

Ultra-Reliable High Pass Filter

50Ω 1300 to 3500 MHz

VHP-9R5

Maximum Ratings

Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
RF Power Input*	14W at 25°C

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

Features

- rugged unibody construction, small size
- pass band insertion loss 1.0 dB typ.
- excellent power handling, 14W
- low cost

Applications

- sub-harmonic rejection of VCO
- transmitters/receivers
- lab use

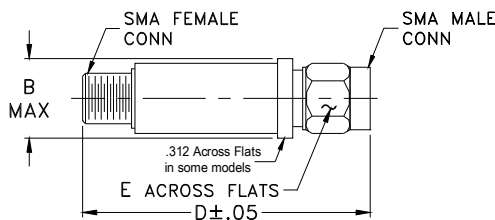


Generic photo used for illustration purposes only

CASE STYLE: FF704

Connectors	Model
SMA	VHP-9R5

Outline Drawing



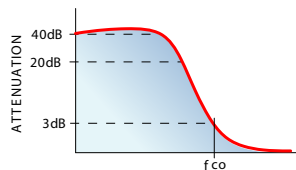
Outline Dimensions (inch/mm)

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

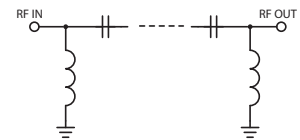
Electrical Specifications (T_{AMB}=25°C)

STOP BAND (MHz)	f _{co} , MHz Nom. (loss 3 dB)	PASSBAND (MHz)	VSWR (:1)	
			Stopband	Passband
(loss > 40 dB)	(loss > 20 dB)	Typ.	Typ.	Typ.
DC-600	750	950	18	1.3

typical frequency response

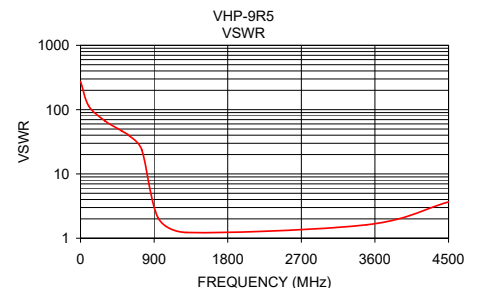
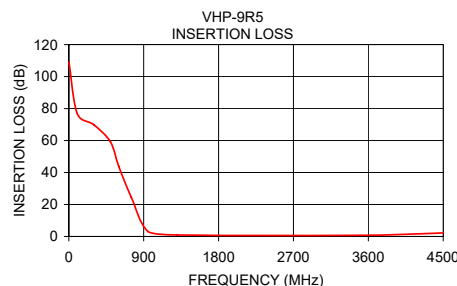


electrical schematic



Typical Performance Data

Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)
1.00	109.09	273.43
100.00	77.03	114.28
300.00	69.91	66.79
500.00	59.22	47.03
600.00	43.87	38.78
750.00	24.51	23.57
950.00	3.18	2.06
1300.00	0.94	1.23
3500.00	0.69	1.62
4500.00	2.21	3.67



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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REV. C
M151107
VHP-9R5
ED10545B/7
WZ/AD/CP/AM
200522

Coaxial High Pass Filter (Ultra Reliable)

VHP-9R5

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	127.61	109.09	164.86	0.01	0.06	0.14	0.03	0.06	0.09
50	76.98	89.29	75.96	0.10	0.14	0.16	0.10	0.13	0.16
100	73.77	73.41	72.50	0.15	0.17	0.20	0.13	0.17	0.20
305	67.12	66.89	67.40	0.25	0.29	0.31	0.21	0.27	0.30
415	73.52	74.83	75.83	0.29	0.35	0.39	0.26	0.33	0.37
435	85.81	85.94	85.05	0.30	0.36	0.40	0.26	0.34	0.39
450	82.12	78.11	76.07	0.30	0.36	0.41	0.27	0.35	0.40
480	67.02	65.96	64.72	0.31	0.38	0.43	0.28	0.37	0.42
530	55.91	55.12	54.42	0.33	0.41	0.47	0.31	0.40	0.46
560	51.02	50.38	49.61	0.34	0.43	0.49	0.32	0.42	0.49
600	45.21	44.56	43.90	0.36	0.46	0.53	0.35	0.46	0.53
630	41.15	40.52	39.85	0.38	0.49	0.57	0.38	0.49	0.57
670	35.98	35.32	34.63	0.42	0.54	0.64	0.43	0.55	0.65
710	30.91	30.22	29.50	0.47	0.60	0.72	0.49	0.63	0.76
750	25.88	25.15	24.39	0.55	0.71	0.86	0.59	0.77	0.92
785	21.44	20.68	19.91	0.67	0.87	1.05	0.74	0.96	1.17
825	16.33	15.56	14.80	0.95	1.23	1.51	1.08	1.40	1.72
865	11.26	10.57	9.92	1.60	2.06	2.54	1.85	2.40	2.97
915	5.76	5.42	5.14	4.00	4.97	5.91	4.69	5.92	7.19
950	3.32	3.31	3.31	7.77	9.05	10.17	9.54	11.65	13.76
1275	0.82	0.98	1.10	27.64	26.71	26.64	24.56	24.29	24.58
1300	0.80	0.96	1.08	25.62	25.03	25.16	23.60	23.43	23.80
1700	0.48	0.62	0.72	40.07	34.69	32.47	36.90	33.31	31.37
2000	0.43	0.57	0.66	19.66	19.26	19.22	19.34	18.98	18.78
2500	0.37	0.51	0.61	18.07	18.18	18.49	17.98	17.95	18.05
3000	0.28	0.42	0.53	32.40	38.35	48.60	26.69	27.61	28.32
3500	0.37	0.55	0.67	16.26	15.66	15.46	15.77	15.26	15.15
4000	0.80	1.00	1.13	9.24	9.20	9.32	9.22	9.08	9.16
4500	1.53	1.76	1.90	5.92	6.00	6.20	5.93	5.93	6.05
5070	2.52	2.80	3.00	3.93	4.02	4.21	3.91	3.97	4.10
5500	3.27	3.61	3.88	3.06	3.15	3.29	3.01	3.09	3.22
6000	4.09	4.51	4.91	2.40	2.46	2.55	2.29	2.39	2.51
6200	4.40	4.81	5.21	2.18	2.27	2.37	2.09	2.22	2.37
6700	5.18	5.50	5.85	1.77	1.92	2.04	1.66	1.85	2.06
7000	5.69	5.88	6.17	1.58	1.82	1.98	1.45	1.71	1.95
7500	6.11	6.15	6.31	1.42	1.70	1.87	1.32	1.63	1.91
8000	5.96	5.98	6.16	1.50	1.79	1.93	1.41	1.72	1.96
8500	4.76	4.86	4.93	2.20	2.63	3.06	2.26	2.72	3.23
8900	4.21	7.43	11.60	7.27	4.80	3.05	10.13	6.38	4.03
9000	9.38	14.33	15.29	3.32	2.17	1.82	4.19	2.72	2.25
10000	15.07	14.81	14.46	1.76	2.23	3.07	3.30	2.89	3.13

REV. X1

VHP-9R5

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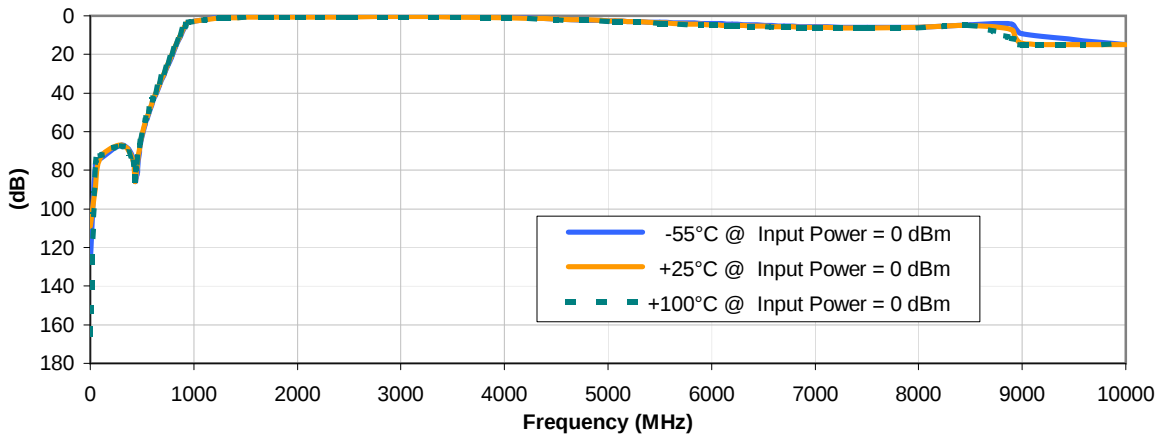


Coaxial High Pass Filter (Ultra Reliable)

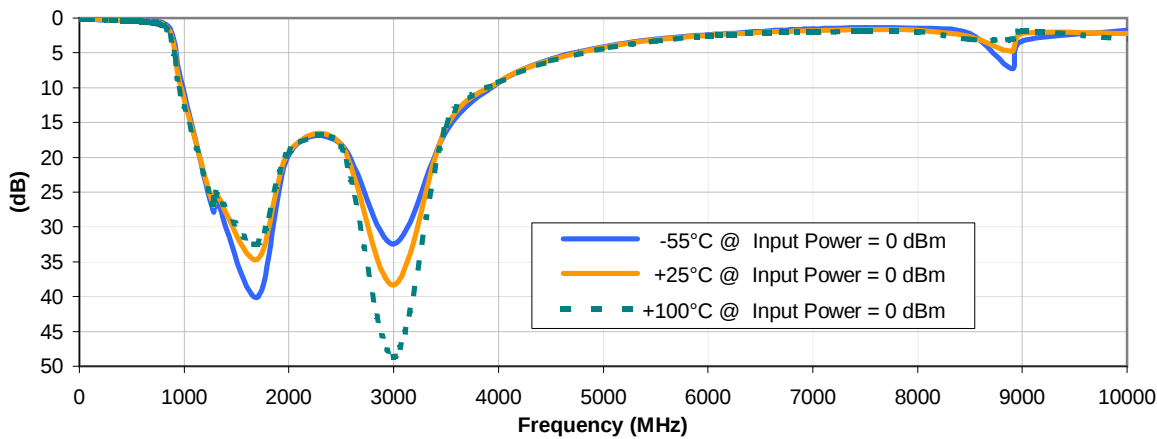
VHP-9R5

Typical Performance Curves

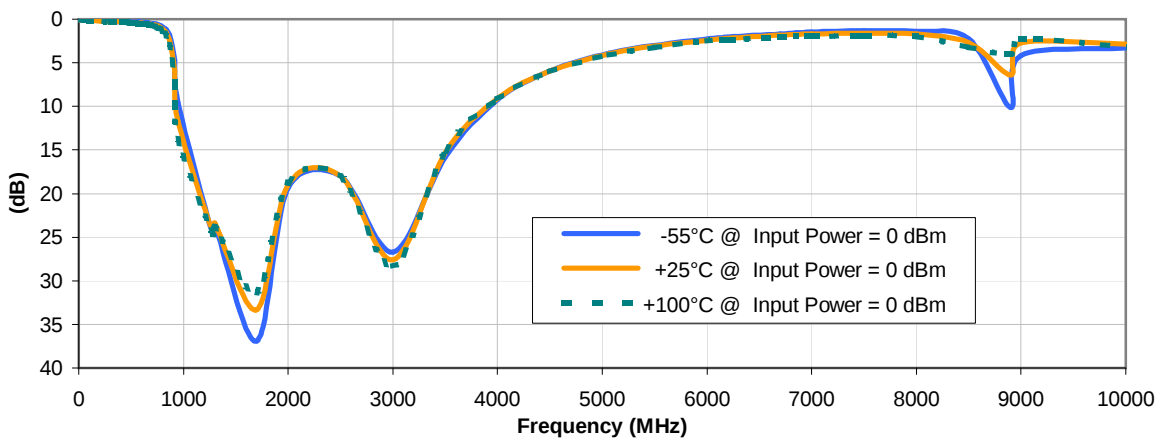
INSERTION LOSS vs. TEMPERATURE



INPUT RETURN LOSS vs. TEMPERATURE



OUTPUT RETURN LOSS vs. TEMPERATURE



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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