

# High Pass Filter

VHF-440+

50Ω 500 to 2500 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
- 7 sections
- Temperature stable
- Excellent power handling, 7W
- Low cost

## Applications

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



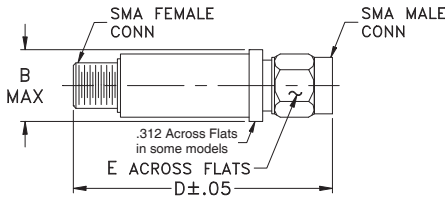
CASE STYLE: FF704

Connectors	Model
SMA	VHF-440+

### +RoHS Compliant

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

## Outline Drawing



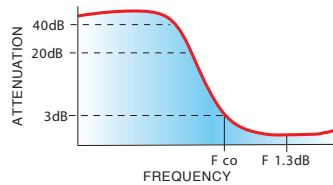
## Outline Dimensions (inch/mm)

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

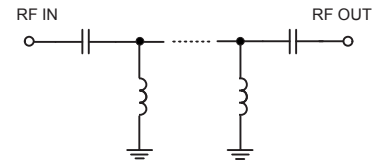
## High Pass Filter Electrical Specifications (T<sub>AMB</sub> = 25°C)

STOPBAND (MHz) Min.	f <sub>co</sub> , MHz Nom.	PASSBAND (MHz)		VSWR Typ.		NO. OF SECTIONS
		(Loss<1.3dB) Max.	(Loss<2dB) Typ.	Stopband	Frequency (MHz)	
(Loss>40dB)	(Loss>20dB)	Typ.	Typ.	1.5:1	500-1700	7
230	350	440	600-1700	500-2500	20:1	500-1700

### typical frequency response

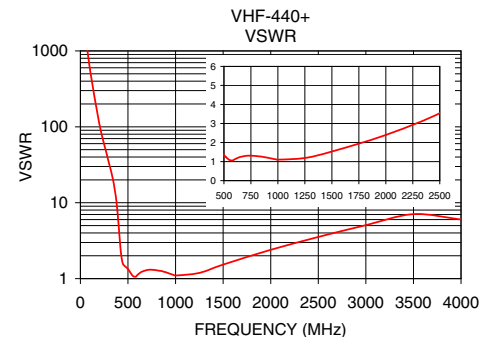
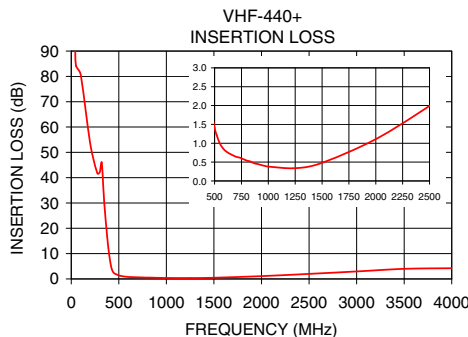


### electrical schematic



## Typical Performance Data at 25°C

Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)
50	84.17	1737.18
100	80.55	579.06
230	47.11	75.53
350	28.57	18.11
385	13.96	8.77
410	6.58	3.72
440	2.73	1.67
450	2.30	1.54
500	1.41	1.34
510	1.30	1.29
600	0.80	1.12
800	0.54	1.29
1000	0.38	1.10
1500	0.48	1.53
1700	0.69	1.84
2500	1.99	3.54
4000	4.24	6.01



### Notes

- 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.
- Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
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# Coaxial High Pass Filter

# VHF-440+

## 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
40	89.74	99.08	90.54	0.03	0.01	0.03	0.00	0.01	0.01
45	84.58	93.43	79.33	0.02	0.00	0.02	0.00	0.00	0.01
46	92.73	73.73	89.07	0.02	0.01	0.02	0.00	0.00	0.01
47	86.67	90.74	81.67	0.01	0.01	0.02	0.00	0.00	0.01
48	79.23	79.49	85.14	0.02	0.01	0.02	0.00	0.01	0.01
49	80.48	82.12	77.30	0.02	0.01	0.02	0.00	0.00	0.01
50	85.67	83.08	80.05	0.02	0.01	0.02	0.00	0.01	0.02
55	83.05	78.01	80.19	0.02	0.01	0.02	0.00	0.01	0.02
56	81.66	80.69	99.90	0.02	0.01	0.02	0.00	0.01	0.02
57	87.74	83.44	87.28	0.02	0.01	0.03	0.00	0.01	0.02
58	95.01	82.31	91.27	0.02	0.01	0.03	0.00	0.01	0.02
59	85.68	94.79	84.72	0.02	0.01	0.03	0.01	0.01	0.02
60	89.36	87.26	94.02	0.02	0.01	0.03	0.00	0.01	0.02
65	92.66	92.50	85.05	0.02	0.01	0.03	0.00	0.01	0.02
70	89.72	85.83	95.42	0.02	0.02	0.03	0.00	0.01	0.02
75	97.19	87.17	85.56	0.02	0.02	0.03	0.00	0.02	0.03
76	87.12	85.16	88.20	0.02	0.02	0.03	0.00	0.01	0.03
77	85.88	88.07	90.97	0.02	0.02	0.03	0.00	0.02	0.03
78	94.48	90.34	82.41	0.02	0.02	0.03	0.00	0.02	0.03
79	87.39	86.91	88.99	0.02	0.02	0.03	0.00	0.02	0.03
81	86.32	83.46	88.25	0.02	0.02	0.03	0.00	0.02	0.03
85	82.23	87.13	82.25	0.02	0.02	0.03	0.00	0.02	0.03
90	97.33	84.13	85.81	0.02	0.02	0.04	0.00	0.03	0.04
95	85.26	80.04	91.20	0.03	0.03	0.04	0.00	0.03	0.04
100	81.98	88.05	89.37	0.03	0.03	0.05	0.01	0.03	0.05
150	68.65	69.38	67.78	0.08	0.09	0.12	0.05	0.08	0.10
200	52.70	52.41	52.25	0.16	0.19	0.22	0.13	0.17	0.21
230	46.63	46.51	46.28	0.24	0.26	0.31	0.18	0.24	0.29
300	42.33	42.81	43.30	0.53	0.60	0.68	0.46	0.54	0.62
350	26.87	26.05	25.16	1.08	1.25	1.44	0.89	1.06	1.23
400	7.85	7.56	7.26	4.55	5.40	6.49	3.60	4.22	4.96
440	2.21	2.38	2.55	23.56	24.72	23.60	14.12	14.48	14.65
500	1.18	1.31	1.44	17.38	17.96	18.52	17.87	18.88	19.99
600	0.67	0.79	0.89	23.25	22.34	20.88	24.34	23.17	21.62
700	0.55	0.64	0.72	17.63	17.84	17.22	17.50	17.71	16.99
800	0.45	0.53	0.60	18.12	18.64	18.43	17.82	18.42	18.17
900	0.37	0.44	0.50	21.51	22.38	22.95	21.02	21.79	22.34
1000	0.29	0.37	0.43	31.50	32.42	33.89	28.08	27.96	29.40
1100	0.26	0.34	0.41	30.68	29.54	25.99	27.76	26.87	25.15
1200	0.28	0.35	0.42	20.52	20.98	19.68	20.29	20.69	19.66
1300	0.31	0.39	0.46	16.78	16.84	16.06	16.83	16.88	16.16
1400	0.38	0.46	0.54	14.03	14.17	13.73	14.16	14.31	13.89
1500	0.47	0.55	0.63	12.27	12.23	12.01	12.44	12.42	12.19
1600	0.57	0.65	0.72	10.68	10.76	10.68	10.84	10.93	10.87
1700	0.70	0.79	0.85	9.58	9.58	9.59	9.74	9.75	9.76
1800	0.85	0.93	0.97	8.47	8.60	8.70	8.60	8.76	8.85
1900	0.98	1.07	1.10	7.67	7.77	7.91	7.81	7.91	8.04
2000	1.17	1.24	1.26	6.90	7.06	7.22	7.02	7.19	7.34
2100	1.32	1.40	1.42	6.34	6.44	6.59	6.44	6.57	6.71
2200	1.51	1.60	1.62	5.82	5.91	6.05	5.89	6.03	6.16
2300	1.65	1.77	1.80	5.45	5.46	5.56	5.50	5.55	5.65
2400	1.83	1.95	1.97	5.03	5.04	5.13	5.04	5.13	5.22
2500	1.98	2.14	2.19	4.74	4.69	4.75	4.71	4.76	4.83

REV. X1  
VHF-440+  
090402  
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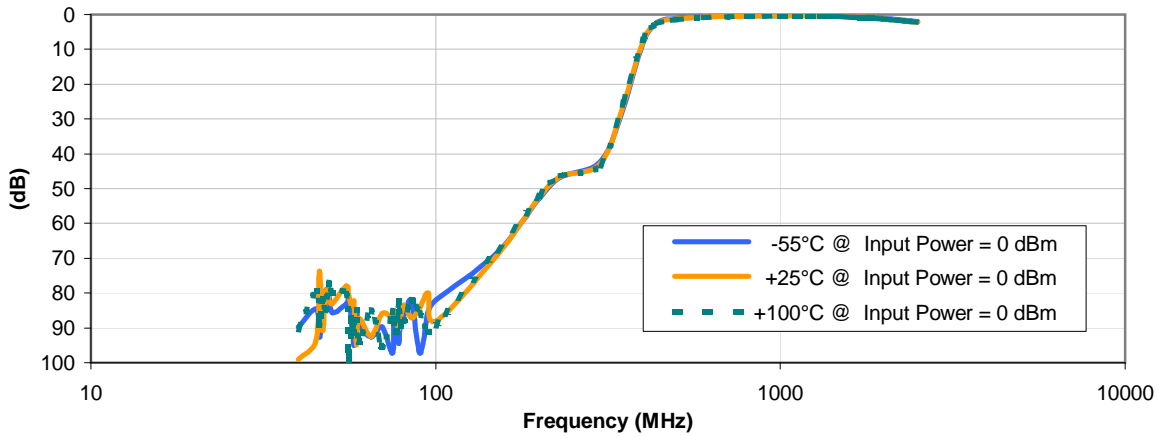


# Coaxial High Pass Filter

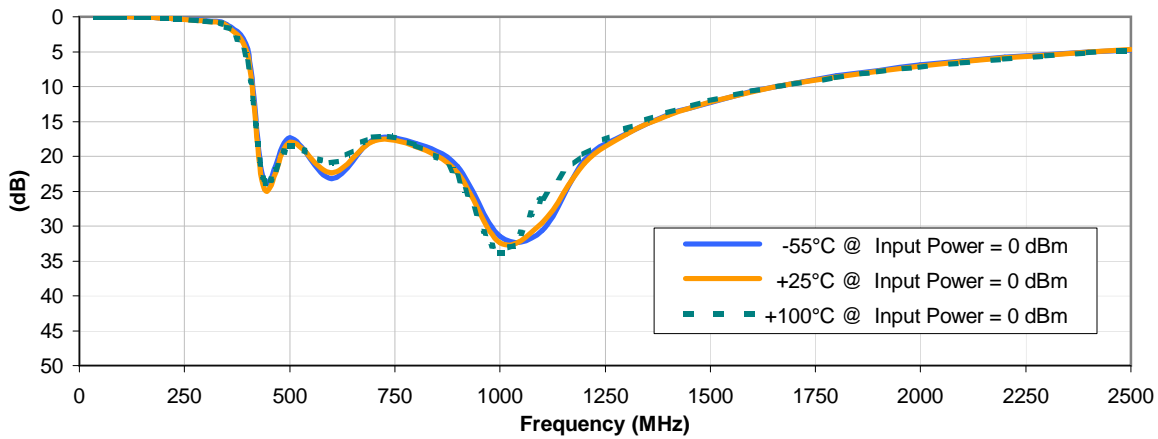
## Typical Performance Curves

# VHF-440+

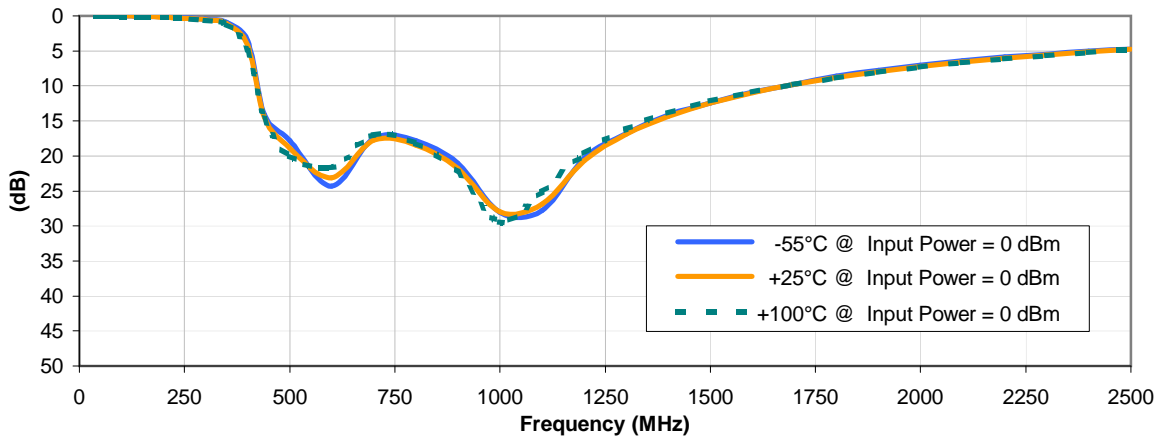
### INSERTION LOSS vs. TEMPERATURE



### INPUT RETURN LOSS vs. TEMPERATURE



### OUTPUT RETURN LOSS vs. TEMPERATURE



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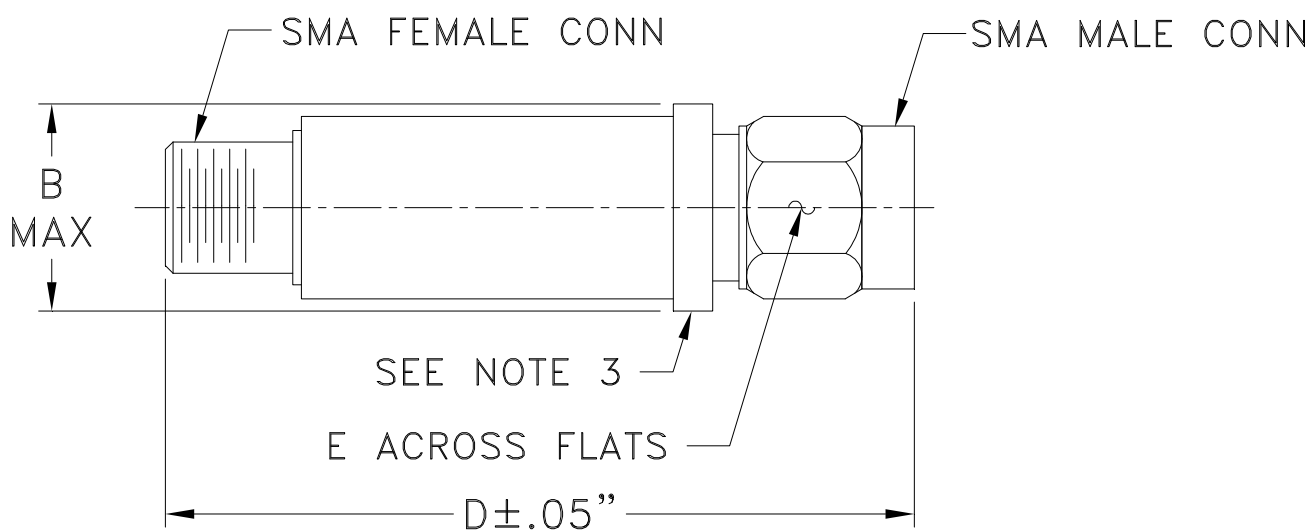


# Case Style

# FF

## FF704

### 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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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.

<b>Specification</b>	<b>Test/Inspection Condition</b>	<b>Reference/Spec</b>
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