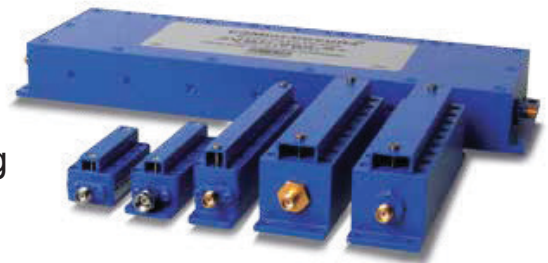


Cavity Bandpass Filters

50Ω DC to 15 GHz

The Big Deal

- Very low insertion loss with excellent power handling
- Very fast roll-off with wide stopband
- Passbands up to 15 GHz
- Stopbands up to 20 GHz



Product Overview

Mini-Circuits' cavity filters are designed by implementing resonant structures with very high Q and are ideal for narrow-band, high-selectivity applications. These designs can provide bandwidths as narrow as 1% with very high selectivity and excellent low noise floor. Low insertion loss combined with excellent power handling makes them well-suited for transmitter and receiver front end. Advanced filter design and construction enables stopband width greater than 3x the center frequency.

Mini-Circuits' cavity filters feature a special protective assembly to prevent accidental de-tuning that would otherwise require expensive replacement or return to factory for re-tuning. Custom integrated assembly with LNA and bias tees results in greatly simplifying system integration. Precise machining allows realization of cavity filters with small form factors for applications where size is critical. Excellent repeatability across units is achieved through precise tuning and process control.

Key Features

Feature	Advantages
Low insertion loss	Low signal loss results in better SNR in receiver front end and better power delivery to antenna in transmitter
Fast roll-off	Higher selectivity results in better adjacent channel rejection and dynamic range
Wide stopband	Wide spur free band results in better receiver sensitivity
High power handling	Well suited for transmitter application
Protective assembly	Prevents accidental de-tuning of precisely tuned resonant circuit

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



Cavity Bandpass Filter

ZVBP-5800-S+

50Ω 5725 to 5875 MHz



Generic photo used for illustration purposes only

CASE STYLE: RD2472

Connectors	Model
SMA-F	ZVBP-5800-S+

Features

- Low insertion loss, 0.8 dB typical
- Good VSWR, 1.3:1 typical
- High rejection
- Broad stopband performance up to 14 GHz
- Fast roll-off

Applications

- Fixed and mobile communication network
- Satellite communication

Electrical Specifications at 25°C

Parameter	F#	Frequency (MHz)	Min.	Typ.	Max.	Unit
Pass Band	Center Frequency	-	-	5800	-	MHz
	Insertion Loss	F1-F2	-	0.8	1.2	dB
	VSWR	F1-F2	5725-5875	-	1.35	1.5
Stop Band, Lower	Insertion Loss	DC-F3	DC - 5200	50	54	dB
	VSWR	DC-F3	DC - 5200	-	20	:1
Stop Band, Upper	Insertion Loss	F4-F5	6400-14000	50	58	dB
	VSWR	F4-F5	6400-14000	-	20	:1

Maximum Ratings

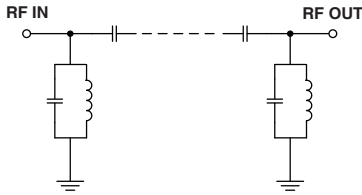
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power Input	10 W

Permanent damage may occur if any of these limits are exceeded.

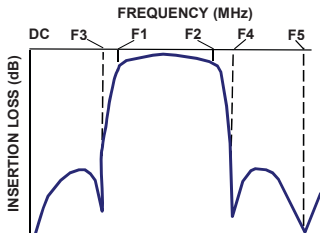
Typical Performance Data at 25°C

Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)	Frequency (MHz)	Group Delay (nsec)
10	76.09	1072.33	5725	4.08
250	98.73	325.08	5730	3.97
2500	102.89	373.13	5740	3.80
5200	56.47	162.97	5750	3.69
5515	30.94	107.74	5760	3.61
5585	20.72	65.76	5770	3.55
5620	14.10	33.49	5780	3.50
5670	3.48	4.30	5790	3.47
5725	0.65	1.13	5800	3.45
5800	0.59	1.15	5810	3.46
5875	0.67	1.12	5820	3.49
5920	1.73	2.18	5830	3.54
5935	3.75	4.39	5840	3.60
5980	13.71	26.60	5845	3.64
6010	19.82	46.76	5850	3.68
6080	30.92	79.77	5855	3.73
6400	59.13	142.22	5860	3.78
7500	94.28	319.86	5865	3.85
10000	83.64	104.54	5870	3.92
14000	99.84	65.07	5875	4.02

Functional Schematic

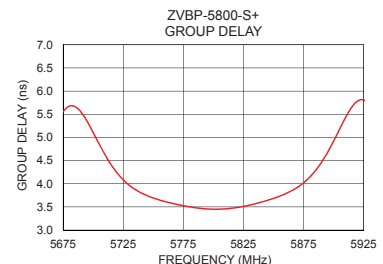
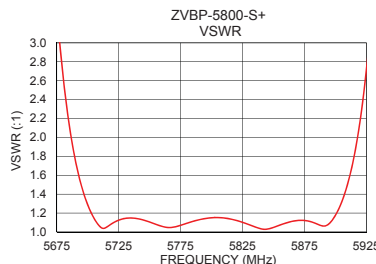
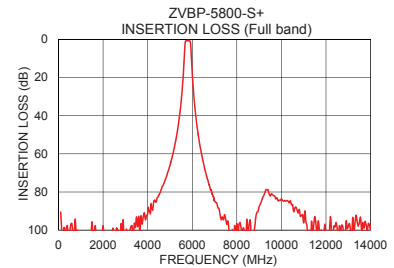
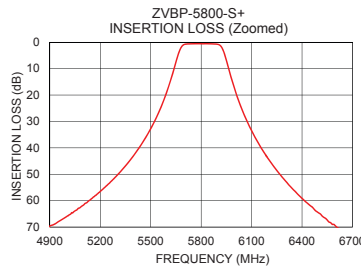


Typical Frequency Response



+RoHS Compliant

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



Notes

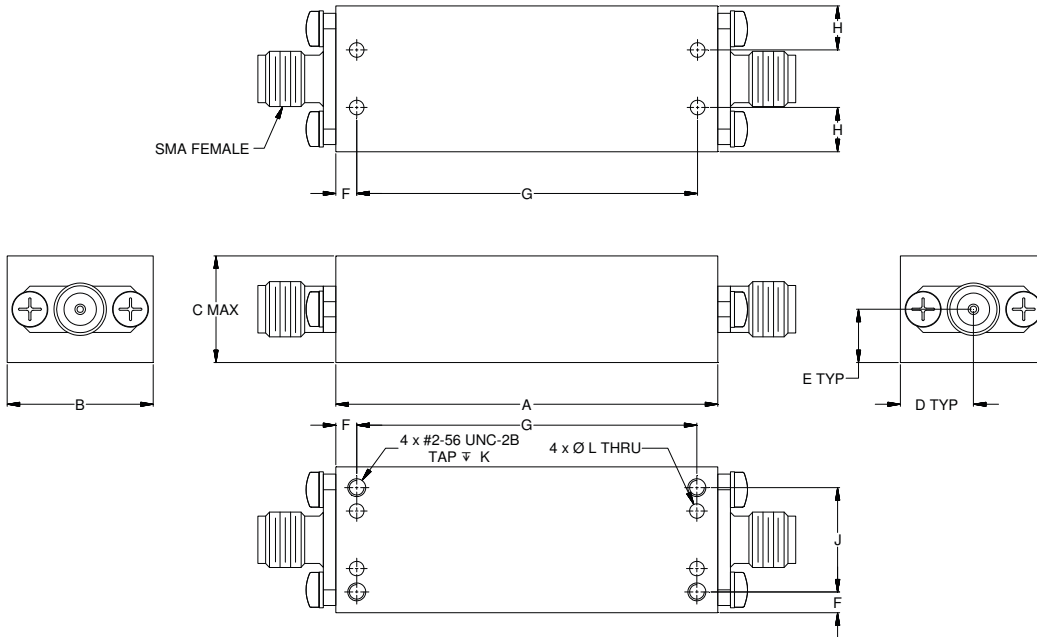
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Coaxial Connections

PORT 1	SMA-FEMALE
PORT 2	SMA-FEMALE

Outline Drawing



Outline Dimensions ($\frac{\text{inch}}{\text{mm}}$)

A	B	C	D	E	F
1.83	.70	.53	.35	.26	.10
46.40	17.75	13.50	8.88	6.50	2.54
G	H	J	K	L	Wt.
1.630	.21	.500	.100	.078	grams
41.40	5.38	12.70	2.54	2.00	36

Note: Please refer to case style drawing for details

Notes

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Cavity Band Pass Filter

ZVBP-5800-S+

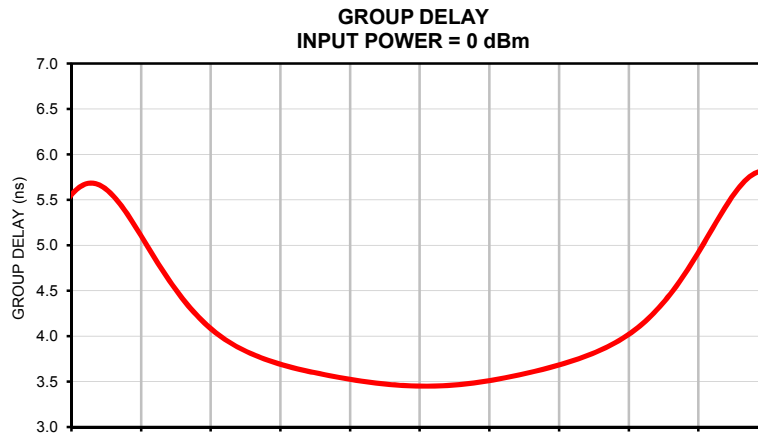
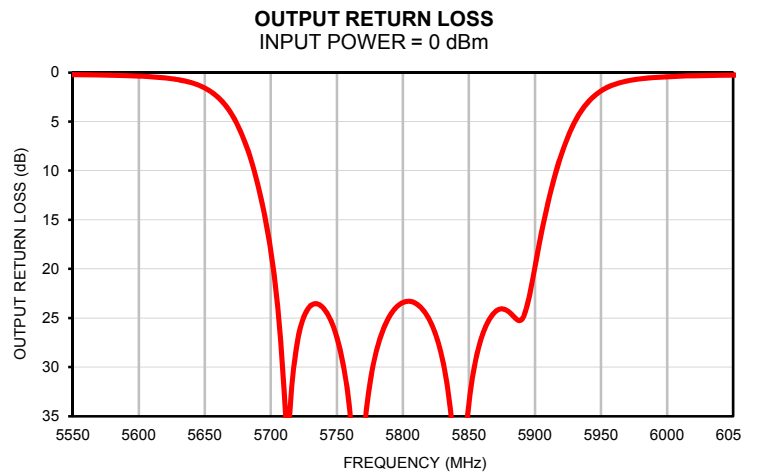
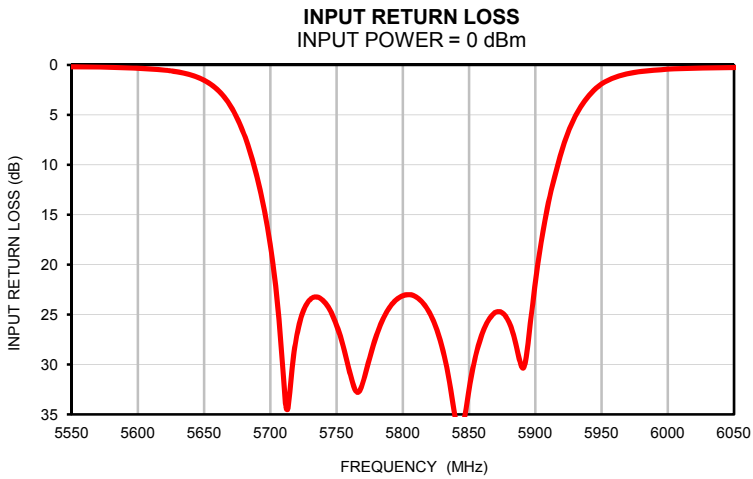
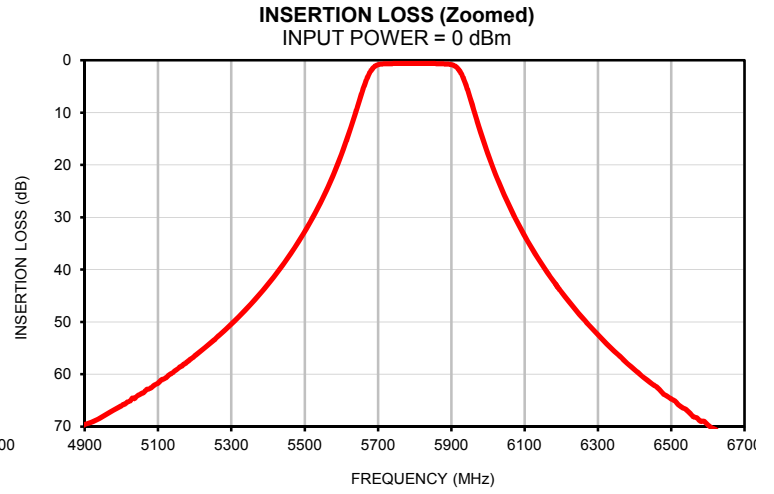
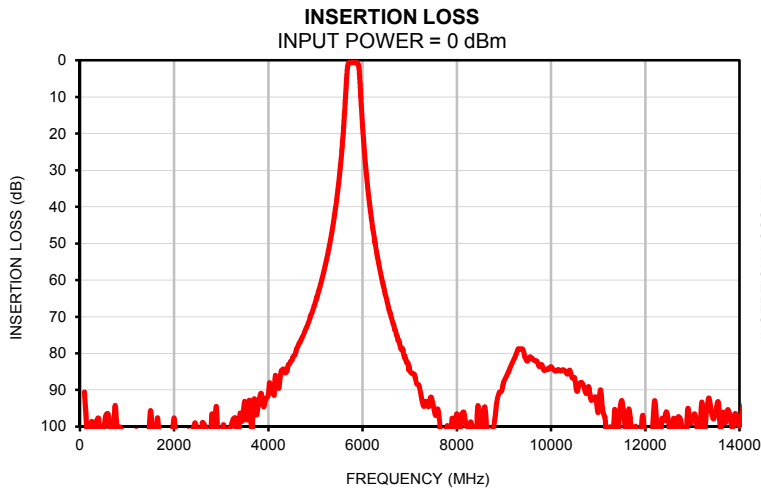
Typical Performance Data

FREQ.	INSERTION LOSS	INPUT RETURN LOSS	OUTPUT RETURN LOSS
(MHz)	(dB)	(dB)	(dB)
10	76.09	0.02	0.02
20	96.58	0.01	0.02
50	81.48	0.02	0.02
100	90.56	0.03	0.03
250	98.73	0.05	0.06
500	101.59	0.08	0.08
750	94.24	0.08	0.09
1000	101.79	0.08	0.09
1500	95.67	0.07	0.07
2000	97.64	0.05	0.06
2500	102.89	0.05	0.05
3000	106.29	0.07	0.08
3500	93.08	0.10	0.11
4000	91.42	0.12	0.13
4500	81.89	0.11	0.12
5000	66.02	0.10	0.12
5200	56.47	0.11	0.13
5500	32.76	0.15	0.18
5520	30.31	0.17	0.19
5585	20.72	0.26	0.30
5600	18.03	0.33	0.37
5620	14.10	0.52	0.56
5640	9.76	1.00	1.04
5650	7.52	1.53	1.58
5670	3.48	4.12	4.18
5675	2.70	5.33	5.40
5775	0.58	29.33	31.70
5800	0.59	23.10	23.41
5825	0.59	26.26	26.77
5875	0.67	24.82	24.07
5900	0.81	21.81	19.80
5920	1.73	8.59	8.33
5930	2.93	5.20	5.07
5935	3.75	4.02	3.92
5950	6.84	1.92	1.87
5975	12.60	0.75	0.73
6000	17.89	0.43	0.43
6020	21.64	0.33	0.33
6050	26.59	0.25	0.26
6080	30.92	0.22	0.23
6100	33.53	0.20	0.22
6200	44.22	0.16	0.18
6300	52.42	0.14	0.16
6400	59.13	0.12	0.15
7000	84.76	0.07	0.10
7500	94.28	0.05	0.09
8000	96.51	0.08	0.13
8500	103.78	0.12	0.16
9000	87.68	0.14	0.18
9350	78.89	0.17	0.18
9500	82.14	0.15	0.19
10000	83.64	0.17	0.24
10500	86.69	0.23	0.33
11000	96.15	0.31	0.43
11500	92.88	0.32	0.50
12000	104.29	0.27	0.53
12500	99.04	0.25	0.56
13000	98.12	0.28	0.65
13500	95.73	0.32	0.67
14000	99.84	0.27	0.53

FREQ.	GROUP DELAY
(MHz)	(ns)
5725	4.08
5726	4.06
5727	4.03
5728	4.01
5729	3.99
5730	3.97
5731	3.95
5732	3.93
5733	3.91
5734	3.89
5735	3.87
5736	3.86
5737	3.84
5738	3.83
5739	3.81
5740	3.80
5745	3.74
5750	3.69
5755	3.65
5760	3.61
5765	3.58
5770	3.55
5775	3.52
5780	3.50
5785	3.48
5790	3.47
5795	3.45
5800	3.45
5805	3.45
5810	3.46
5815	3.47
5820	3.49
5825	3.51
5830	3.54
5835	3.57
5840	3.60
5845	3.64
5850	3.68
5852	3.70
5853	3.71
5854	3.72
5855	3.73
5856	3.74
5857	3.75
5858	3.76
5859	3.77
5860	3.78
5861	3.80
5862	3.81
5863	3.82
5864	3.83
5865	3.85
5866	3.86
5867	3.88
5868	3.89
5869	3.91
5870	3.92
5871	3.94
5872	3.96
5875	4.02

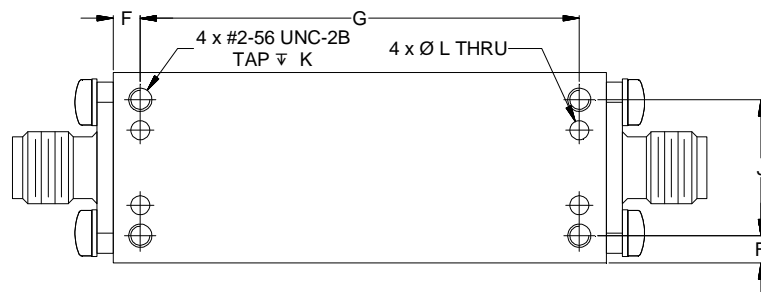
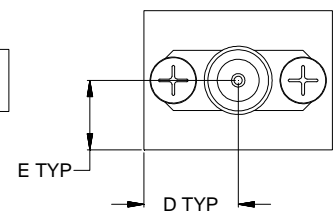
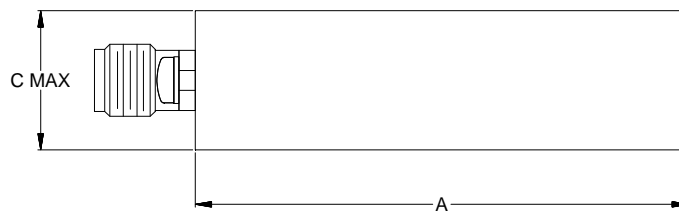
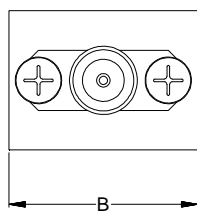
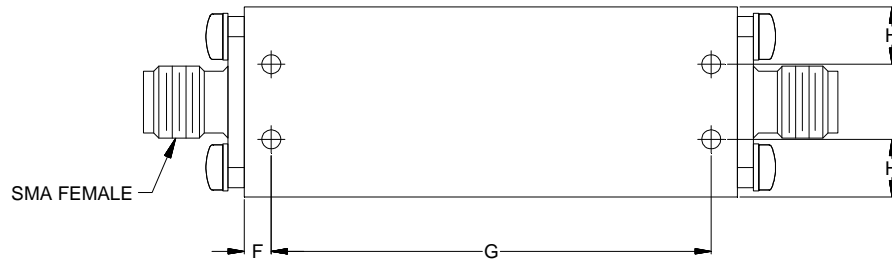


Typical Performance Curves



Outline Dimensions

RD2472



CASE#	A	B	C	D	E	F	G
RD2472	1.83` (46.40)	.70 (17.75)	.53 (13.50)	.35 (8.88)	.26 (6.50)	.10 (2.54)	1.630 (41.40)

CASE#	H	J	K	L	WT. GRAMS
RD2472	.21 (5.38)	.500 (12.70)	.100 (2.54)	.078 (2.00)	36

Dimensions are in inches (mm). Tolerances: 2 Pl. $\pm .100$; 3 Pl. $\pm .015$

Notes:

1. Case material: Brass & Aluminum alloy.
2. Case finish: Powder coated.
3. Refer to the individual model data sheet for the type of connectors available.



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



The Design Engineers Search Engine Provides ACTUAL Data Instantly From MINI-CIRCUITS At: www.minicircuits.com

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
Humidity	90 to 95% RH, 40°C, 96 hours; Units may require bake-out after humidity to restore full performance.	MIL-STD-202, Method 103, Condition B
Thermal Shock	-55° to 100°C, 100 cycles	MIL-STD-202, Method 107, Condition A-3, except +100°C
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	50g, 11ms half-sine, 3 shocks each direction 3 axes (total 18)	MIL-STD-202, Method 213, Condition A