

High Pass Filter

50Ω 5500 to 10000 MHz

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 uni-body construction, small size
- 5 sections
- Temperature stable
- Excellent power handling, 7W
- Low cost

Application

- Sub-harmonic rejection and DC blocking
- Transmitters/Receivers
- Lab use

VHF-5050+



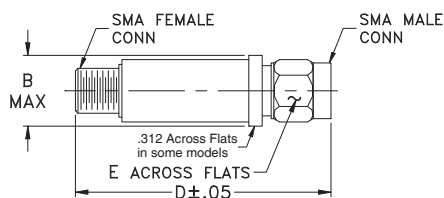
CASE STYLE: FF704

Connectors	Model
SMA	VHF-5050+

+RoHS Compliant

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

Outline Drawing



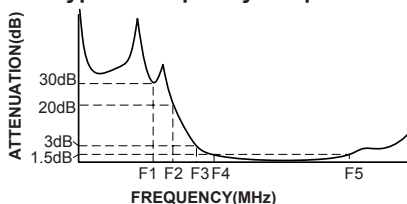
Outline Dimensions (inch mm)

B	D	E	wt.
.410	1.43	.312	grams
10.41	36.32	7.92	10

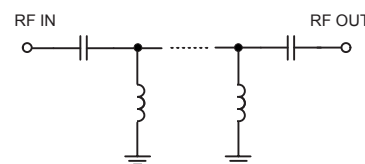
High Pass Filter Electrical Specifications (T_{AMB} = 25°C)

STOPBAND (MHz)		fco, MHz	PASSBAND (MHz)		VSWR	NO. OF SECTIONS
(Loss>30dB)	(Loss>20dB)	Nom.	(Loss<1.5dB)	(Loss<2dB)	Typ.	
Typ. DC-F1	Min. DC-F2	Typ. F3	Max. F4-F5	Max.	Stopband Frequency (MHz)	
DC-3600	DC-4200	5050	5650-9700	5500-10000	20:1 5200-10000	5

Typical Frequency Response



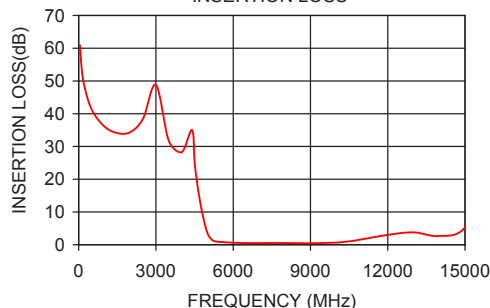
Electrical schematic



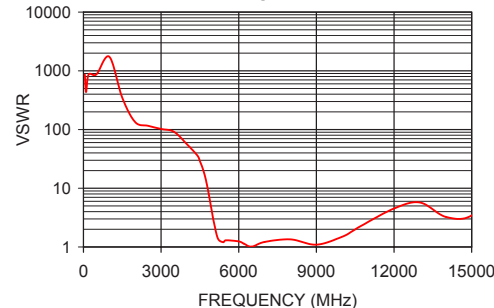
Typical Performance Data at 25°C

Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)
50	60.91	868.59
1000	36.10	1737.18
3600	30.42	62.05
4200	31.29	46.96
4700	13.75	15.81
4800	9.55	9.96
4950	4.71	4.30
5050	2.71	2.51
5200	1.34	1.38
5500	0.85	1.30
5650	0.79	1.35
9700	0.53	1.27
10000	0.66	1.50
10700	1.25	2.25
12000	2.99	4.52
14000	2.65	3.25
15000	5.25	3.45

VHF-5050+
INSERTION LOSS



VHF-5050+
VSWR



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 High Pass Filter

VHF-5050+

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	61.79	60.91	62.27	0.03	0.02	0.03	0.01	0.01	0.01
100	55.03	55.32	55.26	0.05	0.04	0.05	0.01	0.01	0.01
200	49.23	49.15	48.87	0.04	0.02	0.02	0.01	0.00	0.01
500	41.30	41.37	41.39	0.06	0.02	0.01	0.04	0.02	0.00
1000	36.08	36.10	36.20	0.05	0.01	0.03	0.04	0.00	0.02
2000	34.14	34.38	34.58	0.06	0.13	0.16	0.01	0.08	0.11
2500	37.93	38.49	38.92	0.08	0.15	0.17	0.06	0.13	0.16
3000	51.75	48.82	46.84	0.07	0.17	0.21	0.09	0.18	0.22
3600	30.66	30.42	30.20	0.16	0.28	0.35	0.16	0.27	0.34
4000	27.97	28.27	28.55	0.17	0.31	0.44	0.23	0.36	0.45
4200	30.12	31.29	32.56	0.21	0.37	0.53	0.27	0.41	0.52
4400	39.82	35.04	31.35	0.30	0.48	0.69	0.36	0.53	0.68
4500	27.95	25.23	23.13	0.40	0.60	0.84	0.42	0.62	0.81
4600	20.61	18.79	17.30	0.53	0.78	1.05	0.56	0.79	1.03
4700	15.15	13.75	12.59	0.77	1.10	1.46	0.81	1.13	1.47
4800	10.65	9.55	8.65	1.28	1.75	2.28	1.30	1.79	2.31
4950	5.34	4.71	4.26	3.16	4.12	5.07	3.26	4.22	5.22
5000	4.07	3.62	3.31	4.39	5.56	6.70	4.44	5.64	6.89
5050	2.98	2.71	2.53	5.92	7.34	8.68	6.08	7.52	9.03
5200	1.28	1.34	1.41	13.60	15.90	17.64	14.07	17.22	20.68
5400	0.73	0.91	1.06	24.89	20.64	19.19	25.89	21.97	20.26
5500	0.66	0.85	1.01	19.66	17.70	17.05	19.79	18.10	17.38
5650	0.59	0.79	0.96	17.14	16.46	16.10	17.17	16.46	16.03
6000	0.44	0.62	0.78	18.79	19.25	19.00	18.53	19.09	18.90
6500	0.32	0.50	0.67	31.67	43.34	36.09	28.05	33.19	30.84
7000	0.30	0.51	0.71	23.29	20.15	18.59	22.45	19.50	17.57
8000	0.39	0.53	0.71	14.42	16.64	17.77	14.14	16.18	17.20
9000	0.25	0.45	0.65	23.64	27.15	29.97	21.22	24.56	30.13
9700	0.30	0.53	0.75	17.30	18.63	20.18	16.90	18.73	21.00
10000	0.42	0.66	0.86	13.66	14.04	15.35	13.72	14.42	16.22
10700	0.90	1.25	1.54	8.45	8.30	8.50	8.73	8.46	8.64
12000	2.48	2.99	3.50	4.08	3.91	3.90	4.09	3.90	3.72
13000	3.94	3.78	3.96	2.52	3.07	3.36	2.45	3.08	3.30
14000	3.49	2.65	2.15	3.33	5.52	8.97	2.93	4.83	7.16
15000	3.86	5.25	6.51	5.88	5.19	4.52	4.62	4.14	3.88
16000	15.49	20.70	22.80	1.80	1.53	1.40	1.11	0.79	0.81
17000	13.51	12.32	12.14	0.33	1.03	1.75	0.33	0.85	1.02
18000	6.77	6.10	6.19	2.03	3.07	3.91	1.61	3.07	3.71
19000	3.67	5.60	8.12	10.19	4.57	2.75	5.07	5.13	4.18
20000	18.95	21.81	23.98	0.24	0.74	1.12	0.47	0.79	1.56

REV. X1
VHF-5050+
071010
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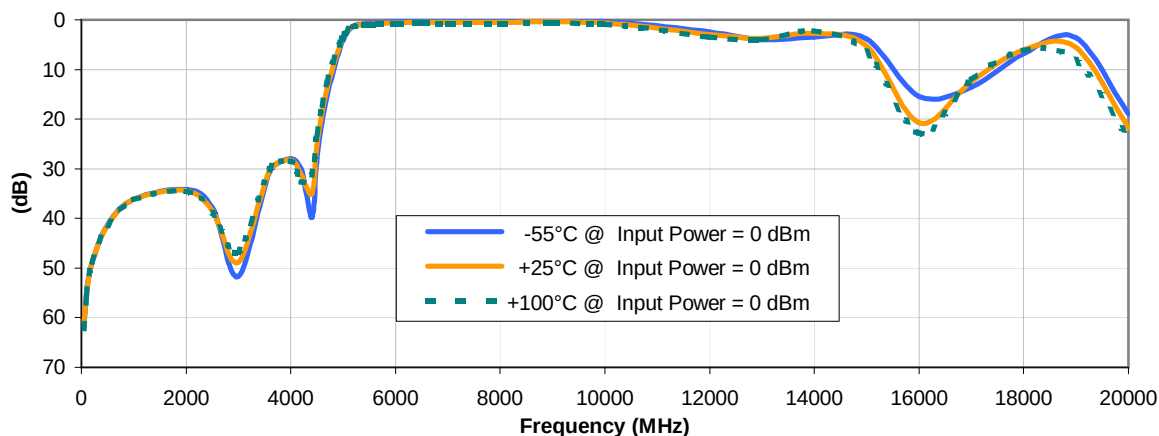


Coaxial High Pass Filter

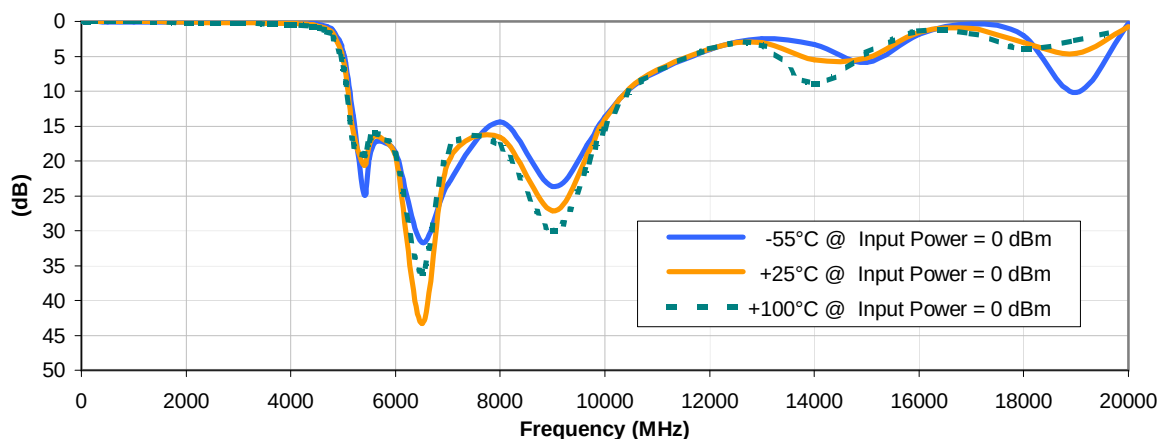
Typical Performance Curves

VHF-5050+

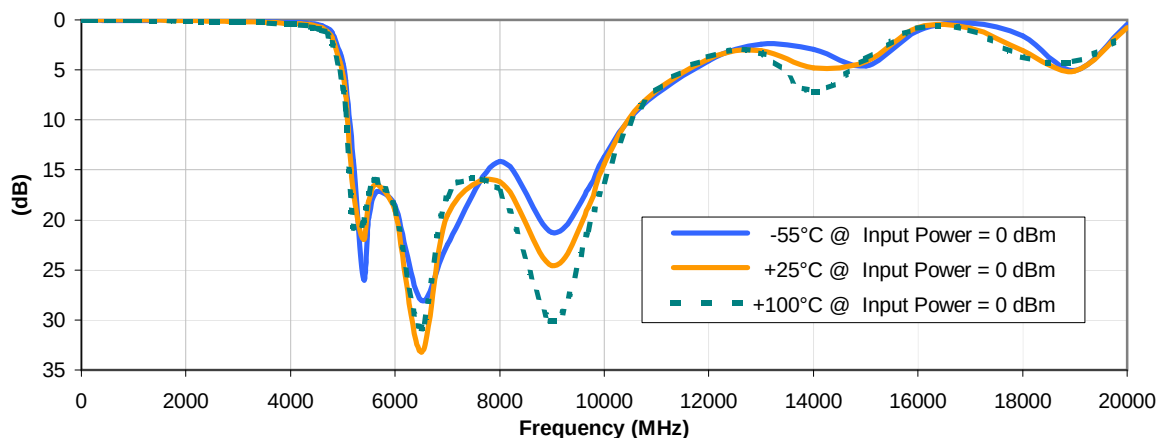
INSERTION LOSS vs. TEMPERATURE



INPUT RETURN LOSS vs. TEMPERATURE



OUTPUT RETURN LOSS vs. TEMPERATURE



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VHF-5050+
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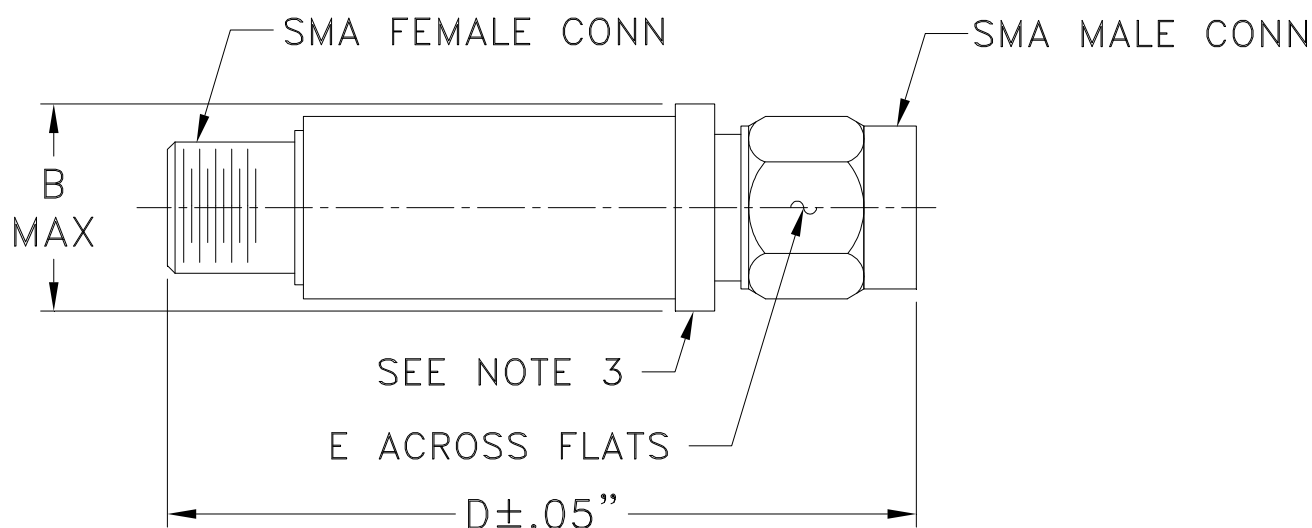
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Outline Dimensions



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