

High Pass Filter

50Ω 5000 to 10100 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, 6W
- Low cost

Application

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

VHF-4400+



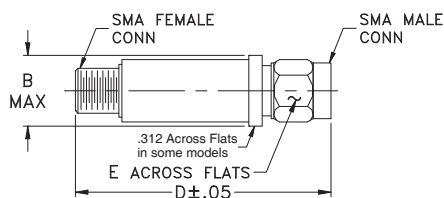
CASE STYLE: FF704

Connectors	Model
SMA	VHF-4400+

+RoHS Compliant

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

Outline Drawing



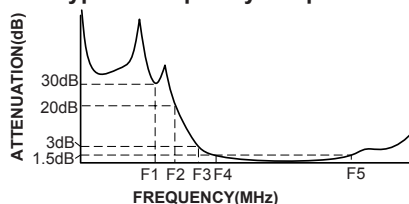
Outline Dimensions (inch mm)

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

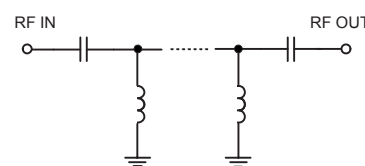
High Pass Filter Electrical Specifications (T_{AMB} = 25°C)

STOPBAND (MHz)		fco, MHz	PASSBAND (MHz)		VSWR		NO. OF SECTIONS
(Loss>30dB)	(Loss>20dB)	Nom.	(Loss<1.5dB)	(Loss<2dB)	Typ.	Frequency	
Typ. DC-F1	Min. DC-F2	Typ. F3	Max. F4-F5	Max.		(MHz)	
1.5:1							
DC-3600	DC-3500	4400	5000-9900	5000-10100	20:1	4600-10100	5

Typical Frequency Response



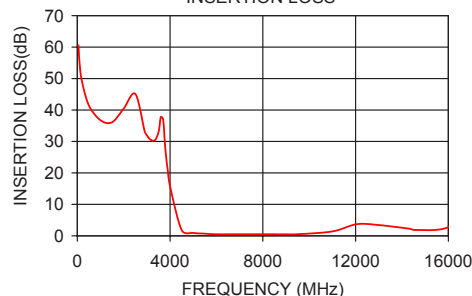
Electrical schematic



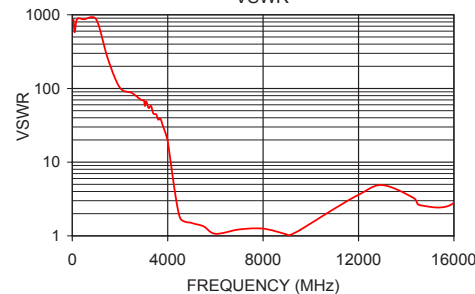
Typical Performance Data at 25°C

Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)
50	60.59	868.59
500	41.41	868.59
2500	45.12	86.86
3500	32.77	51.10
3600	37.78	37.77
3850	23.77	30.49
4050	13.48	16.26
4200	7.79	7.80
4400	2.95	2.72
4600	1.32	1.43
5000	0.93	1.50
9900	0.63	1.42
10100	0.72	1.56
10500	0.94	1.84
11500	1.97	2.86
13000	3.42	4.89
16000	2.77	2.83

VHF-4400+
INSERTION LOSS



VHF-4400+
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-4400+

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	60.59	61.18	0.02	0.02	0.02	0.01	0.01	0.00
100	54.76	54.62	54.97	0.03	0.03	0.02	0.02	0.01	0.01
200	49.34	49.09	48.71	0.03	0.02	0.00	0.00	0.01	0.02
500	41.42	41.41	41.43	0.05	0.02	0.00	0.03	0.00	0.01
1000	36.72	36.75	36.84	0.04	0.02	0.05	0.02	0.03	0.05
1500	35.93	36.10	36.25	0.01	0.07	0.11	0.02	0.08	0.12
2000	39.86	40.46	41.00	0.09	0.17	0.20	0.06	0.12	0.16
2500	46.69	45.12	43.78	0.12	0.20	0.24	0.13	0.21	0.24
3000	32.19	31.93	31.64	0.14	0.25	0.31	0.18	0.28	0.34
3500	31.73	32.77	33.92	0.19	0.34	0.45	0.33	0.46	0.57
3600	35.50	37.78	39.64	0.30	0.46	0.58	0.32	0.48	0.60
3800	30.19	27.32	25.05	0.35	0.56	0.74	0.46	0.65	0.83
3900	22.71	20.84	19.20	0.47	0.69	0.94	0.58	0.81	1.04
4000	17.15	15.72	14.40	0.63	0.91	1.23	0.78	1.09	1.39
4100	12.69	11.49	10.43	1.02	1.41	1.86	1.15	1.59	2.05
4200	8.76	7.79	6.99	1.63	2.24	2.92	1.93	2.62	3.33
4300	5.65	4.98	4.48	3.00	3.93	4.93	3.36	4.46	5.56
4400	3.26	2.95	2.74	5.34	6.69	8.06	6.12	7.76	9.42
4500	1.89	1.84	1.84	9.04	10.76	12.36	10.62	13.11	15.67
4600	1.22	1.32	1.42	13.64	15.11	16.16	17.92	21.85	24.73
4700	0.93	1.10	1.24	16.86	16.66	16.55	24.01	22.00	20.12
5000	0.74	0.93	1.09	14.11	13.98	13.90	14.48	14.25	13.98
5600	0.44	0.63	0.80	18.45	18.29	17.78	18.47	17.97	17.41
6000	0.32	0.50	0.66	26.78	29.72	27.55	24.55	26.82	25.97
7000	0.28	0.50	0.68	21.64	20.02	18.97	21.44	19.64	18.17
8000	0.35	0.50	0.65	15.70	18.99	21.26	15.60	18.80	21.36
9000	0.24	0.47	0.67	27.62	33.53	30.02	25.27	32.38	30.71
9900	0.34	0.63	0.84	15.30	15.24	15.65	15.51	15.98	17.15
10100	0.43	0.72	0.91	13.10	13.25	13.91	13.35	13.82	15.00
10500	0.61	0.94	1.16	10.28	10.56	10.74	10.89	10.90	11.42
10900	0.90	1.32	1.58	8.57	8.40	8.38	9.08	8.71	8.83
11900	2.24	3.21	3.81	5.66	5.16	5.12	8.11	7.51	6.45
13000	3.55	3.42	3.63	3.14	3.60	3.79	2.86	3.45	3.61
14000	3.62	2.77	2.21	2.86	4.53	6.82	2.67	4.24	6.14
15000	0.97	1.33	1.44	11.39	11.68	14.15	9.35	9.84	12.50
16000	1.56	2.77	3.81	7.94	6.42	5.28	8.84	5.68	4.70
17000	8.69	10.19	12.15	0.95	1.36	1.77	1.11	1.15	1.00
18000	28.78	31.80	33.00	0.28	0.61	1.05	0.12	0.62	0.73
19000	13.94	12.50	11.81	0.50	1.17	1.42	0.46	1.35	2.71
20000	8.29	10.92	13.02	2.14	1.89	1.80	2.80	2.30	2.64

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VHF-4400+
071010
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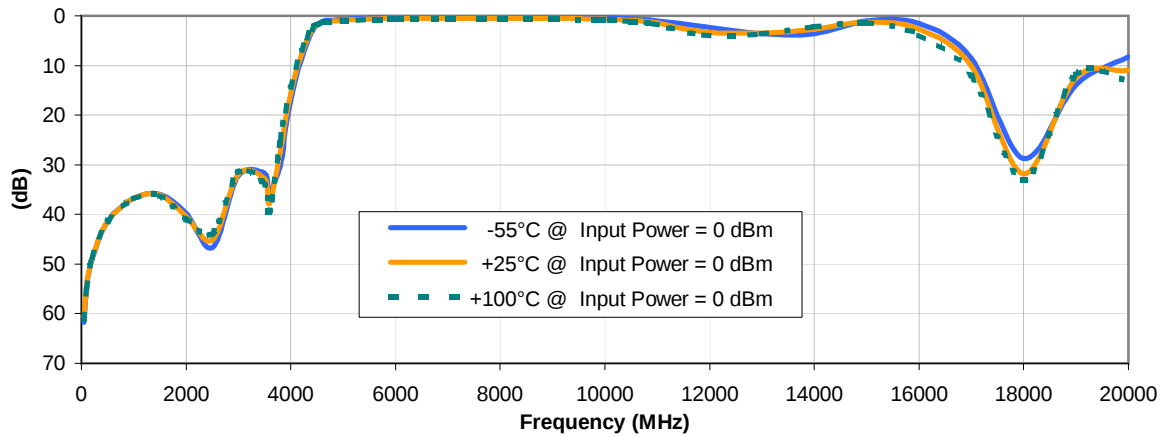


Coaxial High Pass Filter

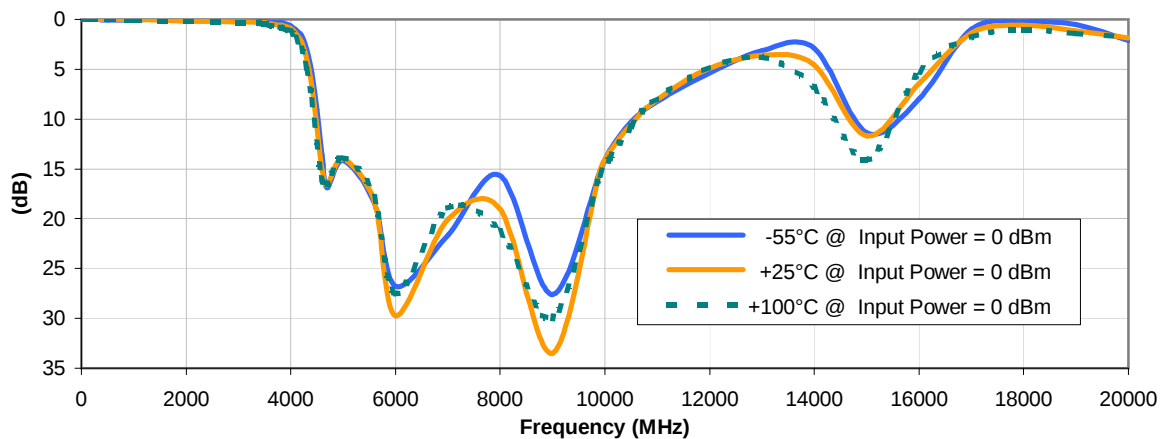
Typical Performance Curves

VHF-4400+

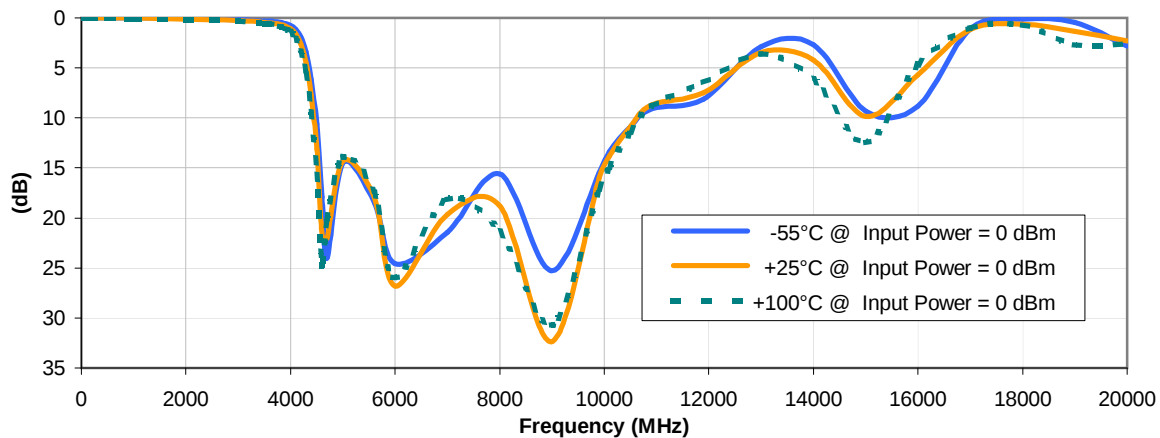
INSERTION LOSS vs. TEMPERATURE



INPUT RETURN LOSS vs. TEMPERATURE



OUTPUT RETURN LOSS vs. TEMPERATURE



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VHF-4400+
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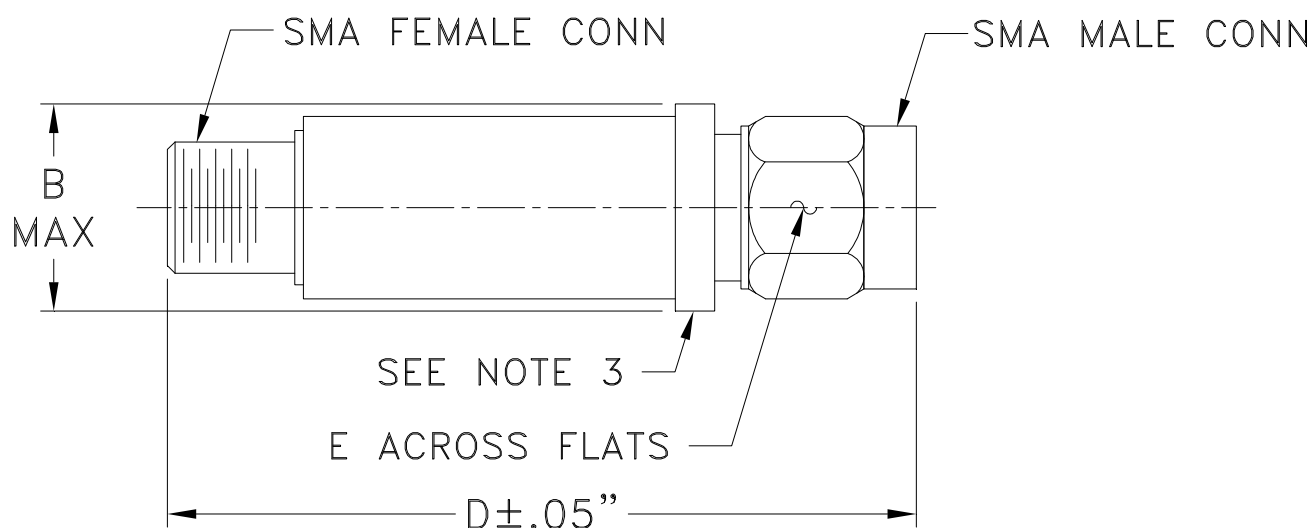
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Outline Dimensions



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