

**THE BIG DEAL**

- Rugged unibody construction, small size
- 5 sections
- Temperature stable
- Excellent power handling, 7W
- DC block in/out, breakdown voltage, 1kV typ
- Low cost



Generic photo used for illustration purposes only

Model No.	VHF-8400+
Case Style	FF704
Connectors	SMA

APPLICATIONS

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

+RoHS Compliant

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

PRODUCT OVERVIEW

VHF-8400+ is a 50Ω high pass filter built in rugged unibody construction. Covering a passband of 9000 to 13000 MHz, this model offers good matching within the passband and good rejection in the stopband. It can handle a high power of 7W with a wide operating temperature range from -55°C to 100°C.

KEY FEATURES

Feature	Advantages
7W power handling	Supports a wide range of system power requirements.
Low insertion loss	Low insertion loss results in better SNR in receiver front end and better power delivery to antenna in transmitters.
Connectorized package	The connectorized package is easy to interface with other devices and well suited for test and measurement applications.



COAXIAL

High Pass Filter

VHF-8400+

ELECTRICAL SPECIFICATIONS AT 25°C

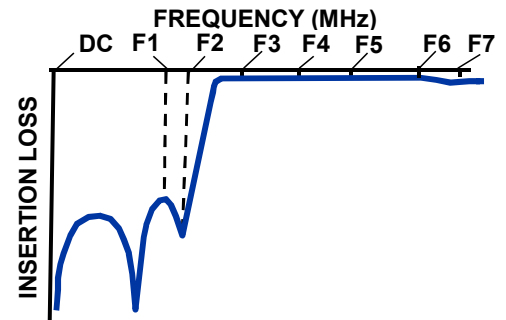
Parameter		F#	Frequency (MHz)	Min.	Typ.	Max.	Units
Freq. cut-off	Insertion Loss	Nom. F3	8400	—	3	—	dB
Stop Band	Insertion Loss	DC-F1	DC - 5700	—	30	—	dB
		DC-F2	DC - 6000	20	—	—	dB
Passband	Insertion Loss	F4-F5	9000 - 9500	—	—	3	dB
		F5-F6	9500 - 12500	—	—	2.5	dB
		F6-F7	12500 - 13000	—	—	3.5	dB
	Return Loss	F3-F7	9000 - 13000	—	14	—	dB
No. of Sections	5						

MAXIMUM RATINGS

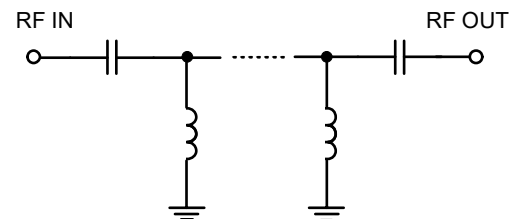
Parameter	Ratings
Operating temperature	-55°C to +100°C
Storage temperature	-55°C to +100°C
RF Power Input*	7W max. at 25°C

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

TYPICAL FREQUENCY RESPONSE



FUNCTIONAL SCHEMATIC





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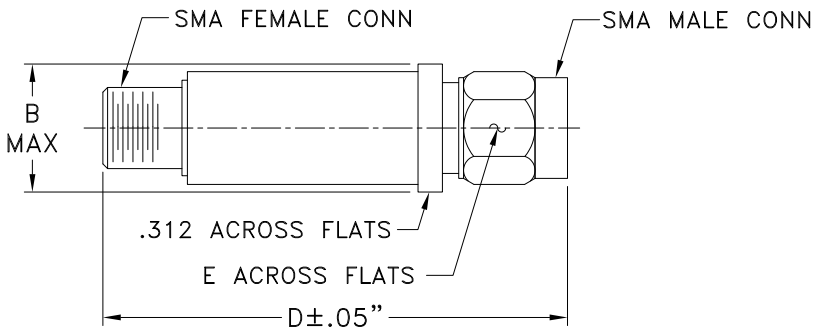
High Pass Filter

VHF-8400+

COAXIAL CONNECTIONS

PORT 1	SMA-Male
PORT 2	SMA-Female

OUTLINE DRAWING



OUTLINE DIMENSIONS (Inches mm)

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

Note. Please refer to case style drawing for details



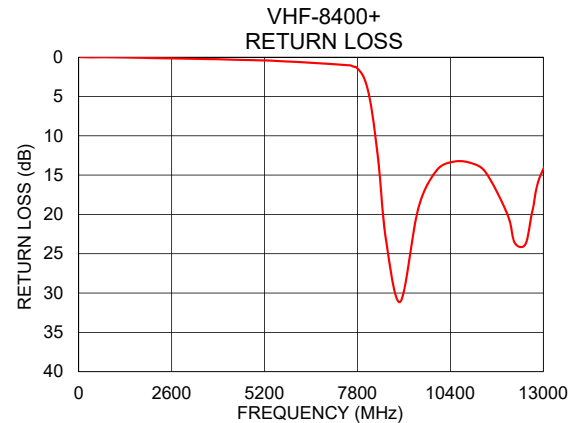
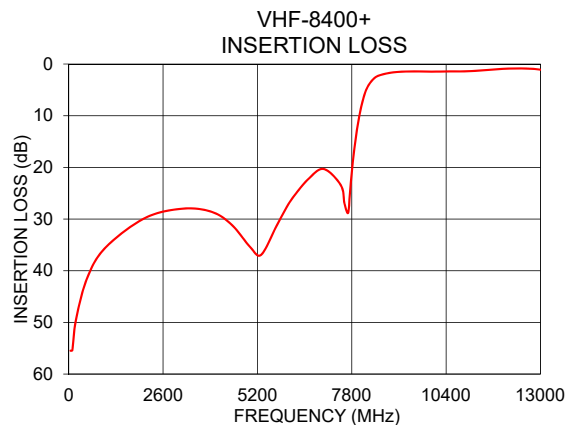
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High Pass Filter

VHF-8400+

TYPICAL PERFORMANCE DATA AT 25°C

Frequency (MHz)	Insertion Loss (dB)	Return Loss (dB)
50	55.48	0.01
500	41.57	0.02
4500	31.17	0.35
5700	31.70	0.52
6000	27.78	0.59
7500	23.46	1.02
8020	9.65	3.09
8400	2.88	13.93
8600	2.11	23.31
9000	1.57	31.10
9500	1.43	19.26
10000	1.47	14.49
12000	0.92	20.02
12500	0.86	23.80
13000	1.10	14.24



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-8400+

Typical Performance Data

FREQUENCY (MHz)	INSERTION LOSS @ +25° C (dB)	INPUT RETURN LOSS @ +25° C (dB)	OUTPUT RETURNLOSS @ +25° C (dB)
38	59.86	0.08	0.01
50	58.86	0.01	0.03
290	46.41	0.03	0.01
500	41.63	0.03	0.04
1000	35.89	0.03	0.04
1500	32.69	0.07	0.05
2000	30.76	0.13	0.09
2500	29.68	0.15	0.13
3000	29.37	0.16	0.17
3500	29.92	0.24	0.19
4000	31.45	0.26	0.22
4500	34.99	0.25	0.26
5000	46.58	0.25	0.22
5700	32.89	0.38	0.32
6000	28.58	0.43	0.32
6500	23.87	0.58	0.39
7500	27.70	0.99	0.72
8020	9.25	2.83	2.32
8400	2.32	10.31	9.35
8600	1.43	15.25	14.22
9000	0.97	18.26	18.80
9500	0.86	15.18	15.68
10000	0.89	13.06	13.30
10500	0.84	12.94	13.15
11000	0.80	14.48	14.63
11500	0.66	19.01	18.03
12000	0.62	28.36	21.73
12500	0.72	17.03	16.06
13000	1.12	10.91	10.70
13500	1.75	7.12	7.23
14000	2.56	4.90	4.92
14500	3.32	3.73	3.92
15000	3.92	3.02	3.14
15500	4.20	2.80	2.84
16000	4.17	2.93	2.95
16500	3.68	3.46	3.48
17000	2.83	4.87	4.85
17500	1.73	8.35	8.38
18000	1.17	23.58	18.38
18500	1.96	9.50	8.51
19300	5.31	3.12	2.82

REV. X1
VHF-8400+
071011
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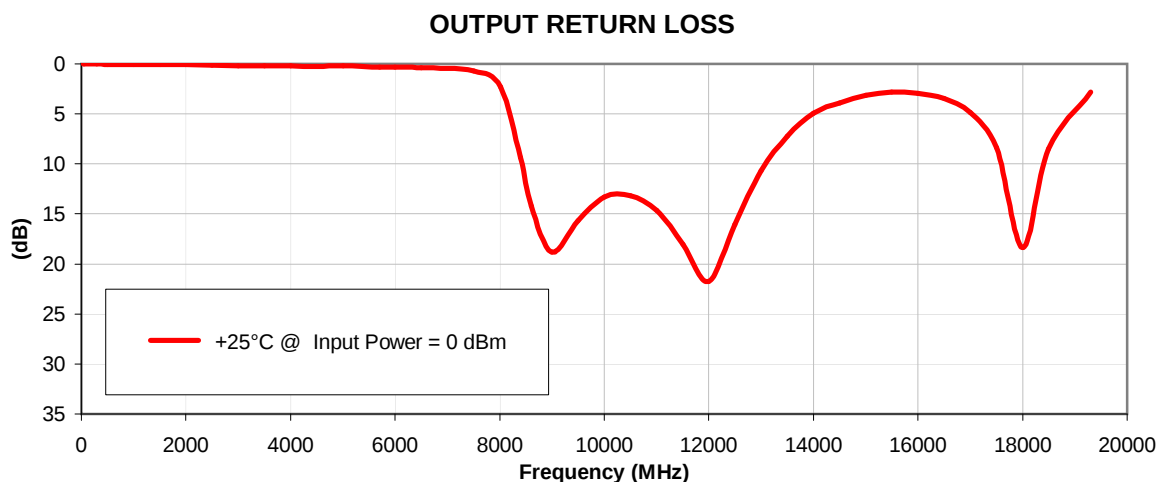
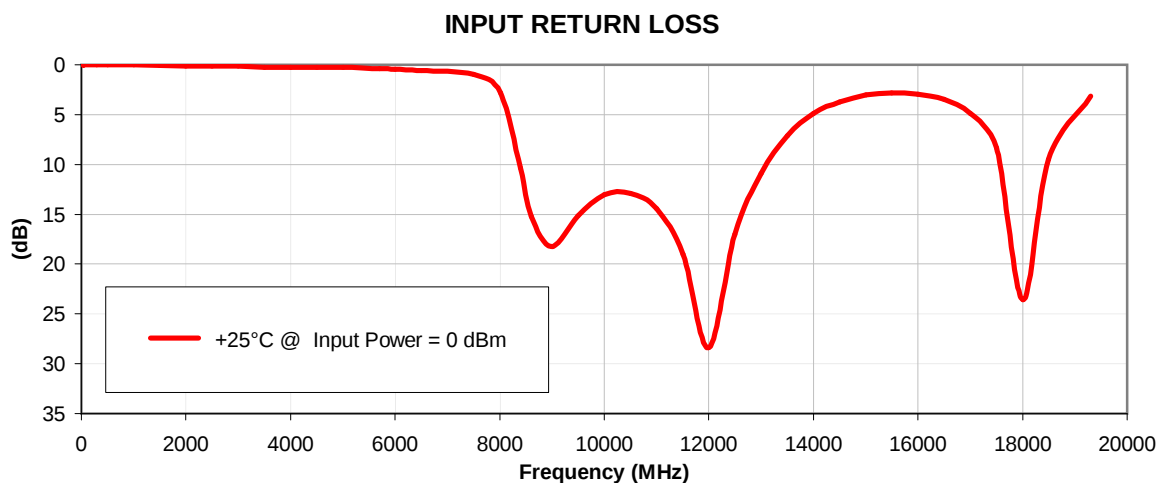
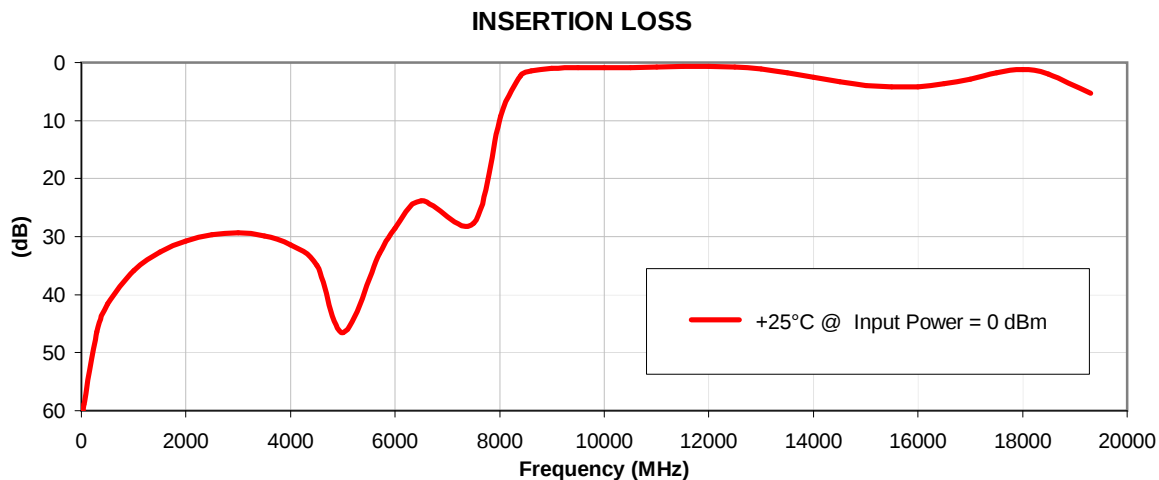
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Coaxial High Pass Filter

VHF-8400+

Typical Performance Curves



REV. X1
VHF-8400+
071011
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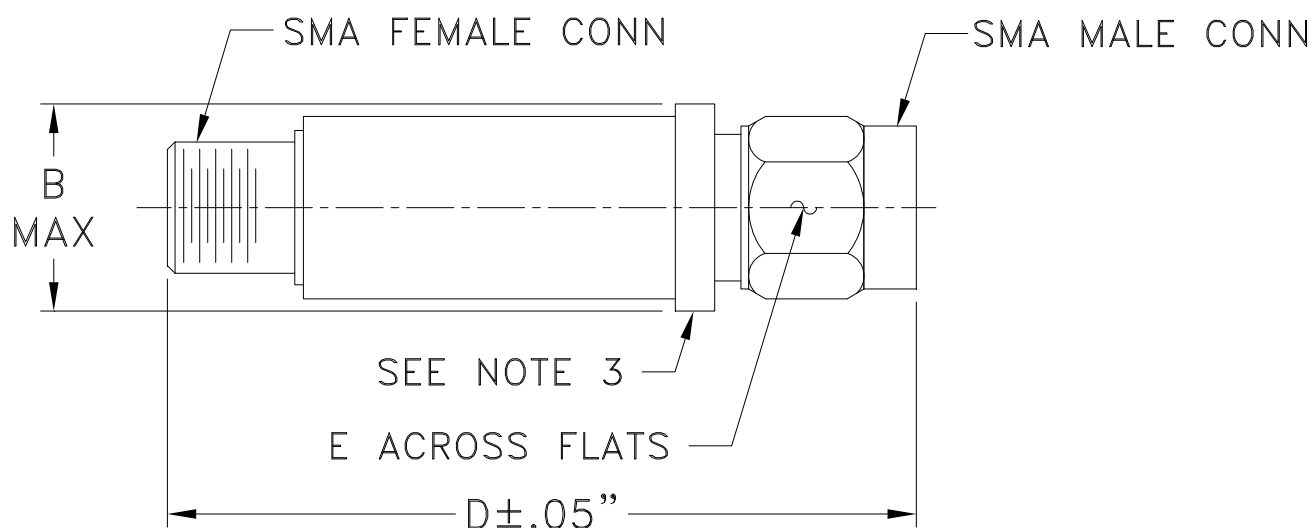
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Outline Dimensions



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.



P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661 For detailed performance specs & shopping online see Mini-Circuits web site



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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