.92	1.00	1.13	0.26	0.48	0.61
9000	15.78	23.15	26.83	3.80	2.73	2.00	4.51	6.08	6.97
10000	15.03	14.91	14.75	0.53	0.79	1.00	0.44	0.76	0.97

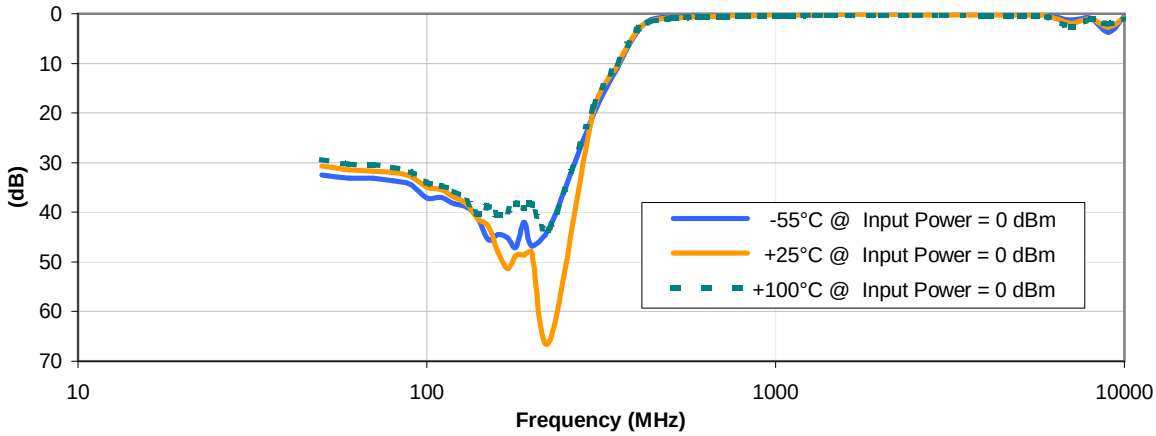
Coaxial Low Pass Filter VLF-225

Typical Performance Curves

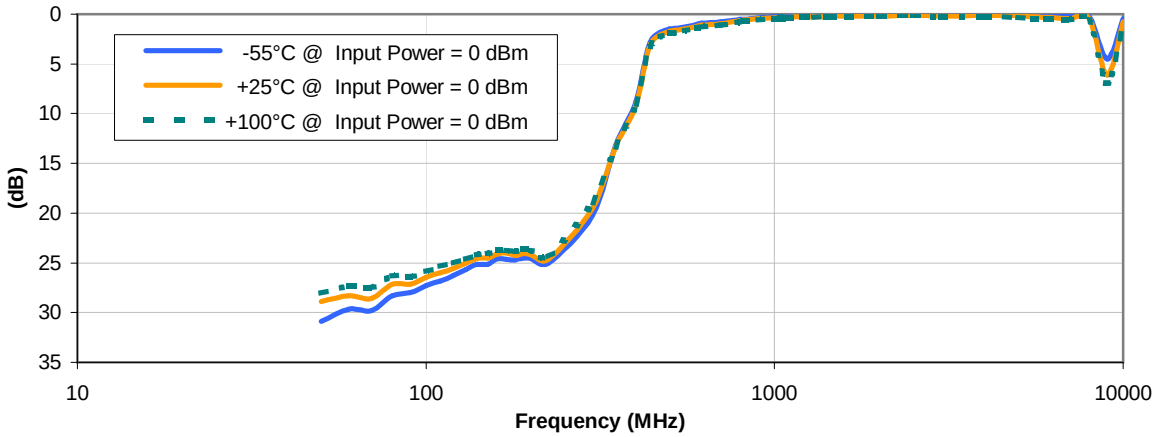
INSERTION LOSS vs. TEMPERATURE



INPUT RETURN LOSS vs. TEMPERATURE



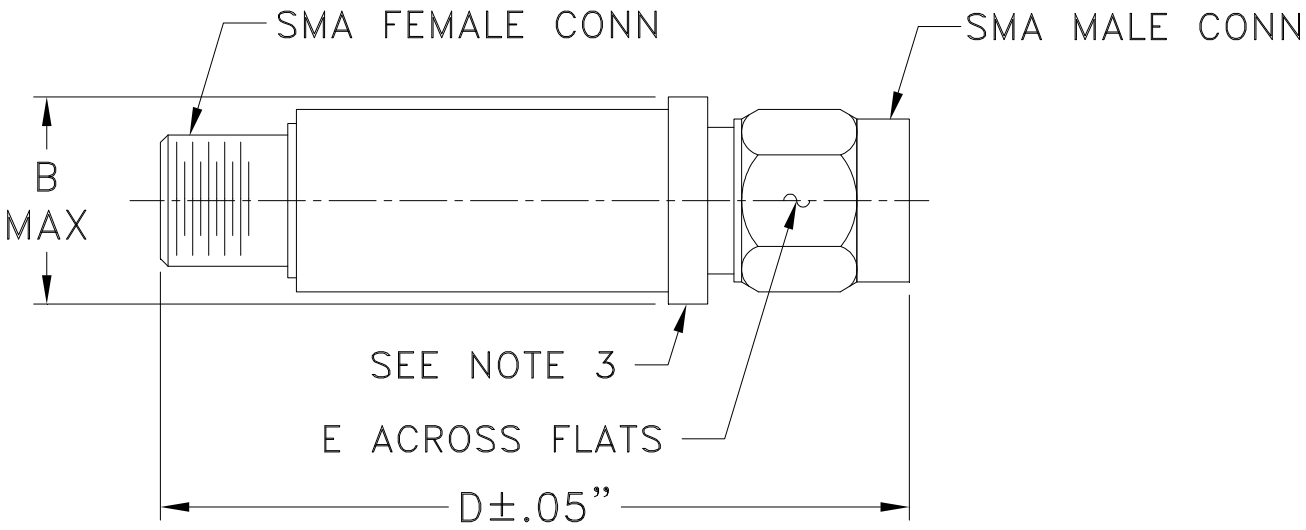
OUTPUT RETURN LOSS vs. TEMPERATURE



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.

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