

High Pass Filter

VHF-4600+

50Ω 5000 to 11000 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



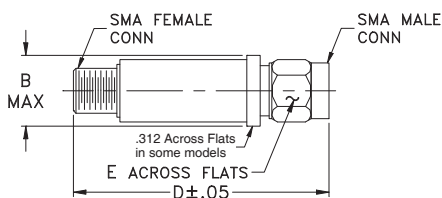
CASE STYLE: FF704

Connectors	Model
SMA	VHF-4600+

+RoHS Compliant

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

Outline Drawing



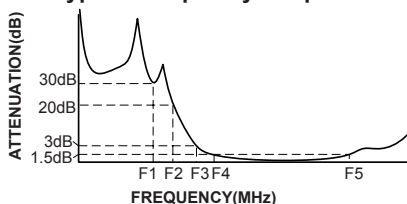
Outline Dimensions (inch/mm)

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

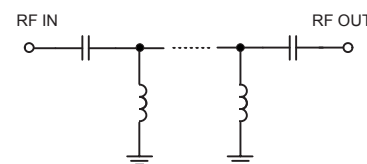
High Pass Filter Electrical Specifications (T_{AMB} = 25°C)

STOPBAND (MHz)		f _{co} , MHz	PASSBAND (MHz)		VSWR		NO. OF SECTIONS
(Loss>30dB)	(Loss>20dB)	Nom.	(Loss<1.5dB)	(Loss<2dB)	Typ.	Frequency (MHz)	
Typ. DC-F1	Min. DC-F2	Typ. F3	Max. F4-F5	Max.			
DC-3700	DC-3800	4600	5200-10500	5000-11000	20:1	4720-11000	5

Typical Frequency Response



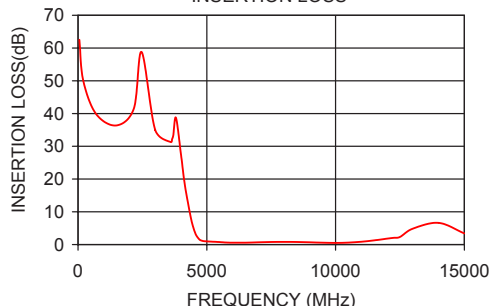
Electrical schematic



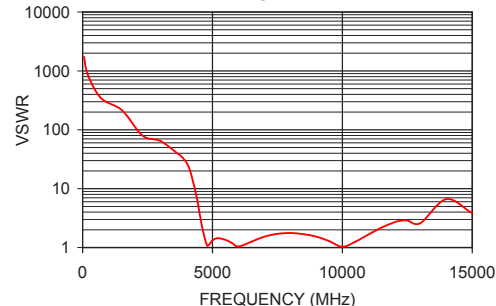
Typical Performance Data at 25°C

Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)
50	62.53	1737.18
1500	36.36	217.15
2470	58.79	72.39
3700	33.38	38.61
3800	38.72	35.46
4150	18.07	19.54
4380	8.20	7.53
4500	4.59	3.82
4600	2.66	2.24
4720	1.51	1.35
5000	0.97	1.32
5200	0.89	1.44
8000	0.82	1.76
10500	0.60	1.26
11000	0.85	1.66
12250	2.05	2.86
15000	3.40	3.82

VHF-4600+
INSERTION LOSS



VHF-4600+
VSWR



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.
- 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-4600+

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	61.78	61.53	63.84	0.04	0.04	0.05	0.00	0.01	0.00
200	50.38	50.02	49.82	0.02	0.00	0.01	0.01	0.01	0.02
700	39.81	39.82	39.86	0.04	0.00	0.02	0.03	0.02	0.05
1500	36.21	36.30	36.41	0.01	0.07	0.11	0.03	0.10	0.15
2170	40.97	41.54	42.09	0.08	0.16	0.19	0.06	0.12	0.16
2470	55.19	58.62	61.37	0.04	0.14	0.17	0.12	0.20	0.26
3000	35.32	34.97	34.56	0.11	0.22	0.26	0.15	0.26	0.37
3600	30.87	31.33	31.67	0.21	0.36	0.45	0.26	0.41	0.53
3650	31.48	32.12	32.69	0.24	0.38	0.46	0.26	0.41	0.55
3700	32.46	33.40	34.29	0.25	0.40	0.49	0.23	0.37	0.53
4000	29.68	27.22	25.36	0.39	0.58	0.72	0.39	0.58	0.75
4150	19.44	18.00	16.84	0.57	0.83	1.05	0.61	0.84	1.07
4380	8.86	8.11	7.47	1.68	2.27	2.84	1.71	2.20	2.71
4500	4.90	4.48	4.15	3.64	4.63	5.64	3.56	4.39	5.25
4600	2.70	2.56	2.47	6.82	8.39	9.98	6.54	7.78	9.03
4720	1.38	1.46	1.53	13.72	16.80	20.05	12.49	14.23	15.70
4750	1.19	1.31	1.41	16.26	20.15	24.61	14.33	16.01	17.28
4770	1.11	1.24	1.36	18.45	23.19	28.99	15.71	17.23	18.18
4800	0.99	1.14	1.28	22.81	30.13	33.69	17.78	18.75	19.03
4880	0.81	1.00	1.16	30.19	24.59	21.85	20.17	19.19	18.32
5000	0.72	0.91	1.08	18.35	17.49	16.92	17.21	16.57	16.11
5500	0.50	0.68	0.83	16.12	16.73	17.66	16.28	16.99	18.04
5750	0.38	0.57	0.72	20.14	21.38	22.74	19.84	21.86	24.08
6000	0.32	0.51	0.67	28.09	32.44	30.99	25.59	31.26	49.53
6500	0.27	0.49	0.69	21.01	19.41	18.65	20.43	19.41	19.39
7000	0.37	0.61	0.82	14.07	13.82	13.55	13.94	13.98	14.33
7500	0.48	0.71	0.95	11.48	11.78	11.62	11.48	11.96	12.18
8000	0.55	0.72	0.96	10.56	11.63	11.60	10.60	11.79	11.89
8500	0.50	0.67	0.87	11.28	12.55	13.13	11.46	12.68	12.90
9000	0.33	0.58	0.76	14.35	14.66	15.96	14.71	14.77	15.20
9500	0.22	0.50	0.72	19.78	18.97	19.06	20.40	18.77	17.71
10000	0.17	0.46	0.74	29.77	27.89	21.69	31.06	24.84	19.75
11000	0.39	0.78	1.08	13.23	12.48	12.70	12.53	12.26	11.86
11500	0.78	1.19	1.47	9.04	8.88	9.23	8.68	9.01	9.19
12000	1.21	1.70	2.06	7.03	6.84	6.97	6.85	6.96	7.48
12250	1.34	1.96	2.46	6.63	6.17	6.07	6.49	6.26	6.65
12500	1.55	2.32	3.05	6.25	5.98	5.71	6.00	5.77	6.01
13000	3.54	4.86	5.70	8.33	6.43	4.44	4.76	4.46	4.16
14000	7.40	6.33	5.46	1.79	2.62	3.15	9.60	7.33	6.55
15000	2.75	2.88	2.50	4.22	4.94	6.62	4.70	4.98	6.48

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VHF-4600+
071011
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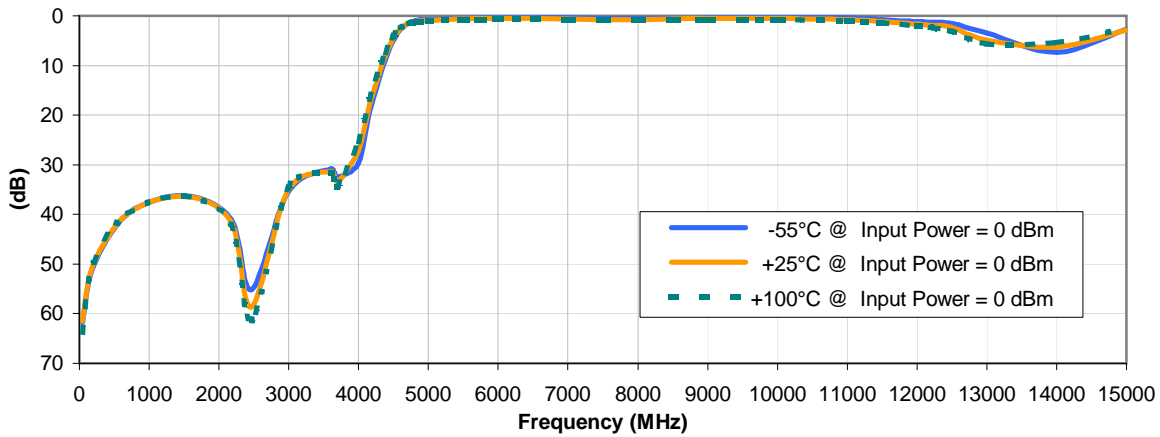


Coaxial High Pass Filter

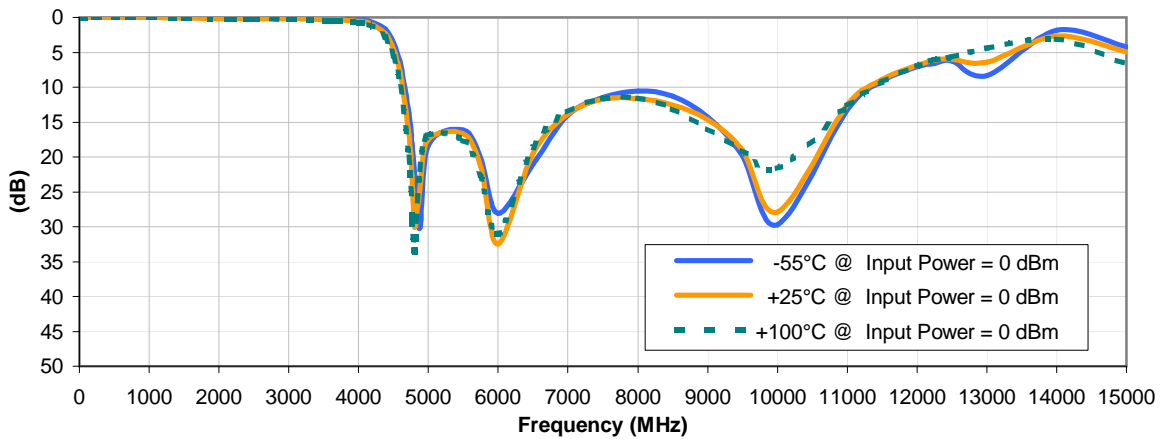
Typical Performance Curves

VHF-4600+

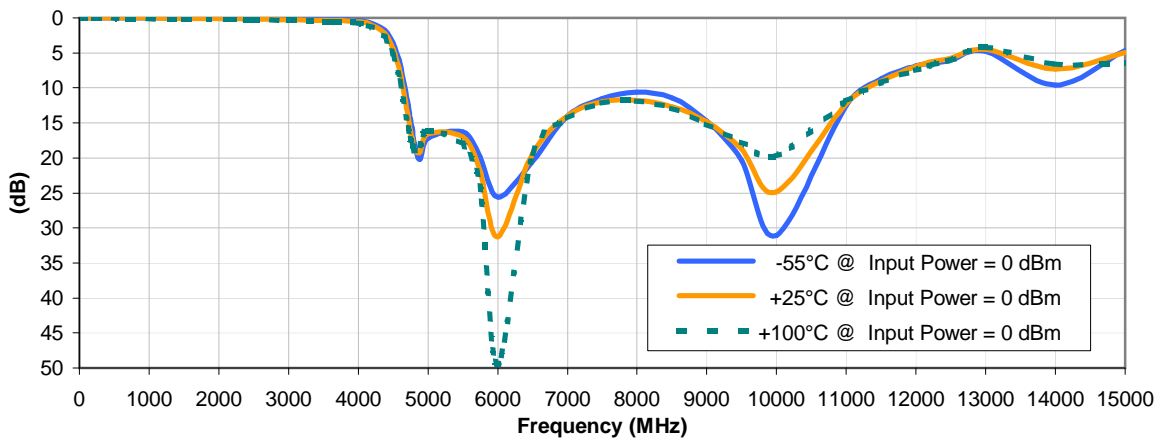
INSERTION LOSS vs. TEMPERATURE



INPUT RETURN LOSS vs. TEMPERATURE



OUTPUT RETURN LOSS vs. TEMPERATURE



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VHF-4600+
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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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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