

# Coaxial Low Pass Filter

## VLF-320+

50Ω \*DC to 320 MHz



Generic photo used for illustration purposes only

CASE STYLE: FF704

Connectors	Model
SMA	VLF-320+

**+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
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, 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)	f <sub>co</sub> , 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.	7
*DC-320	460	560	640-2500	5300	20	1.2	

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

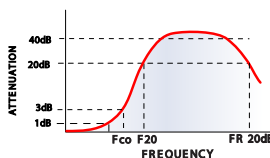
### Outline Drawing



### Outline Dimensions (inch/mm)

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

### typical frequency response

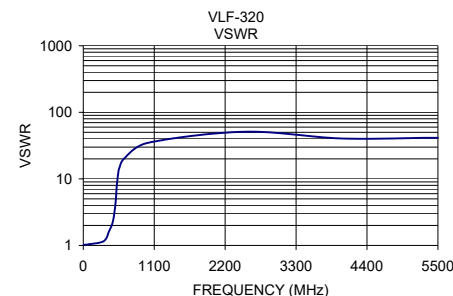
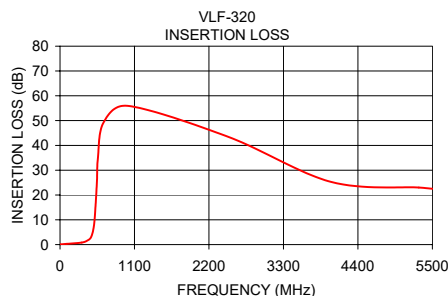


### electrical schematic



### Typical Performance Data at 25°C

Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)
1	0.09	1.02
100	0.30	1.05
320	0.83	1.16
400	1.56	1.63
460	3.07	2.32
500	7.33	4.34
520	13.60	7.94
545	25.47	12.71
560	34.83	14.62
640	49.07	20.45
1000	55.95	34.75
2500	43.30	51.10
4000	25.31	40.41
5300	23.02	41.37
5500	22.51	41.37



### 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.
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## 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	0.16	0.19	0.21	34.26	32.52	31.44	33.30	31.49	30.24
100	0.24	0.29	0.32	36.10	34.63	33.59	30.58	29.35	28.67
200	0.38	0.46	0.51	40.78	41.18	37.93	26.48	26.22	25.93
300	0.59	0.71	0.80	26.40	26.54	26.80	24.08	23.76	23.75
320	0.66	0.79	0.91	23.38	23.29	23.17	22.24	21.85	21.63
400	1.22	1.45	1.67	13.17	12.90	12.55	13.24	13.05	12.71
460	2.36	2.80	3.24	8.52	8.37	8.17	10.45	10.95	11.50
500	4.82	5.99	7.17	5.44	4.97	4.58	14.23	14.70	13.89
520	9.34	11.18	13.02	2.77	2.64	2.53	6.76	6.52	6.16
545	19.50	21.85	24.15	1.34	1.45	1.53	2.93	3.12	3.23
560	27.70	30.29	32.79	1.07	1.20	1.31	2.19	2.41	2.57
640	47.19	48.24	48.69	0.70	0.84	0.93	1.28	1.51	1.69
700	41.00	40.48	40.02	0.57	0.70	0.79	1.09	1.29	1.45
800	38.90	39.22	39.51	0.46	0.59	0.68	0.84	1.02	1.17
900	45.85	46.81	47.57	0.39	0.51	0.58	0.63	0.77	0.90
1000	59.89	57.30	55.80	0.33	0.43	0.51	0.48	0.60	0.68
1200	45.09	45.15	45.16	0.24	0.35	0.43	0.32	0.40	0.45
1300	45.03	45.17	45.27	0.21	0.34	0.42	0.26	0.33	0.38
1500	47.33	47.67	47.90	0.18	0.29	0.37	0.20	0.28	0.32
1600	48.97	49.47	49.67	0.18	0.28	0.37	0.19	0.26	0.30
1700	50.78	51.16	51.51	0.14	0.25	0.33	0.16	0.22	0.26
1800	52.30	52.51	52.70	0.16	0.27	0.35	0.16	0.22	0.25
1900	53.04	53.23	53.44	0.13	0.24	0.31	0.16	0.23	0.26
2000	52.95	53.12	53.00	0.13	0.23	0.30	0.14	0.20	0.24
2200	50.69	50.40	50.33	0.14	0.23	0.32	0.14	0.21	0.24
2300	48.87	48.72	48.61	0.14	0.24	0.30	0.11	0.17	0.22
2500	45.38	45.17	44.93	0.14	0.23	0.29	0.11	0.17	0.22
2600	43.63	43.54	43.39	0.13	0.22	0.28	0.10	0.18	0.22
2700	42.23	42.09	41.84	0.15	0.24	0.28	0.10	0.17	0.21
2800	40.85	40.68	40.50	0.16	0.25	0.29	0.08	0.17	0.21
3000	38.41	38.30	38.12	0.16	0.26	0.29	0.08	0.15	0.21
3200	36.36	36.32	36.20	0.16	0.26	0.28	0.04	0.13	0.21
3300	35.50	35.44	35.33	0.14	0.24	0.29	0.08	0.16	0.23
3500	33.97	33.96	33.90	0.12	0.23	0.28	0.04	0.13	0.21
3600	33.36	33.37	33.39	0.14	0.25	0.29	0.05	0.14	0.22
3700	32.91	32.99	33.00	0.12	0.23	0.29	0.04	0.15	0.22
3800	32.63	32.87	33.04	0.12	0.23	0.31	0.06	0.17	0.27
4000	33.83	29.13	26.69	0.21	0.43	0.51	0.21	0.47	0.56
4200	27.22	27.45	27.62	0.11	0.26	0.34	0.07	0.18	0.29
4300	27.26	27.41	27.51	0.10	0.26	0.33	0.04	0.16	0.28
4500	26.73	26.82	26.87	0.07	0.22	0.35	0.07	0.18	0.32
4600	26.39	26.45	26.51	0.06	0.23	0.36	0.05	0.18	0.32
4700	26.03	26.09	26.11	0.09	0.24	0.38	0.05	0.19	0.34
4800	25.72	25.75	25.76	0.11	0.25	0.40	0.05	0.19	0.36
5000	25.00	25.07	25.11	0.11	0.27	0.44	0.07	0.22	0.38
5200	24.41	24.40	24.36	0.13	0.30	0.47	0.07	0.24	0.39
5300	23.98	23.96	23.99	0.18	0.34	0.48	0.08	0.24	0.41
5500	23.24	23.27	23.33	0.13	0.30	0.46	0.13	0.28	0.46
6000	21.94	22.02	22.09	0.19	0.36	0.53	0.13	0.31	0.49
7000	19.60	19.66	19.74	0.35	0.50	0.65	0.21	0.37	0.51
8000	17.59	17.69	17.77	0.27	0.44	0.58	0.37	0.54	0.63
9000	16.05	16.14	16.24	0.35	0.56	0.69	0.30	0.47	0.57
10000	14.37	14.34	14.34	0.73	1.11	1.43	0.61	0.93	1.22
11000	15.96	16.76	17.90	2.97	3.80	4.64	1.89	2.65	3.64

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VLF-320+  
101128  
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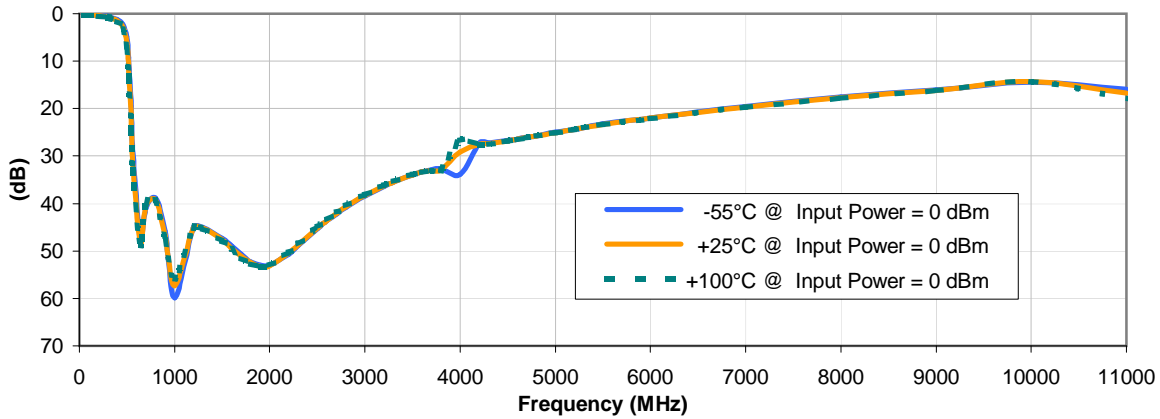


# Coaxial Low Pass Filter

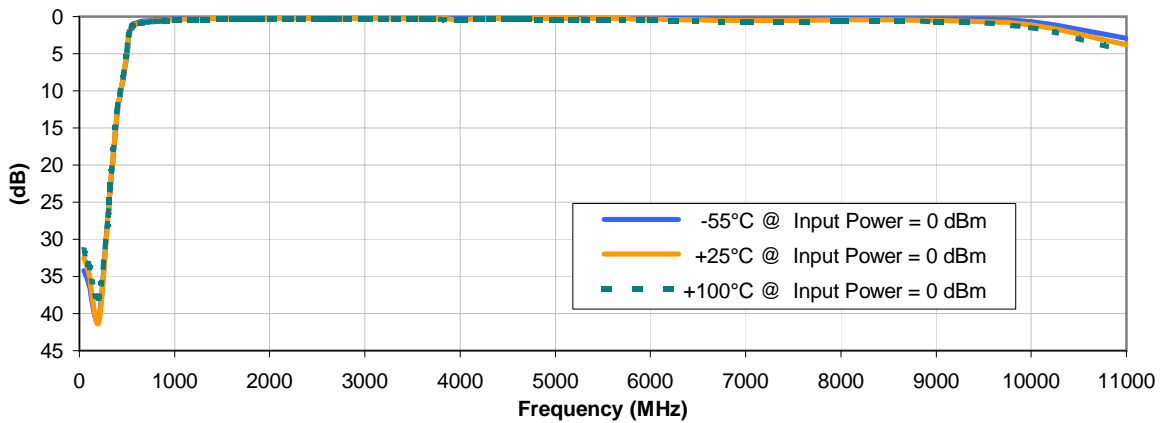
## Typical Performance Curves

# VLF-320+

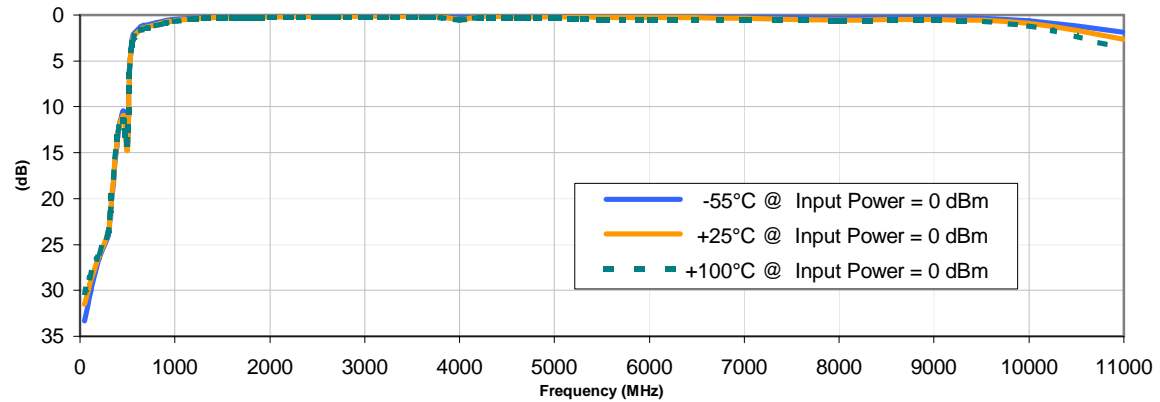
### INSERTION LOSS vs. TEMPERATURE



### 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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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.

<b>Specification</b>	<b>Test/Inspection Condition</b>	<b>Reference/Spec</b>
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