



Mini-Circuits

CAVITY COAXIAL

Bandpass Filter

ZVBP-8100-S+

50Ω

7870 to 8330 MHz SMA Female

KEY FEATURES

- Low Insertion Loss, 0.75 dB Typ.
- Good Return Loss, 19 dB Typ.
- High Rejection, 96 dB Typ.
- Wide Stopband up to 17000 MHz
- Power Handling : 5 Watts

APPLICATIONS

- Telecommunication
- Satellite Communications
- Radar Systems

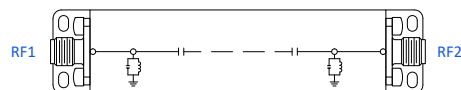
PRODUCT OVERVIEW

Mini-Circuits' ZVBP-8100-S+ is a coaxial cavity filter designed by implementing resonant structures with very high Q and are ideal for narrow-band, high-selectivity applications. Mini-Circuits' coaxial 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. Precise machining allows realization of cavity filters with small form factors for applications where size is critical.



Generic photo used for illustration purposes only

FUNCTIONAL DIAGRAM



ELECTRICAL SPECIFICATIONS AT +25°C

Parameter		F#	Frequency (MHz)	Min.	Typ.	Max.	Units
Passband	Center Frequency	Fc	—	—	8100	—	MHz
	Insertion Loss	F1-F2	7870 - 8330	—	0.75	1.2	dB
	Return Loss	F1-F2	7870 - 8330	14	19	—	dB
Stopband, Lower	Rejection	DC-F3	DC - 6500	85	96	—	dB
		F3-F4	6500 - 7765	20	24	—	
Stopband, Upper	Rejection	F5-F6	8430 - 9350	20	24	—	dB
		F6-F7	9350 - 17000	85	94	—	

ABSOLUTE MAXIMUM RATINGS^{2,3}

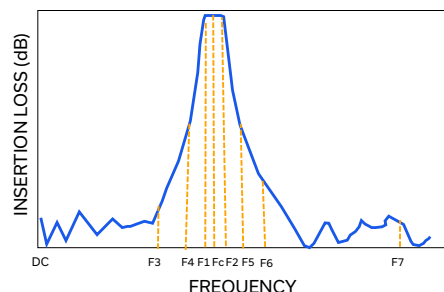
Parameter	Ratings
Operating Temperature	-40°C to +85°C
Storage Temperature	-55°C to +100°C
Input Power ⁴	5 W at +25°C

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

3. Input and output ports are DC short to ground.

4. Power rating applies only to signals within the passband.

TYPICAL FREQUENCY RESPONSE AT +25°C



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REV. OR
ECO-027556
ZVBP-8100-S+
EDU4971
URJ
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Bandpass Filter

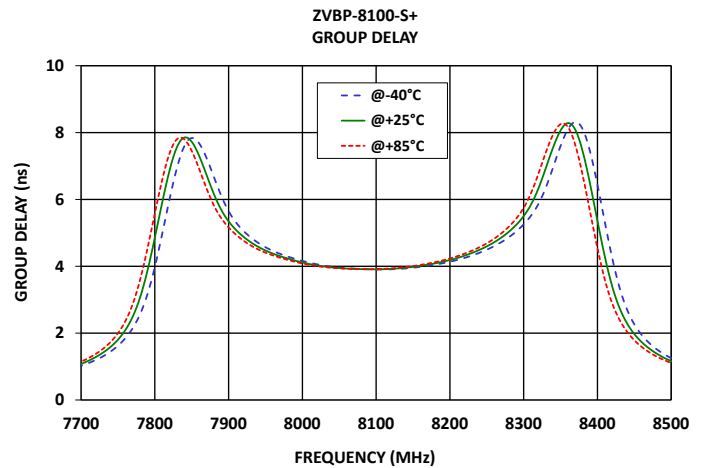
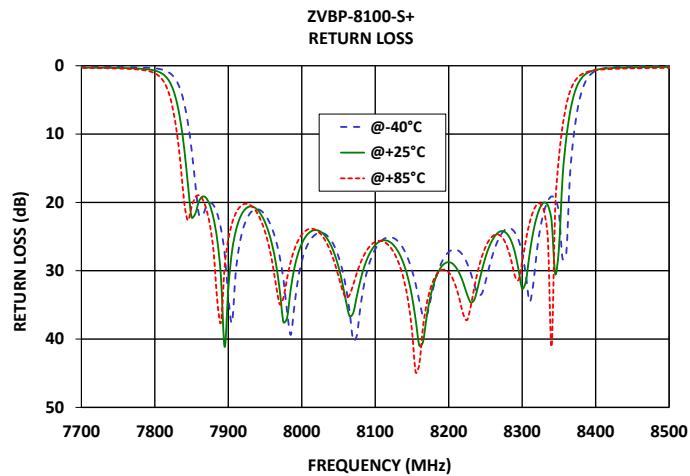
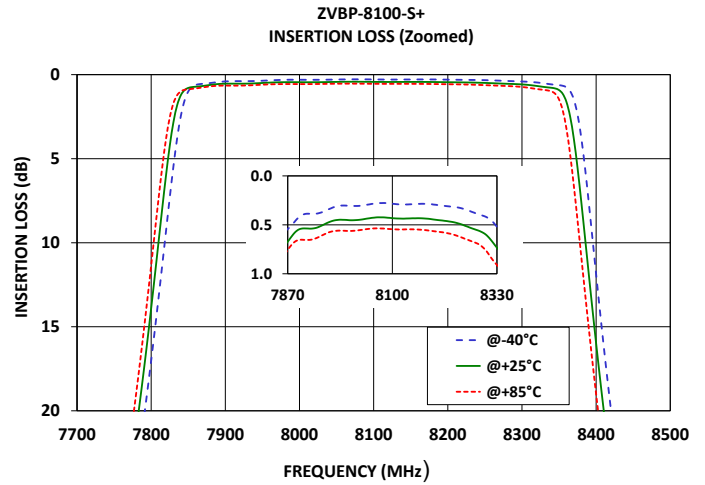
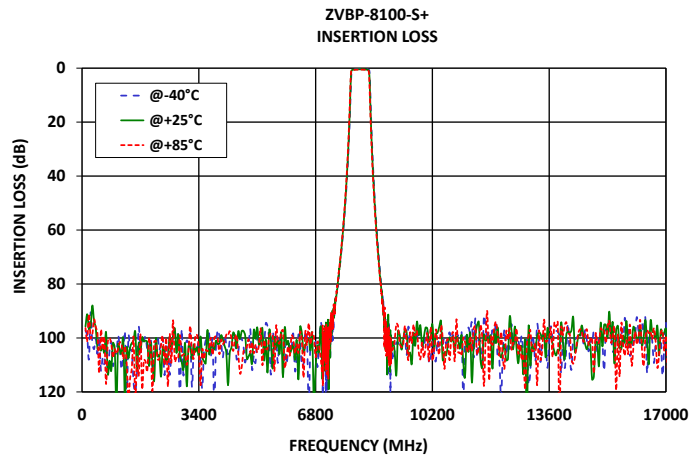
ZVBP-8100-S+

Mini-Circuits

50Ω

7870 to 8330 MHz SMA Female

TYPICAL PERFORMANCE GRAPHS





CAVITY COAXIAL

Bandpass Filter

ZVBP-8100-S+

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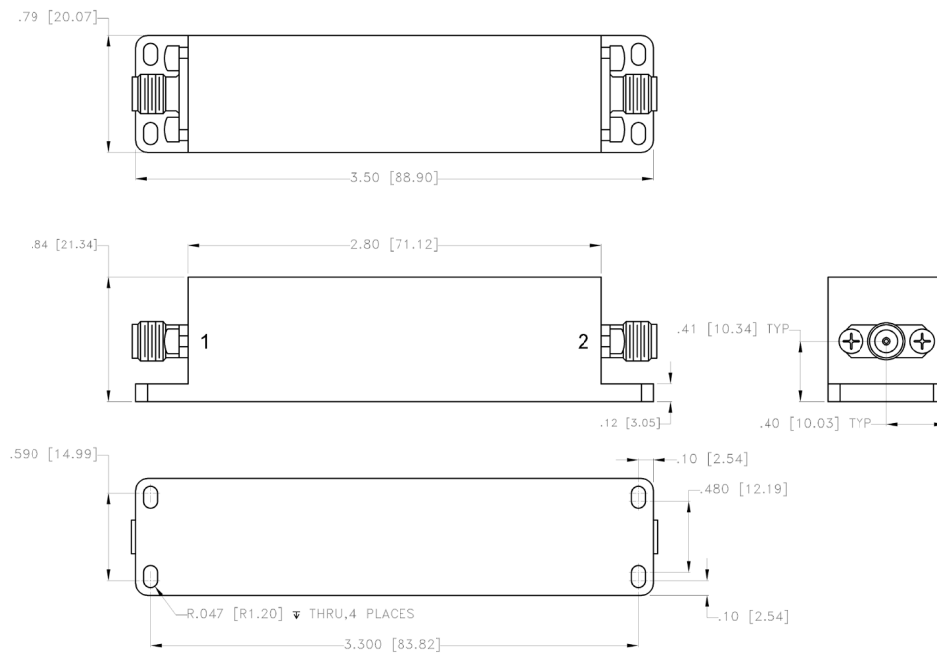
7870 to 8330 MHz SMA Female

CONNECTOR DESCRIPTION

Function	Marking on Unit	Connector
RF1 ¹	1	SMA Female
RF2 ¹	2	SMA Female

1. This filter is bi-directional RF1 and RF2 ports may be interchanged, see S-Parameters for actual performance.

CASE STYLE DRAWING



Unit weight: 118 grams

Dimensions are in inches (mm). Tolerances: 2 Pl. $\pm .10$ (2.54); 3 Pl. $\pm .015$ (0.381)

PRODUCT MARKING*: ZVBP-8100-S+

*Marking may contain other features or characters for internal lot control.





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Bandpass Filter

ZVBP-8100-S+

50Ω

7870 to 8330 MHz

SMA Female

ADDITIONAL INFORMATION IS AVAILABLE ON OUR DASHBOARD

[CLICK HERE](#)

Performance Data & Graphs	Data
	Graphs
	S-Parameter (S2P Files) Data Set (.zip file)
Case Style	BAE3624
RoHS Status	Compliant
Environmental Ratings	ENV46

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-Circuits' 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/terms/viewterm.html



Cavity Band Pass Filter

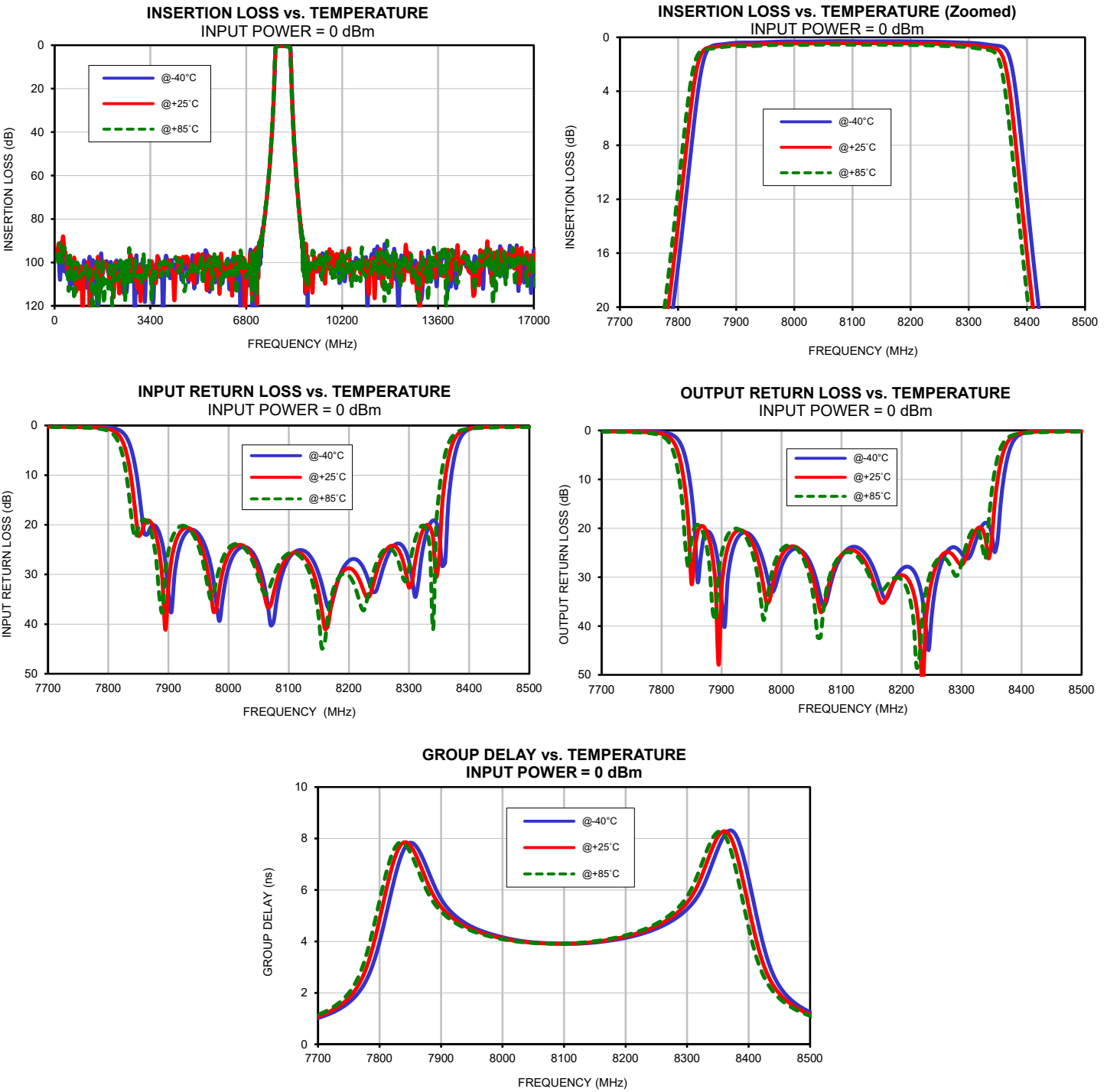
ZVBP-8100-S+

Typical Performance Data

FREQ.	INSERTION LOSS			INPUT RETURN LOSS			OUTPUT RETURN LOSS		
(MHz)	(dB)			(dB)			(dB)		
	@-40°C	@+25°C	@+85°C	@-40°C	@+25°C	@+85°C	@-40°C	@+25°C	@+85°C
100	97.20	95.77	96.30	0.01	0.03	0.03	0.03	0.01	0.01
200	107.86	96.81	91.17	0.03	0.05	0.05	0.01	0.01	0.01
300	102.20	87.94	98.62	0.04	0.06	0.06	0.01	0.03	0.03
500	99.60	103.73	113.13	0.04	0.07	0.08	0.01	0.04	0.04
800	104.84	108.42	99.98	0.04	0.07	0.09	0.01	0.03	0.04
1000	105.75	125.48	105.83	0.04	0.07	0.09	0.02	0.03	0.03
1200	106.25	100.26	107.80	0.03	0.07	0.09	0.03	0.02	0.03
1400	104.43	103.47	114.85	0.02	0.07	0.09	0.04	0.01	0.02
1600	112.91	111.94	106.96	0.01	0.06	0.09	0.05	0.00	0.02
1800	100.92	101.27	108.13	0.00	0.06	0.09	0.06	0.00	0.02
2000	99.87	101.72	104.47	0.01	0.06	0.09	0.07	0.00	0.02
2500	102.27	107.00	118.05	0.03	0.06	0.10	0.09	0.01	0.03
3000	103.54	101.84	106.01	0.05	0.05	0.11	0.10	0.01	0.05
3500	118.79	107.20	104.31	0.05	0.05	0.13	0.11	0.00	0.07
4000	99.31	101.98	106.03	0.05	0.06	0.14	0.11	0.00	0.08
5000	106.58	97.08	105.67	0.04	0.07	0.16	0.09	0.02	0.10
6500	97.43	102.75	97.62	0.00	0.10	0.15	0.06	0.03	0.08
7750	32.22	30.09	28.31	0.17	0.32	0.40	0.13	0.26	0.36
7765	28.16	25.81	23.84	0.20	0.36	0.46	0.15	0.30	0.42
7795	18.77	15.78	13.31	0.33	0.60	0.89	0.29	0.56	0.88
7830	5.45	2.82	1.70	2.32	5.41	9.85	2.36	5.57	10.34
7870	0.54	0.67	0.76	20.60	19.38	20.97	22.01	19.68	21.24
7950	0.36	0.50	0.60	21.81	22.92	24.31	21.62	22.72	24.55
8000	0.30	0.45	0.56	28.61	26.03	24.71	27.76	25.59	24.33
8050	0.29	0.43	0.54	27.94	29.44	30.82	27.67	29.20	31.97
8100	0.28	0.43	0.54	26.83	26.24	25.76	25.69	25.45	25.40
8150	0.29	0.43	0.55	29.94	33.77	38.74	27.34	29.76	30.78
8170	0.29	0.43	0.55	36.54	36.75	34.84	34.08	35.21	32.54
8200	0.30	0.45	0.57	27.26	28.75	30.25	28.40	29.61	30.53
8210	0.30	0.46	0.58	26.92	29.53	32.43	27.87	30.33	32.78
8250	0.33	0.49	0.62	31.64	28.05	26.54	38.10	30.87	28.54
8270	0.36	0.53	0.66	24.91	24.25	24.84	25.98	25.19	26.01
8290	0.39	0.56	0.70	24.39	27.29	30.74	23.98	26.19	29.76
8300	0.41	0.58	0.73	27.42	32.63	28.74	25.17	27.51	27.09
8310	0.43	0.62	0.79	34.52	27.61	23.03	26.25	24.89	22.52
8330	0.52	0.73	0.91	21.23	20.01	21.40	20.45	19.83	21.17
8370	1.48	3.83	6.63	10.37	4.45	2.54	9.86	4.24	2.42
8400	11.88	15.98	19.00	0.76	0.61	0.65	0.68	0.54	0.59
8430	23.56	26.85	29.30	0.16	0.30	0.43	0.10	0.23	0.37
8440	26.93	30.01	32.31	0.11	0.26	0.40	0.05	0.20	0.33
9000	101.55	106.07	105.06	0.01	0.12	0.18	0.06	0.05	0.10
9350	100.48	100.71	102.73	0.01	0.13	0.17	0.03	0.07	0.10
10000	99.29	96.18	103.51	0.05	0.15	0.19	0.02	0.08	0.10
11000	99.01	103.92	105.37	0.04	0.17	0.21	0.01	0.10	0.14
11200	99.19	99.00	104.22	0.04	0.17	0.22	0.02	0.10	0.15
11400	107.32	103.18	96.69	0.03	0.17	0.23	0.02	0.10	0.16
11600	101.76	107.95	95.14	0.03	0.17	0.25	0.03	0.10	0.16
11800	101.00	99.62	90.43	0.02	0.17	0.25	0.04	0.10	0.17
12000	103.16	97.40	96.23	0.01	0.17	0.26	0.05	0.10	0.18
12200	122.25	107.22	97.70	0.01	0.18	0.28	0.06	0.10	0.19
12500	94.82	96.90	104.22	0.00	0.19	0.30	0.08	0.09	0.19
13000	117.07	95.76	99.29	0.00	0.19	0.34	0.13	0.07	0.20
13500	100.84	107.19	101.34	0.00	0.22	0.39	0.17	0.04	0.20
14000	99.46	101.43	98.93	0.02	0.26	0.46	0.24	0.01	0.17
14500	100.48	99.06	96.76	0.01	0.27	0.51	0.29	0.03	0.18
15000	104.98	101.61	101.49	0.04	0.31	0.56	0.31	0.04	0.19
15500	103.63	109.53	95.93	0.06	0.35	0.61	0.32	0.05	0.20
16000	104.58	102.06	110.12	0.07	0.35	0.63	0.32	0.05	0.22
16500	99.04	109.65	98.24	0.09	0.39	0.65	0.32	0.05	0.22
17000	94.24	96.58	99.25	0.13	0.40	0.65	0.30	0.03	0.23

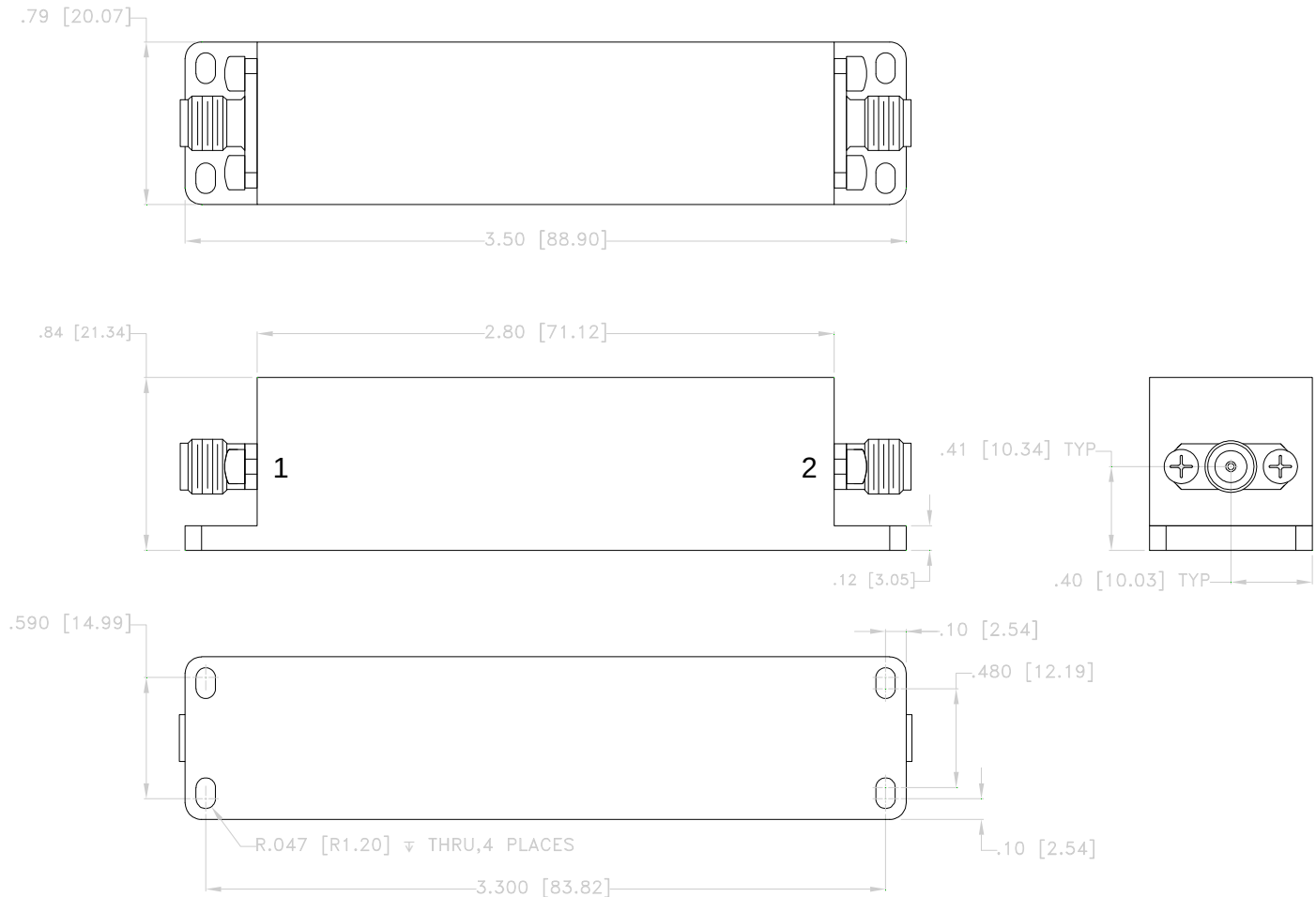
Typical Performance Data

FREQ.	GROUP DELAY		
(MHz)	(nsec)		
	@-40°C	@+25°C	@+85°C
7870	7.24	6.74	6.33
7880	6.68	6.16	5.82
7890	6.11	5.69	5.44
7900	5.65	5.34	5.16
7910	5.31	5.09	4.95
7920	5.06	4.88	4.77
7930	4.86	4.72	4.62
7940	4.70	4.58	4.51
7950	4.57	4.47	4.41
7960	4.46	4.38	4.33
7970	4.37	4.30	4.25
7980	4.29	4.23	4.19
7990	4.22	4.17	4.13
8000	4.16	4.11	4.08
8010	4.11	4.07	4.04
8020	4.06	4.02	4.00
8050	3.96	3.95	3.94
8100	3.91	3.91	3.91
8120	3.91	3.92	3.94
8130	3.92	3.94	3.95
8140	3.94	3.96	3.98
8150	3.96	3.98	4.01
8160	3.98	4.01	4.04
8170	4.01	4.05	4.08
8180	4.05	4.09	4.12
8190	4.09	4.13	4.18
8200	4.14	4.19	4.23
8210	4.19	4.25	4.30
8220	4.25	4.32	4.38
8230	4.32	4.40	4.47
8240	4.40	4.49	4.57
8250	4.50	4.60	4.69
8260	4.60	4.72	4.82
8270	4.73	4.86	4.99
8280	4.87	5.03	5.19
8290	5.04	5.24	5.43
8300	5.25	5.50	5.75
8310	5.51	5.85	6.19
8315	5.67	6.07	6.47
8320	5.86	6.33	6.77
8330	6.35	6.93	7.40



Outline Dimensions

BAE3624



Dimensions are in inches (mm). Tolerances: 2 Pl. $\pm .10(2.54)$; 3 Pl. $\pm .015(0.381)$

Notes:

1. Case material: Brass & Aluminum alloy.
2. Case Finish: Powder coated.
3. Unit Weight: 118 grams.
4. 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