

Ultra-Reliable Low Pass Filter

50Ω DC to 4000 MHz

VLP-54



Generic photo used for illustration purposes only

CASE STYLE: FF704

Connectors	Model
SMA	VLP-54

Maximum Ratings

Operating Temperature -55°C to 100°C

Storage Temperature -55°C to 100°C

RF Power Input* 10W max. at 25°C

* Passband rating, derate linearly to 0.4xPmax at 100°C ambient. Permanent damage may occur if any of these limits are exceeded.

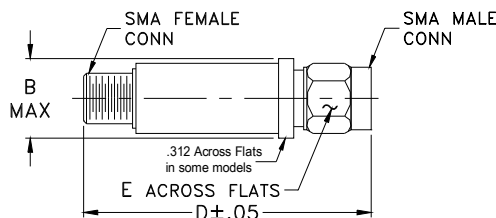
Features

- rugged unibody construction
- low insertion loss passband, less than 1 dB typ.
- excellent power handling, 10W
- low cost

Applications

- harmonic rejection
- transmitters/receivers
- lab use

Outline Drawing



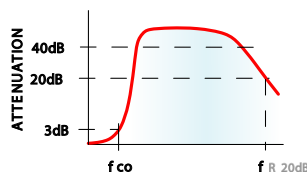
Outline Dimensions (inch/mm)

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

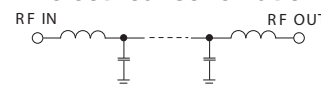
Electrical Specifications (T_{AMB}=25°C)

PASSBAND (MHz) (loss < 1 dB)	f _{co} , MHz Nom. (loss 3 dB)	STOP BAND (MHz) (loss > 20 dB)	fr20 dB Typ.	VSWR (:1) Passband Typ.
Typ.	Typ.			
DC-4000	5400	7100	9500	1.2

typical frequency response

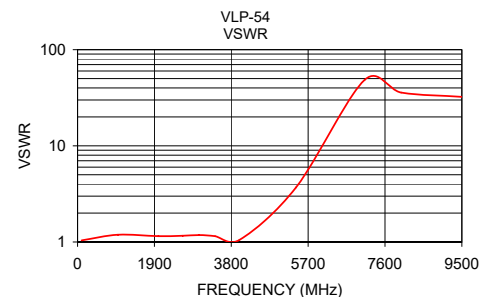
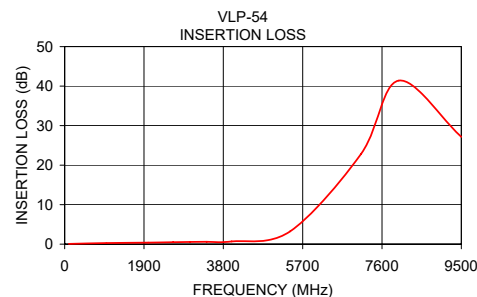


electrical schematic



Typical Performance Data

Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)
100.00	0.06	1.04
1000.00	0.27	1.19
2000.00	0.39	1.15
2600.00	0.49	1.16
3000.00	0.56	1.18
3400.00	0.59	1.15
4000.00	0.69	1.05
5400.00	3.23	3.69
7100.00	22.84	48.68
8000.00	41.39	35.82
9500.00	27.16	32.31



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-Circuits' 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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REV. C
M151107
VLP-54
ED-10545B/10
WZ/AD/CP/AM
200522

Coaxial Low Pass Filter (Ultra Reliable)

VLP-54

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	0.08	0.10	34.52	33.14	32.33	6.61	6.60	6.60
100	0.07	0.10	0.12	31.75	30.90	30.20	12.44	12.36	12.36
500	0.17	0.21	0.25	20.29	20.77	21.58	60.04	59.46	59.35
1000	0.24	0.32	0.37	17.49	17.97	18.45	119.95	118.61	118.32
1500	0.25	0.35	0.44	19.34	19.65	19.57	178.70	179.12	178.56
2000	0.25	0.38	0.49	24.47	25.28	25.54	115.13	118.08	118.91
2500	0.30	0.45	0.58	23.12	23.86	24.44	49.03	52.77	53.79
3000	0.36	0.53	0.69	22.51	22.44	21.82	19.34	14.88	13.67
3500	0.39	0.59	0.76	27.95	28.41	29.50	90.39	85.17	83.77
4000	0.45	0.67	0.88	25.71	24.68	23.15	164.03	158.14	156.63
4770	0.66	0.96	1.25	21.34	19.14	17.43	74.46	80.88	82.08
5265	2.26	2.84	3.45	5.98	5.63	5.40	15.10	7.66	6.22
5400	3.32	3.95	4.62	4.09	4.01	3.98	39.60	31.47	29.54
5495	4.23	4.89	5.60	3.11	3.16	3.22	56.06	47.43	45.08
5950	9.30	9.95	10.70	1.03	1.27	1.47	124.50	114.19	109.91
6375	14.13	14.91	15.78	0.52	0.75	0.90	176.69	165.79	161.19
6785	18.83	19.80	20.63	0.33	0.57	0.73	137.74	150.86	157.56
7100	22.84	23.91	24.81	0.24	0.53	0.74	104.78	119.88	128.16
7420	28.22	29.39	30.37	0.18	0.51	0.81	73.95	90.96	99.85
7610	32.56	34.13	35.69	0.16	0.51	0.86	60.28	78.08	87.56
7735	36.55	38.83	41.36	0.16	0.51	0.88	52.79	73.69	88.61
7900	46.09	48.87	47.17	0.15	0.51	0.93	65.13	119.31	166.30
8100	41.47	39.22	37.44	0.15	0.51	0.94	164.15	176.67	168.25
8500	30.79	30.53	30.39	0.17	0.55	1.00	144.02	160.41	166.81
9000	25.65	25.79	25.84	0.17	0.55	1.02	100.47	120.02	129.52
9500	22.25	22.20	22.30	0.33	0.69	1.10	48.22	69.06	76.83
10000	25.91	25.89	25.69	0.30	0.61	0.88	11.35	32.18	43.69
10500	22.15	22.36	22.43	0.18	0.50	0.72	9.98	13.14	23.83
11000	18.96	18.87	18.73	0.15	0.57	0.86	45.78	20.84	8.69
11500	14.07	13.07	13.06	0.43	1.19	2.08	90.88	72.34	72.16
12020	8.16	7.47	8.81	2.54	4.61	4.23	158.71	156.37	165.81
12300	11.04	13.72	15.95	1.34	1.15	1.31	103.65	123.91	134.69
12500	16.67	18.86	20.85	0.34	0.56	0.87	74.49	99.93	112.82
12700	21.19	23.42	25.50	0.13	0.41	0.74	56.31	84.30	99.86
13000	27.86	30.45	33.10	0.01	0.34	0.68	35.64	68.14	88.51
13340	39.26	42.82	41.59	0.02	0.36	0.71	35.91	103.04	162.23
13700	34.35	31.88	29.75	0.10	0.28	0.68	131.83	167.54	174.16
14000	26.71	24.91	23.01	0.01	0.46	0.93	119.84	151.65	165.76
14540	11.91	10.74	12.45	1.45	2.69	2.33	45.39	41.43	30.12
15000	17.34	18.58	19.47	0.16	0.65	1.24	82.26	52.22	40.10

REV. X1

VLP-54

071002

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IF/RF MICROWAVE COMPONENTS • ISO 9001 ISO 14001 AS9100 CERTIFIED RoHS compliant

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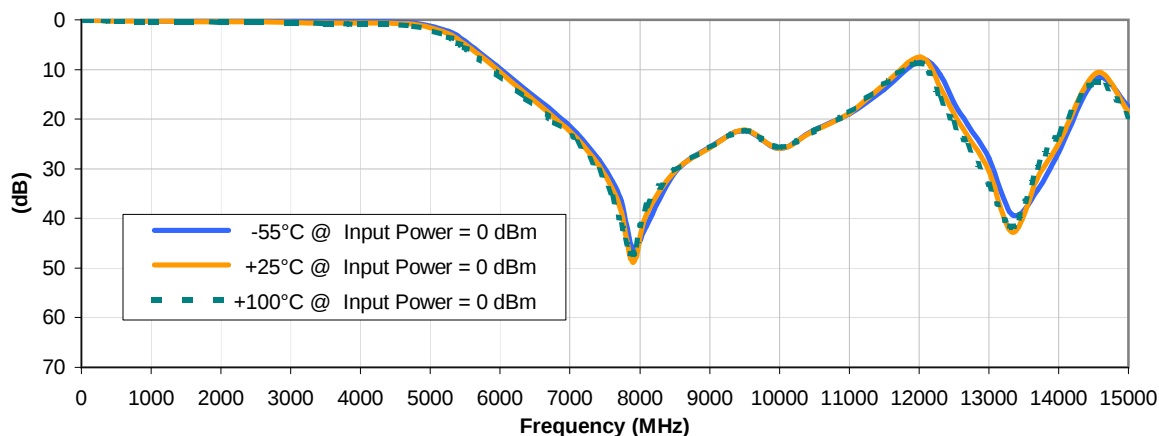


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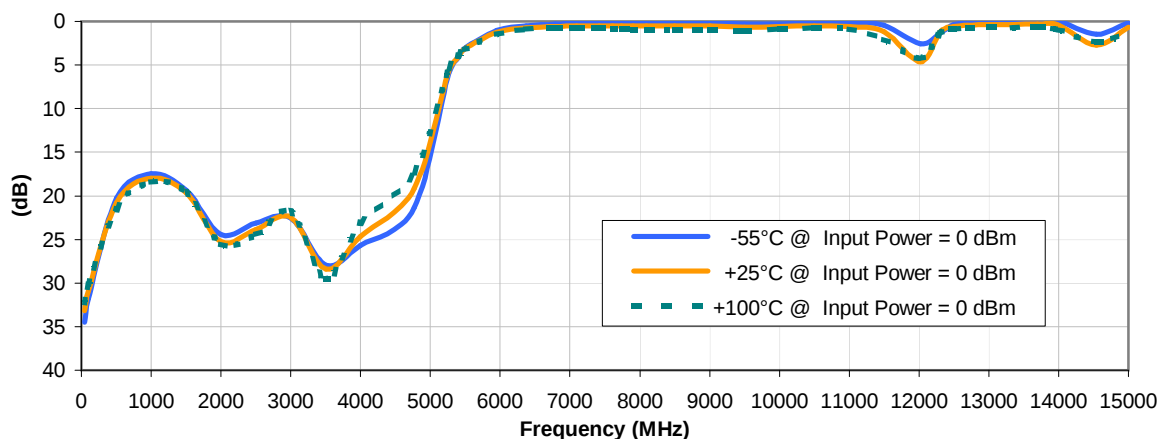


Typical Performance Curves

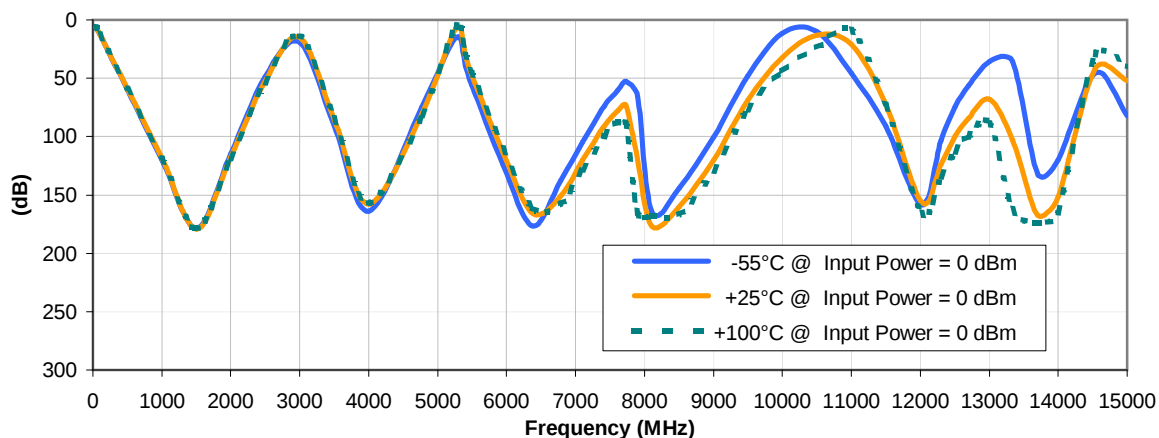
INSERTION LOSS vs. TEMPERATURE



INPUT RETURN LOSS vs. TEMPERATURE



OUTPUT RETURN LOSS vs. TEMPERATURE



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