



Mini-Circuits

CAVITY COAXIAL

Bandpass Filter

ZVBP-7736-S+

50Ω

7685 to 7787 MHz SMA Female

KEY FEATURES

- Low Insertion Loss, 0.9 dB Typ.
- Good Return Loss, 18 dB Typ.
- High Rejection, 93 dB Typ.
- Stopband up to 16 GHz
- Power Handling 10 Watts

APPLICATIONS

- Test and Measurements

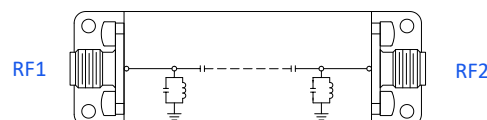


Generic photo used for illustration purposes only

PRODUCT OVERVIEW

Mini-Circuits' ZVBP-7736-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.

FUNCTIONAL DIAGRAM



ELECTRICAL SPECIFICATIONS AT +25°C

Parameter		F#	Frequency (MHz)	Min.	Typ.	Max.	Units
Passband	Center Frequency	Fc	—	—	7736	—	MHz
	Insertion Loss	F1-F2	7685 - 7787	—	0.9	1.2	dB
	Return Loss	F1-F2	7685 - 7787	14	18	—	dB
Stopband, Lower	Rejection	DC-F3	DC - 6715	80	88	—	dB
		F3-F4	6715 - 7475	40	45	—	
Stopband, Upper	Rejection	F5-F6	8000 - 8800	40	47	—	dB
		F6-F7	8800 - 16000	80	93	—	

ABSOLUTE MAXIMUM RATINGS^{2,3}

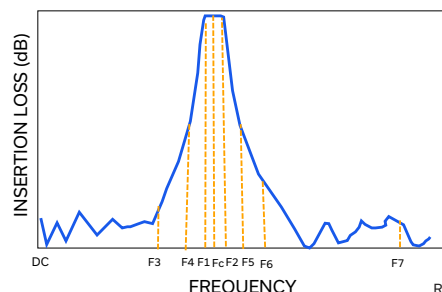
Parameter	Ratings
Operating Temperature	-40°C to +85°C
Storage Temperature	-55°C to +100°C
Input Power ⁴	10 W max. at +25°C

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



REV. OR
ECO-027556
ZVBP-7736-S+
EDU4972
URJ
251105





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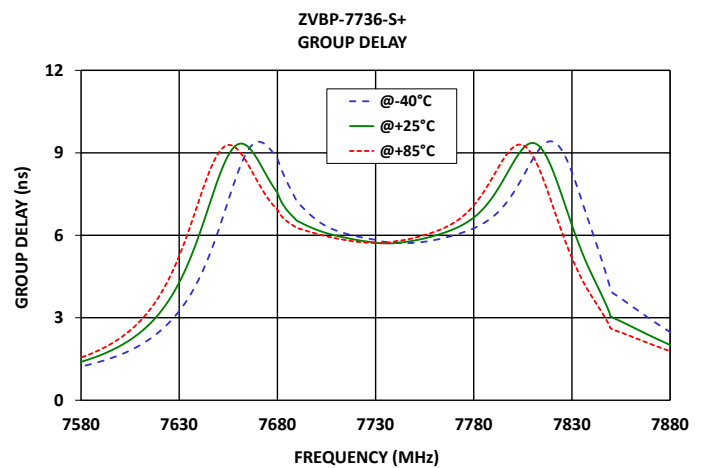
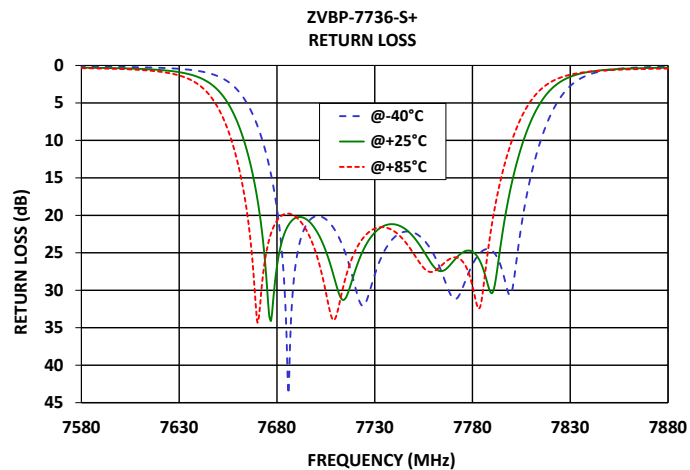
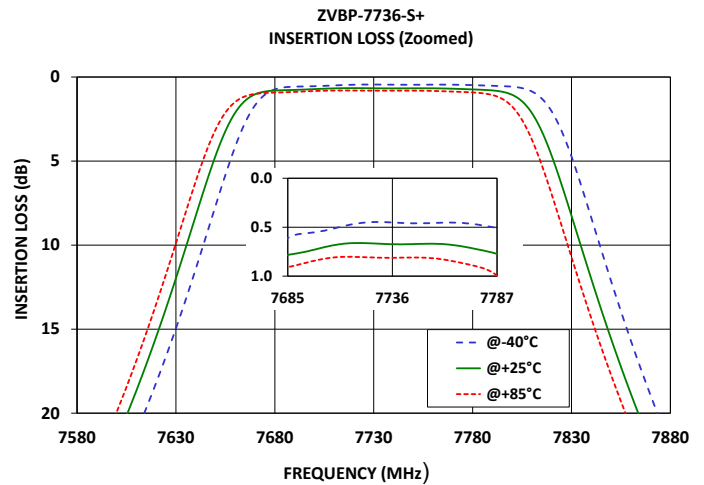
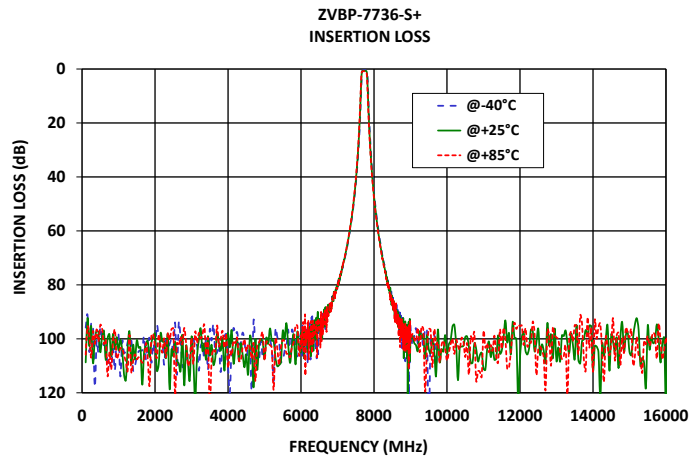
Bandpass Filter

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7685 to 7787 MHz SMA Female

TYPICAL PERFORMANCE GRAPHS





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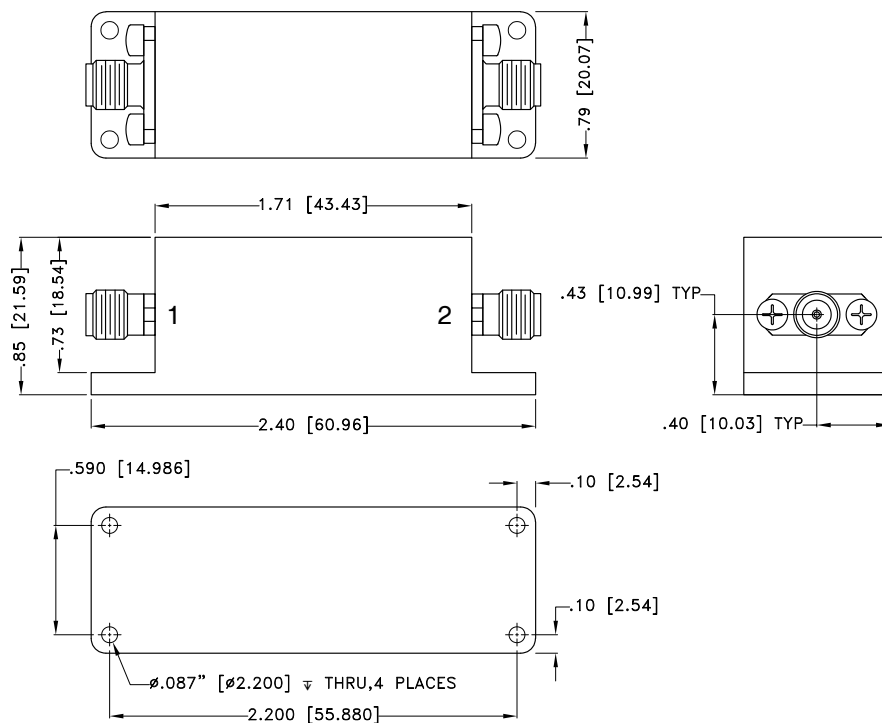
7685 to 7787 MHz SMA Female

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: 90 grams

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

PRODUCT MARKING*: ZVBP-7736-S+

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





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50Ω

7685 to 7787 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	BAD3623
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

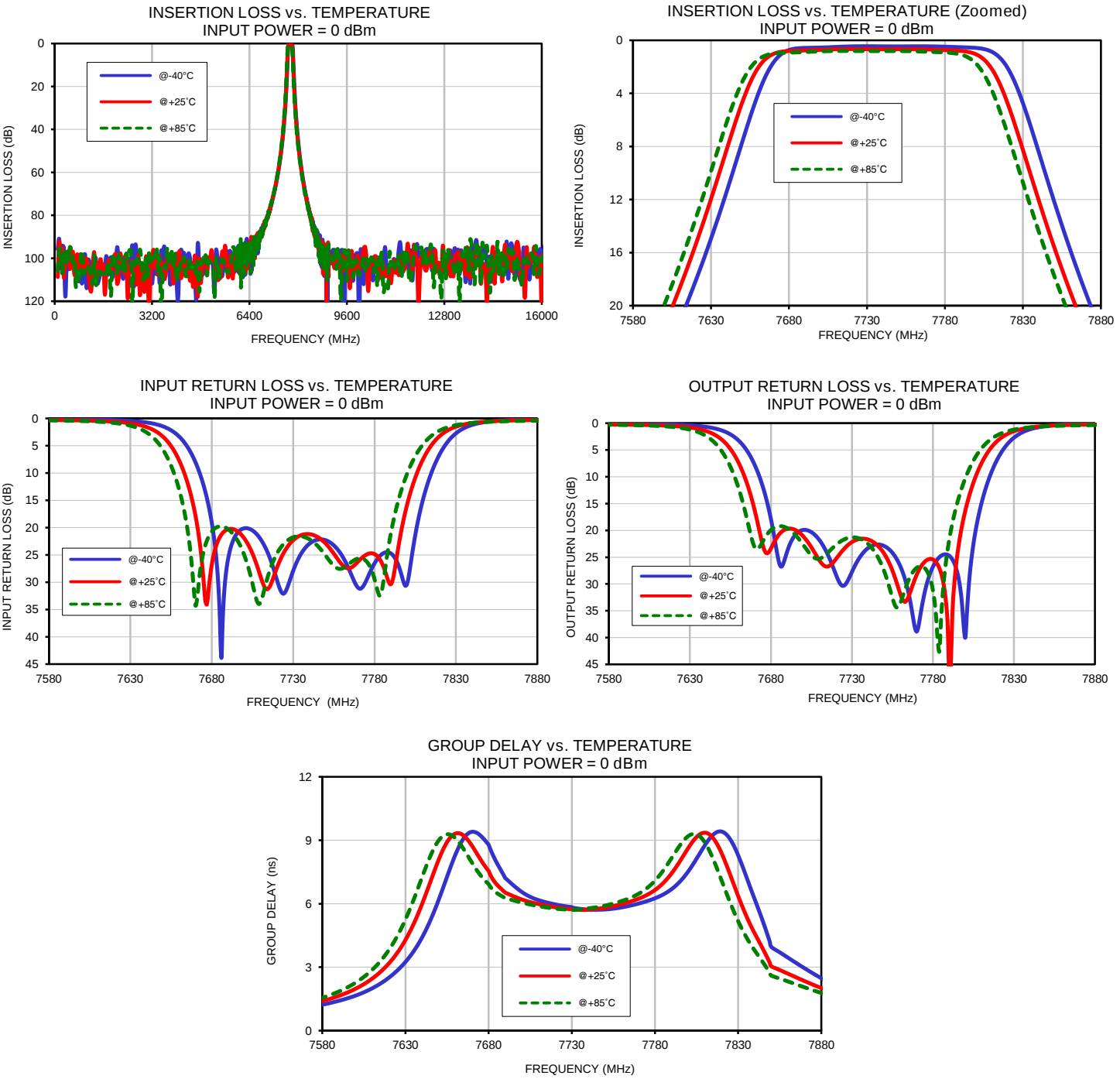
ZVBP-7736-S+

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	95.83	108.73	105.88	0.02	0.03	0.04	0.01	0.01	0.01
200	104.92	102.74	98.78	0.04	0.05	0.06	0.00	0.03	0.03
300	94.93	109.08	97.17	0.05	0.06	0.07	0.02	0.05	0.05
500	95.64	105.00	94.84	0.06	0.08	0.09	0.03	0.06	0.07
1000	98.25	104.24	105.65	0.05	0.09	0.11	0.02	0.07	0.08
1200	104.52	115.32	108.49	0.04	0.08	0.11	0.01	0.06	0.08
1500	106.63	100.52	107.59	0.03	0.08	0.11	0.02	0.04	0.06
1600	104.30	103.11	107.66	0.02	0.08	0.11	0.03	0.03	0.06
1800	102.28	100.83	107.27	0.02	0.07	0.11	0.04	0.03	0.05
2000	105.12	98.04	103.22	0.00	0.07	0.11	0.05	0.02	0.05
2100	99.50	109.54	98.46	0.00	0.07	0.12	0.06	0.02	0.05
2200	100.66	101.05	105.05	0.01	0.07	0.12	0.06	0.02	0.05
2600	113.34	108.24	101.55	0.03	0.06	0.12	0.08	0.01	0.06
2800	110.22	117.27	95.95	0.04	0.06	0.13	0.08	0.01	0.07
3000	104.67	99.21	99.67	0.04	0.06	0.13	0.08	0.02	0.09
3100	103.32	122.94	97.38	0.04	0.06	0.14	0.08	0.02	0.09
3300	101.60	104.49	98.58	0.05	0.06	0.15	0.08	0.02	0.10
3500	96.55	106.16	126.18	0.05	0.06	0.16	0.09	0.02	0.10
3700	105.12	98.08	95.03	0.05	0.07	0.16	0.10	0.02	0.10
3900	99.04	111.81	103.39	0.05	0.07	0.17	0.10	0.02	0.10
4000	109.92	97.83	110.60	0.05	0.07	0.17	0.11	0.01	0.10
4500	108.31	105.72	104.71	0.03	0.09	0.20	0.09	0.03	0.13
5000	106.77	107.55	108.02	0.03	0.10	0.20	0.07	0.05	0.15
5500	108.39	97.02	100.40	0.02	0.10	0.20	0.06	0.06	0.15
6000	97.47	104.98	98.67	0.01	0.12	0.22	0.05	0.07	0.16
6500	93.82	96.84	96.21	0.00	0.12	0.20	0.05	0.07	0.14
6715	89.60	90.24	90.91	0.01	0.13	0.20	0.05	0.07	0.14
6900	83.67	82.55	82.92	0.02	0.13	0.20	0.04	0.07	0.13
7000	80.30	80.79	81.01	0.03	0.13	0.20	0.04	0.08	0.13
7475	46.20	45.18	44.41	0.08	0.19	0.24	0.03	0.14	0.17
7565	31.82	30.10	28.86	0.13	0.26	0.32	0.08	0.21	0.25
7605	22.52	20.15	18.44	0.22	0.41	0.53	0.17	0.34	0.44
7655	5.83	3.22	2.12	2.17	5.06	8.65	2.08	4.81	8.13
7685	0.61	0.78	0.91	36.85	21.72	19.78	25.96	20.77	19.21
7700	0.55	0.72	0.83	20.13	21.99	25.07	19.91	21.12	22.71
7710	0.50	0.67	0.80	22.13	28.98	33.67	21.84	25.63	25.28
7720	0.46	0.66	0.80	29.53	27.39	24.76	28.14	25.40	22.75
7736	0.45	0.67	0.81	24.28	21.28	21.66	24.54	21.55	21.69
7750	0.46	0.67	0.81	22.32	22.92	25.15	22.92	24.39	27.69
7760	0.45	0.67	0.83	25.13	26.78	27.51	26.78	31.98	33.48
7765	0.45	0.68	0.85	28.10	27.40	26.50	31.75	32.31	29.25
7770	0.46	0.70	0.87	31.04	26.19	25.65	38.88	28.26	26.97
7777	0.47	0.72	0.90	28.32	24.72	27.04	29.17	25.42	27.99
7780	0.48	0.74	0.92	26.55	24.86	29.44	26.80	25.43	31.20
7787	0.51	0.77	1.00	24.52	28.46	26.57	24.48	30.79	28.61
7816	1.41	3.50	5.58	9.15	4.50	2.95	9.22	4.53	2.94
7865	17.35	20.38	22.26	0.27	0.37	0.49	0.20	0.32	0.42
7905	28.41	30.65	32.06	0.09	0.23	0.35	0.03	0.18	0.28
8000	45.64	47.08	47.99	0.04	0.17	0.26	0.01	0.12	0.20
8800	91.35	92.27	103.75	0.06	0.16	0.22	0.01	0.12	0.15
9000	95.76	100.45	101.03	0.05	0.17	0.22	0.01	0.12	0.15
10000	129.02	105.40	108.04	0.06	0.17	0.22	0.01	0.10	0.14
11000	110.01	110.98	97.19	0.01	0.16	0.24	0.04	0.10	0.17
12000	97.50	106.99	95.33	0.03	0.17	0.29	0.08	0.10	0.22
13000	96.46	108.28	99.46	0.03	0.20	0.39	0.13	0.09	0.28
14000	103.09	111.83	112.20	0.14	0.13	0.39	0.22	0.04	0.28
14500	97.02	98.44	101.68	0.19	0.12	0.39	0.23	0.05	0.32
15000	92.97	104.85	99.50	0.10	0.20	0.50	0.16	0.13	0.41
15500	104.51	95.13	98.97	0.06	0.25	0.57	0.12	0.17	0.45
16000	106.59	125.82	99.54	0.07	0.25	0.55	0.11	0.18	0.46

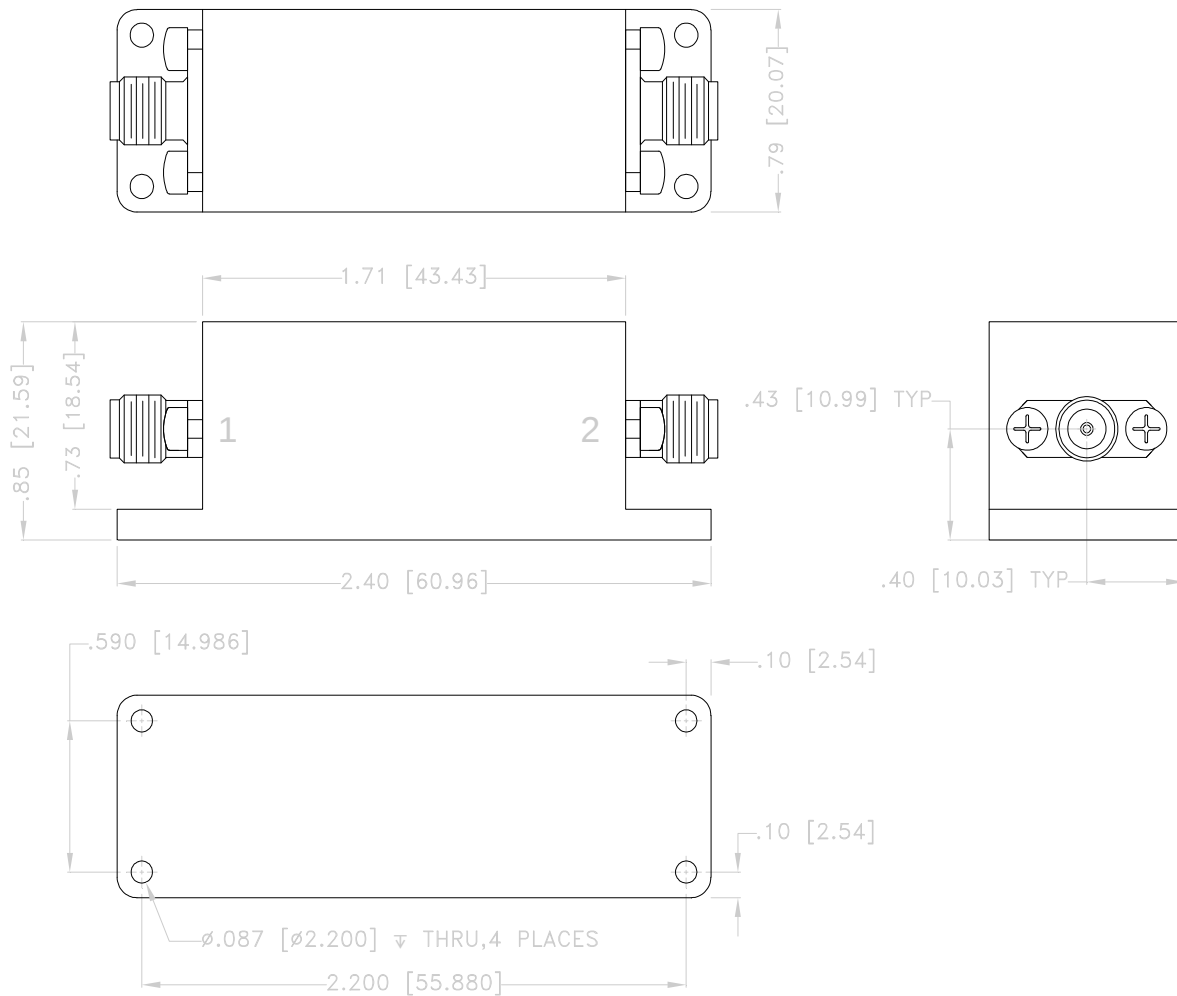
Typical Performance Data

FREQ.	GROUP DELAY		
(MHz)	(nsec)		
	@-40°C	@+25°C	@+85°C
7685	7.92	6.90	6.50
7686	7.78	6.82	6.45
7687	7.64	6.75	6.40
7688	7.50	6.67	6.36
7689	7.36	6.60	6.31
7690	7.22	6.53	6.27
7691	7.15	6.49	6.24
7692	7.07	6.46	6.22
7693	7.00	6.42	6.20
7694	6.93	6.39	6.18
7695	6.86	6.35	6.16
7696	6.80	6.32	6.14
7697	6.73	6.29	6.11
7698	6.67	6.26	6.09
7699	6.61	6.23	6.07
7700	6.55	6.20	6.05
7701	6.50	6.17	6.04
7702	6.45	6.15	6.02
7703	6.41	6.12	6.00
7704	6.37	6.10	5.98
7705	6.33	6.08	5.96
7710	6.17	5.99	5.89
7715	6.06	5.91	5.82
7720	5.97	5.84	5.77
7725	5.89	5.78	5.73
7730	5.84	5.74	5.72
7736	5.75	5.71	5.73
7740	5.72	5.73	5.79
7745	5.72	5.76	5.84
7750	5.73	5.81	5.91
7755	5.77	5.89	6.01
7760	5.83	5.98	6.13
7765	5.91	6.10	6.27
7766	5.92	6.12	6.31
7768	5.96	6.17	6.38
7770	6.00	6.23	6.46
7774	6.09	6.37	6.67
7780	6.26	6.65	7.09
7782	6.32	6.77	7.27
7784	6.40	6.91	7.47
7787	6.53	7.15	7.80



Outline Dimensions

BAD3623



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: 90 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