

Coaxial High Pass Filter

50Ω 1650 to 5000 MHz

VHF-1600+



Generic photo used for illustration purposes only

Maximum Ratings

Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
RF Power Input*	7W max. at 25°C

* Passband rating, derate linearly to 3W at 100°C ambient.
Permanent damage may occur if any of these limits are exceeded.

Features

- rugged unibody construction, small size
- 7 sections
- temperature stable
- excellent power handling, 7W
- low cost

Applications

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

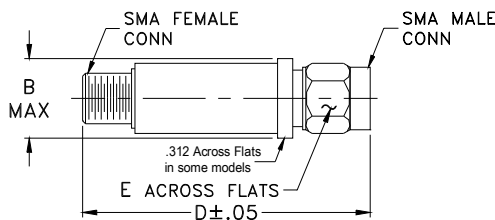
CASE STYLE: FF704

Connectors	Model
SMA	VHF-1600+

+RoHS Compliant

The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications

Outline Drawing



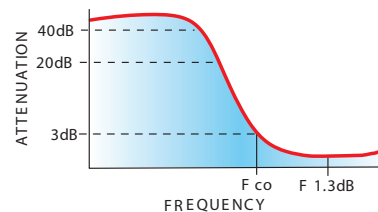
Outline Dimensions (inch/mm)

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

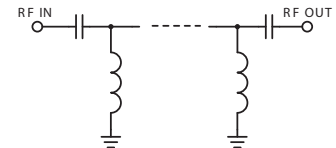
Electrical Specifications (T_{AMB}=25°C)

STOP BAND (MHz) Min.	f _{co} , MHz Nom.	PASSBAND (MHz)		VSWR (:1) Typ.	NO. OF SECTIONS
		(loss < 1.3 dB)	(loss < 2 dB)		
(loss > 40 dB) (loss > 20 dB)	Typ.	Max.	Typ.	Frequency (MHz) Stopband 1.5:1	
1090 1290	1600	1950-4000	1650-5000	20:1 1700-4000	7

typical frequency response

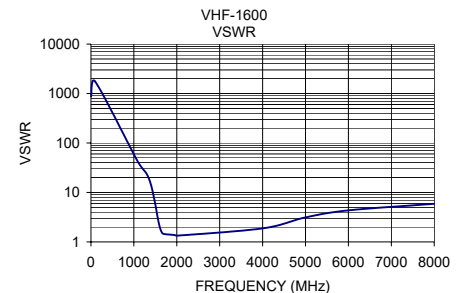
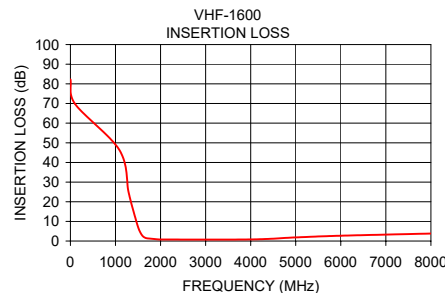


electrical schematic



Typical Performance Data

Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)
1	82.28	868.59
100	69.89	1737.18
1090	46.27	42.38
1290	24.98	24.48
1400	15.11	14.15
1500	7.23	5.74
1550	4.42	3.28
1600	2.63	2.06
1650	1.77	1.57
1700	1.40	1.45
1950	0.83	1.38
2000	0.76	1.34
4000	0.83	1.88
5000	1.83	3.13
6000	2.72	4.35
8000	3.83	5.91



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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Coaxial High Pass Filter

VHF-1600+

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	75.65	82.28	75.05	0.00	0.02	0.03	0.01	0.02	0.00
50	68.26	74.89	67.86	0.00	0.01	0.00	0.01	0.02	0.00
100	74.64	69.89	75.90	0.01	0.01	0.02	0.00	0.00	0.01
200	70.85	67.51	68.48	0.00	0.02	0.03	0.01	0.05	0.03
350	68.39	67.14	69.00	0.01	0.06	0.07	0.02	0.03	0.07
500	72.40	72.26	72.39	0.03	0.08	0.12	0.05	0.08	0.11
1000	61.69	60.24	58.71	0.20	0.34	0.33	0.22	0.30	0.34
1090	47.15	46.27	45.39	0.26	0.41	0.43	0.26	0.35	0.40
1150	39.94	39.15	38.37	0.32	0.46	0.53	0.32	0.41	0.45
1245	30.02	29.28	28.60	0.44	0.60	0.69	0.41	0.50	0.56
1290	25.65	24.98	24.30	0.53	0.71	0.81	0.45	0.58	0.68
1300	24.77	24.08	23.40	0.55	0.73	0.85	0.49	0.62	0.71
1350	20.19	19.52	18.85	0.71	0.91	1.08	0.62	0.78	0.89
1410	14.91	14.26	13.64	1.06	1.33	1.60	0.88	1.09	1.29
1470	9.99	9.41	8.88	1.78	2.24	2.71	1.46	1.82	2.16
1545	4.92	4.63	4.36	4.18	5.16	6.12	3.48	4.20	4.91
1600	2.66	2.63	2.58	7.72	9.20	10.44	6.40	7.31	8.19
1630	1.99	2.06	2.08	10.09	11.66	12.84	8.31	9.17	10.01
1650	1.66	1.77	1.84	11.60	13.11	14.08	9.53	10.30	11.02
1670	1.45	1.59	1.67	12.85	14.10	14.80	10.61	11.24	11.89
1700	1.23	1.40	1.49	14.02	14.78	15.14	11.80	12.24	12.78
1755	1.03	1.19	1.30	14.33	14.55	14.75	12.88	13.14	13.62
1845	0.84	0.99	1.10	14.44	14.56	14.87	13.97	14.38	14.89
1950	0.68	0.83	0.92	15.71	15.93	16.18	15.75	16.37	16.88
1990	0.60	0.76	0.85	16.41	16.57	16.81	16.57	17.25	17.70
2500	0.35	0.50	0.59	21.58	21.64	21.91	21.88	22.01	21.53
3000	0.26	0.41	0.52	29.38	30.75	30.39	27.81	27.08	26.39
3500	0.34	0.51	0.63	16.18	15.96	15.72	15.65	15.64	15.24
4000	0.65	0.83	0.95	10.28	10.29	10.30	10.25	10.21	10.14
4220	0.80	1.02	1.11	8.78	8.88	8.91	8.78	8.73	8.73
4525	1.12	1.34	1.42	7.14	7.32	7.45	7.20	7.21	7.30
5000	1.61	1.83	1.94	5.53	5.75	5.89	5.61	5.64	5.79
5160	1.77	1.99	2.11	5.16	5.38	5.51	5.23	5.25	5.40
6200	2.54	2.86	3.11	3.80	3.86	3.96	3.75	3.82	3.90
7000	3.08	3.35	3.60	3.10	3.34	3.45	3.09	3.28	3.49
8000	3.58	3.83	4.05	2.65	2.97	3.01	2.70	2.92	3.18
9000	3.83	4.15	4.58	2.64	2.94	3.09	2.62	2.77	2.80
9350	5.59	6.80	5.94	4.87	10.47	10.17	2.12	2.25	2.69
10000	3.29	3.49	3.66	3.10	3.48	3.79	3.32	3.66	3.90
10510	3.88	4.84	6.01	2.93	3.04	3.11	4.75	6.20	8.89
11000	3.85	3.75	3.75	3.45	4.05	4.46	6.66	5.98	5.68

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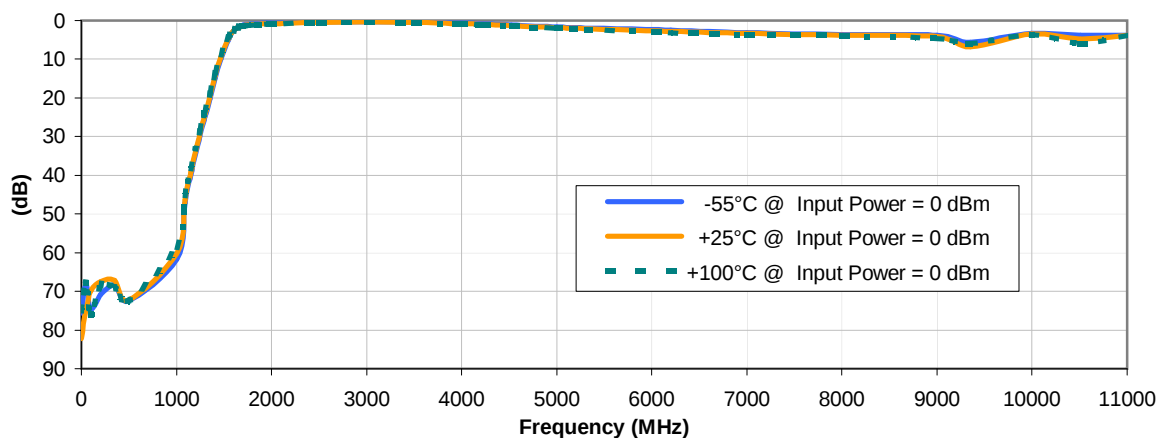


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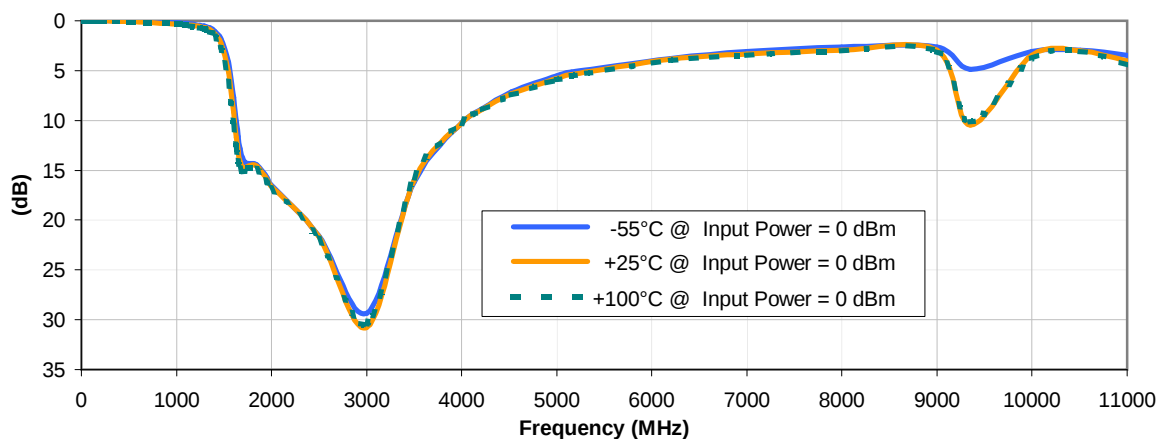
Typical Performance Curves

VHF-1600+

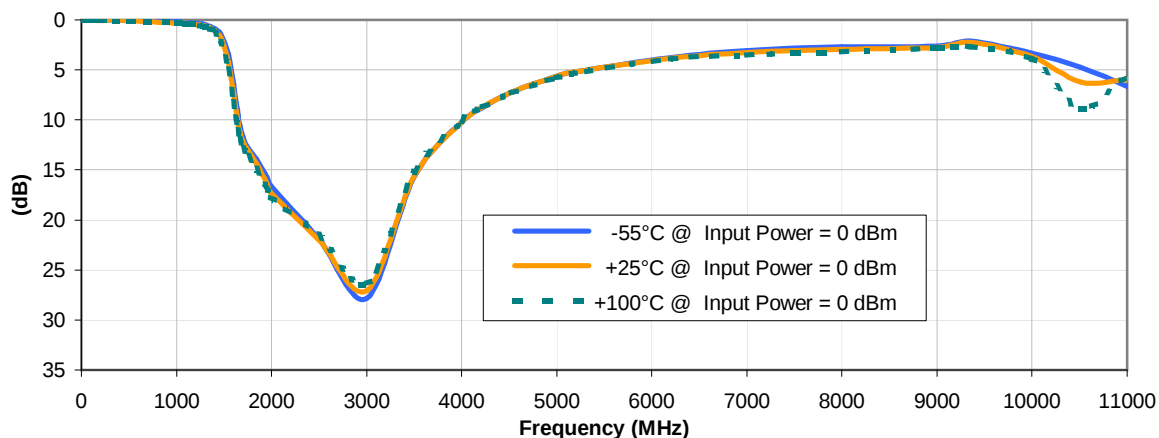
INSERTION LOSS vs. TEMPERATURE



INPUT RETURN LOSS vs. TEMPERATURE



OUTPUT RETURN LOSS vs. TEMPERATURE



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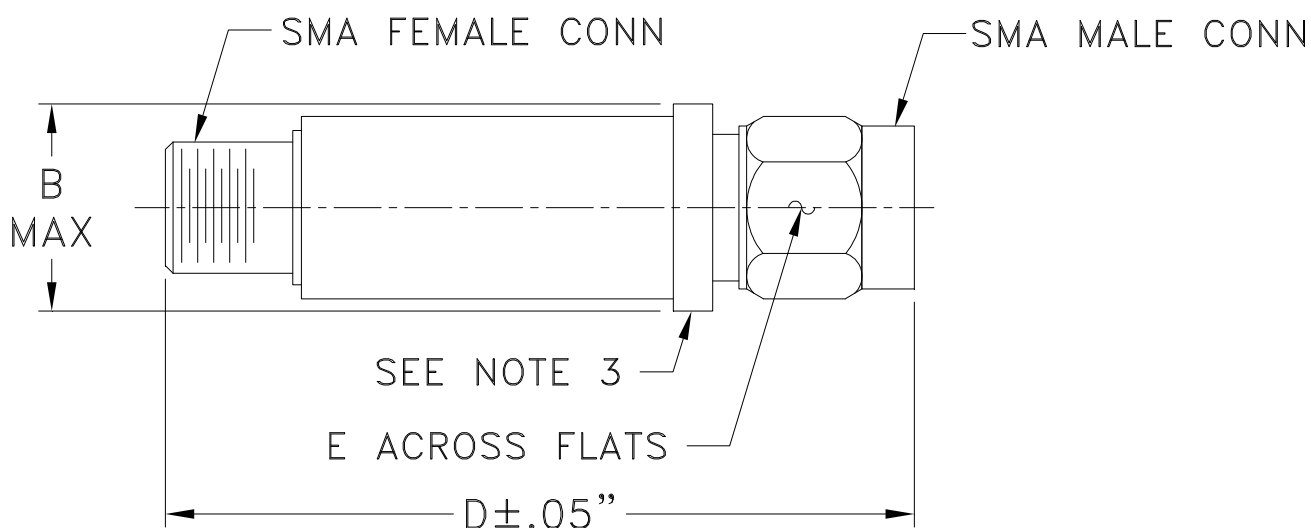


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Outline Dimensions



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