



CAVITY COAXIAL

Bandpass Filter

ZVBP500W-1R3G+

Mini-Circuits

50Ω 1200 to 1400 MHz N-Male/ Female

KEY FEATURES

- Low Insertion Loss, 0.13 dB Typ.
- Good Return Loss, 20 dB Typ.
- High Rejection, 58 dB Typ.
- Power Handling 200 Watts

APPLICATIONS

- Radio Location
- Mobile

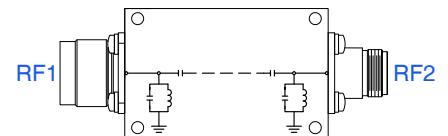
PRODUCT OVERVIEW

Mini-Circuits' ZVBP500W-1R3G+ 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 SPECIFICATIONS¹ AT +25°C

Parameter		F#	Frequency (MHz)	Min.	Typ.	Max.	Units
Passband	Center Frequency	Fc	—	—	1300	—	MHz
	Insertion Loss	F1-F2	1200 - 1400	—	0.13	0.40	dB
	Return Loss	F1-F2	1200 - 1400	14	20	—	dB
Stop Band, Lower	Rejection	DC-F3	DC - 550	20	26	—	dB
Stop Band, Upper	Rejection	F4-F5	2000 - 3000	50	58	—	dB
		F5-F6	3000 - 4000	45	53	—	

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

ABSOLUTE MAXIMUM RATINGS^{2,3}

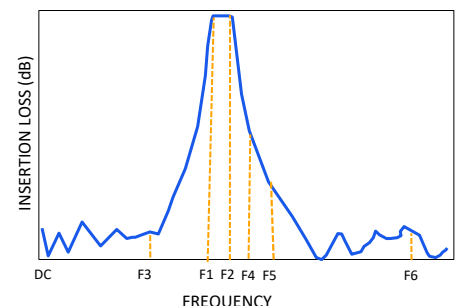
Parameter	Ratings
Operating Temperature	-40°C to +85°C
Storage Temperature	-55°C to +100°C
Input Power ⁴	200 W at +25°C

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, Estimated theoretical power handling 500 W Typ.

TYPICAL FREQUENCY RESPONSE AT +25°C



REV. OR
ECO-027015
ZVBP500W-1R3G+
EDU4717
URJ
250918

Mini-Circuits

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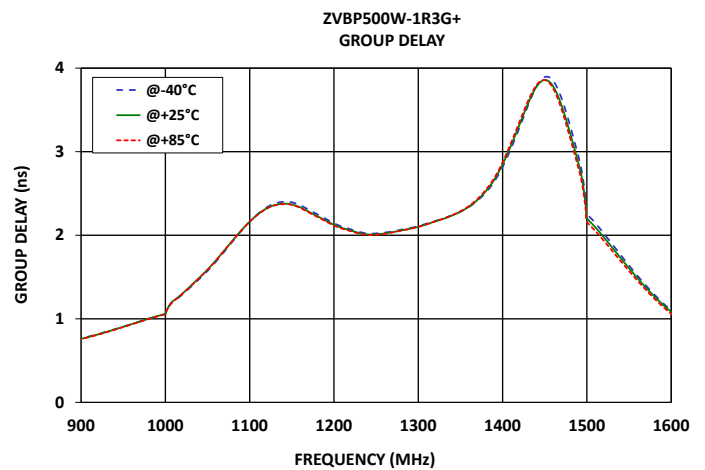
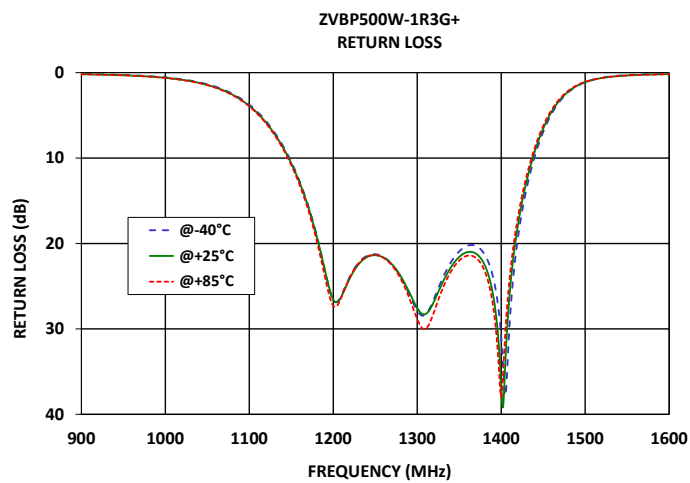
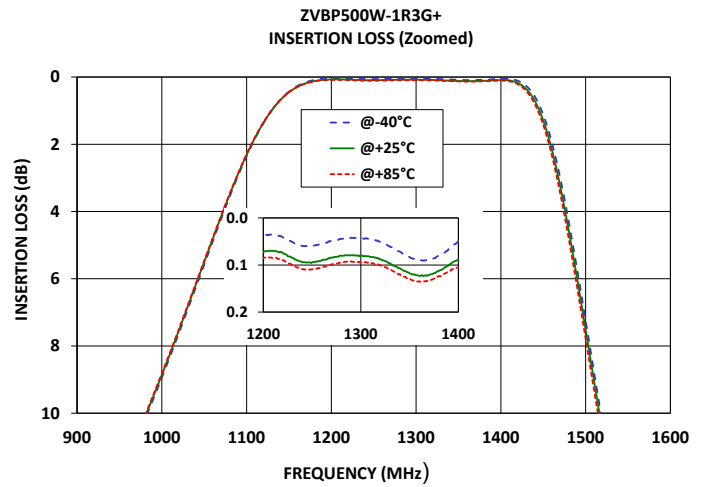
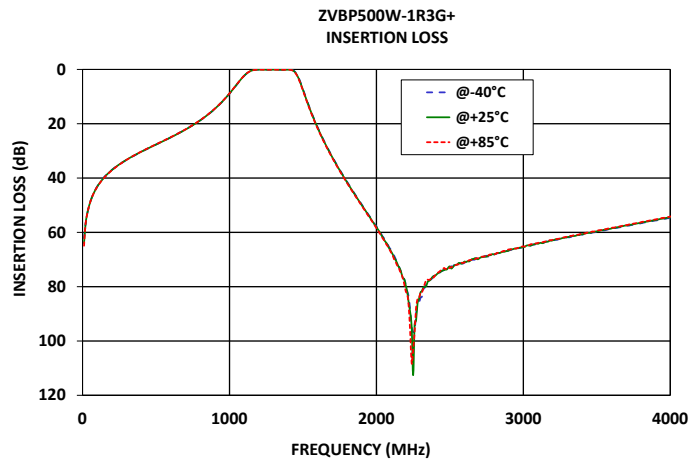
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TYPICAL PERFORMANCE GRAPHS





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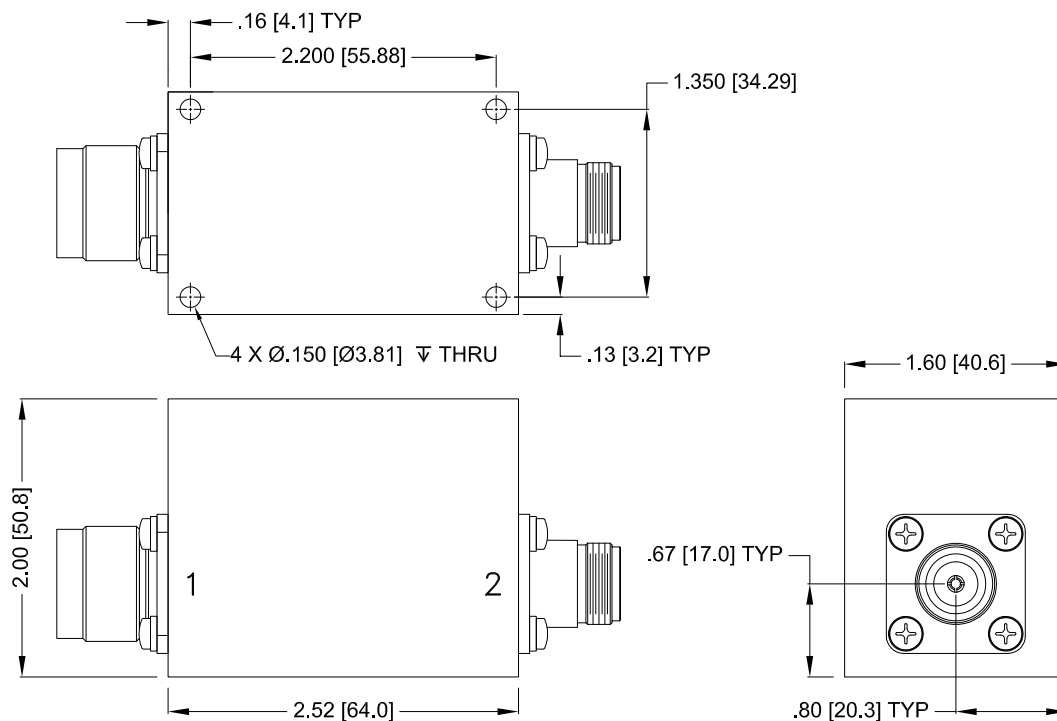
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CONNECTOR DESCRIPTION

Function	Marking on Unit	Connector
RF1 ¹	1	N- Male
RF2 ¹	2	N- Female

CASE STYLE DRAWING



Unit Weight: 270 Grams.

Dimensions are in inches (mm). Tolerances: 2 Pl. $\pm .100$; 3 Pl. $\pm .015$ **PRODUCT MARKING*:** ZVBP500W-1R3G+

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





Mini-Circuits

CAVITY COAXIAL

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ZVBP500W-1R3G+

50Ω 1200 to 1400 MHz N-Male/ 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	AAC3604
RoHS Status	Compliant
Environmental Ratings	ENV77T1

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



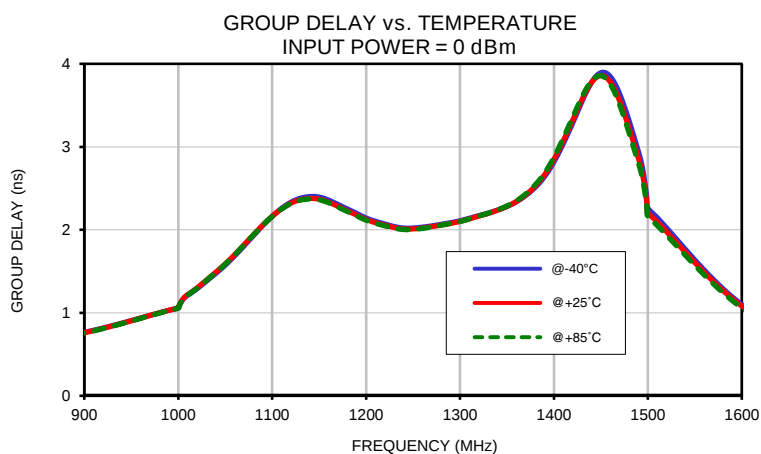
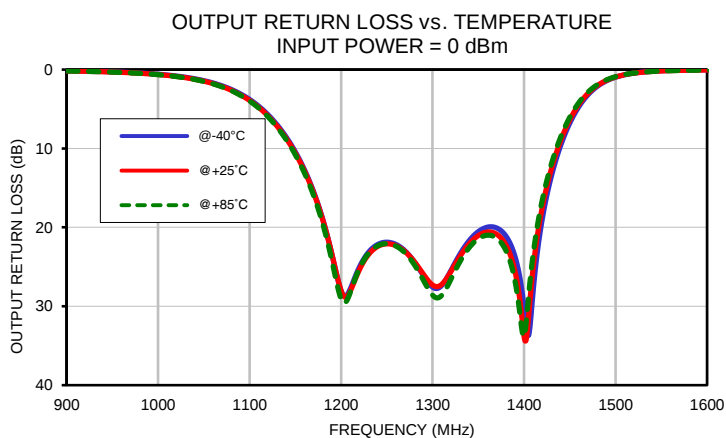
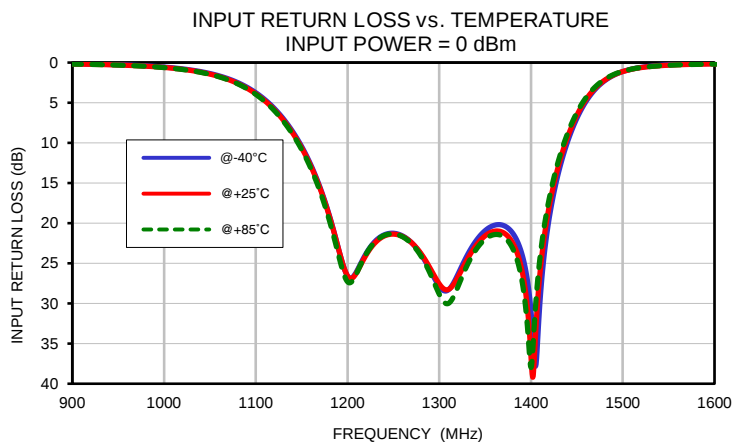
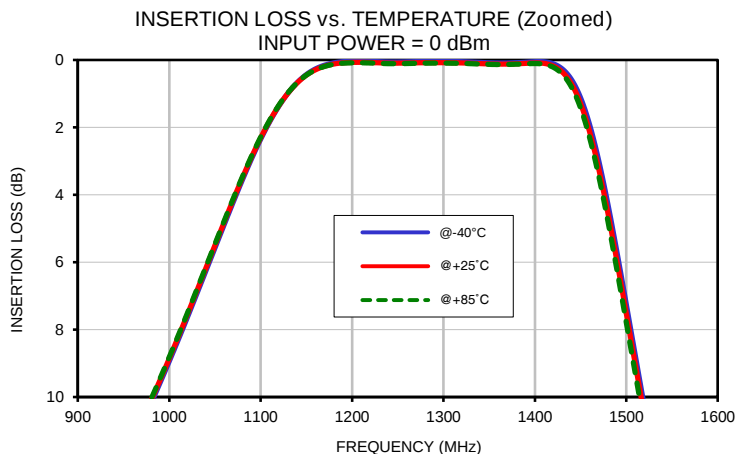
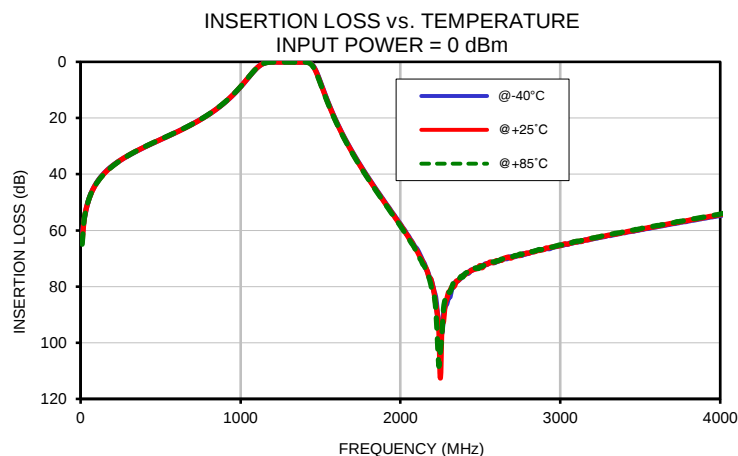
Typical Performance Data

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
10	62.10	63.99	64.94	0.01	0.01	0.01	0.00	0.01	0.00
50	49.17	49.23	49.22	0.02	0.02	0.02	0.00	0.01	0.01
100	43.07	43.18	43.21	0.03	0.03	0.04	0.00	0.01	0.01
200	36.96	37.03	37.15	0.05	0.06	0.06	0.01	0.01	0.02
300	33.31	33.25	33.27	0.05	0.07	0.08	0.01	0.02	0.02
400	30.34	30.30	30.24	0.06	0.08	0.09	0.01	0.02	0.02
500	27.67	27.66	27.57	0.07	0.09	0.10	0.01	0.02	0.03
550	26.36	26.36	26.27	0.07	0.09	0.10	0.01	0.03	0.03
600	25.02	25.04	24.95	0.07	0.09	0.10	0.02	0.03	0.03
700	22.12	22.16	22.08	0.06	0.09	0.10	0.03	0.04	0.05
760	20.19	20.21	20.13	0.07	0.10	0.10	0.04	0.06	0.06
800	18.78	18.77	18.69	0.08	0.11	0.11	0.05	0.07	0.08
900	14.57	14.50	14.44	0.15	0.18	0.19	0.15	0.17	0.18
1000	8.94	8.86	8.82	0.56	0.61	0.62	0.59	0.63	0.64
1089	3.00	2.94	2.92	2.98	3.11	3.16	3.02	3.14	3.19
1200	0.04	0.07	0.09	26.57	26.57	27.29	28.02	28.02	29.07
1250	0.06	0.09	0.11	21.25	21.37	21.34	21.88	22.09	22.06
1300	0.04	0.08	0.09	27.87	27.57	28.86	27.57	27.30	28.59
1350	0.08	0.12	0.13	20.93	21.58	22.00	20.53	21.03	21.44
1400	0.05	0.09	0.10	30.99	36.76	37.98	30.17	33.81	33.81
1470	3.00	3.25	3.46	3.33	3.18	3.02	3.17	3.00	2.84
1500	7.25	7.52	7.79	1.11	1.12	1.08	0.96	0.94	0.90
1590	20.07	20.28	20.54	0.13	0.19	0.21	0.03	0.06	0.07
1600	21.30	21.51	21.77	0.11	0.17	0.19	0.02	0.05	0.06
1680	30.17	30.38	30.63	0.04	0.09	0.11	0.01	0.02	0.03
1700	32.16	32.37	32.62	0.02	0.08	0.10	0.02	0.02	0.03
1750	36.89	37.12	37.37	0.00	0.06	0.08	0.02	0.01	0.03
1800	41.35	41.57	41.82	0.02	0.03	0.06	0.02	0.01	0.03
1850	45.61	45.83	46.10	0.04	0.02	0.04	0.02	0.01	0.03
1900	49.72	49.97	50.24	0.06	0.00	0.02	0.02	0.02	0.03
1950	53.82	53.99	54.32	0.08	0.02	0.01	0.02	0.02	0.03
2000	57.80	58.05	58.46	0.09	0.03	0.01	0.02	0.02	0.03
2050	62.04	62.43	62.76	0.10	0.04	0.02	0.01	0.02	0.04
2100	66.39	67.03	67.45	0.11	0.06	0.03	0.01	0.02	0.04
2150	71.91	72.55	72.67	0.13	0.07	0.04	0.01	0.03	0.04
2200	79.24	79.60	81.78	0.14	0.08	0.06	0.01	0.03	0.05
2250	96.78	112.58	103.20	0.14	0.09	0.07	0.00	0.03	0.05
2300	84.06	82.14	82.05	0.15	0.09	0.08	0.00	0.04	0.05
2350	78.35	78.05	77.42	0.15	0.10	0.08	0.00	0.04	0.05
2400	75.76	75.98	75.65	0.16	0.10	0.09	0.01	0.04	0.06
2450	74.19	74.00	73.73	0.16	0.11	0.09	0.01	0.05	0.06
2500	73.17	72.54	72.89	0.16	0.11	0.10	0.01	0.05	0.07
2550	71.63	71.92	71.79	0.16	0.11	0.10	0.02	0.05	0.07
2600	71.15	70.74	71.02	0.16	0.11	0.10	0.02	0.06	0.08
2700	69.33	69.59	69.41	0.15	0.11	0.10	0.03	0.07	0.08
2800	68.21	68.11	67.86	0.14	0.09	0.09	0.03	0.07	0.09
2900	66.64	66.74	66.28	0.12	0.08	0.08	0.04	0.08	0.10
3000	65.34	65.45	65.17	0.09	0.06	0.05	0.04	0.09	0.11
3100	64.08	64.22	63.86	0.06	0.03	0.03	0.04	0.10	0.12
3200	63.02	62.93	62.72	0.03	0.00	0.00	0.05	0.10	0.12
3300	61.77	61.76	61.62	0.01	0.04	0.03	0.05	0.10	0.13
3400	60.85	60.71	60.55	0.05	0.07	0.06	0.04	0.11	0.13
3500	59.73	59.62	59.47	0.08	0.11	0.10	0.04	0.11	0.14
3600	58.75	58.56	58.32	0.12	0.14	0.13	0.03	0.11	0.14
3650	58.18	58.04	57.88	0.13	0.16	0.15	0.03	0.10	0.14
3700	57.64	57.50	57.32	0.15	0.18	0.17	0.02	0.10	0.14
3750	57.08	56.95	56.77	0.17	0.19	0.19	0.02	0.10	0.14
3800	56.63	56.47	56.27	0.18	0.21	0.20	0.01	0.10	0.14
3900	55.64	55.43	55.22	0.21	0.24	0.23	0.01	0.09	0.14
4000	54.68	54.42	54.21	0.23	0.27	0.27	0.02	0.08	0.13

Typical Performance Data

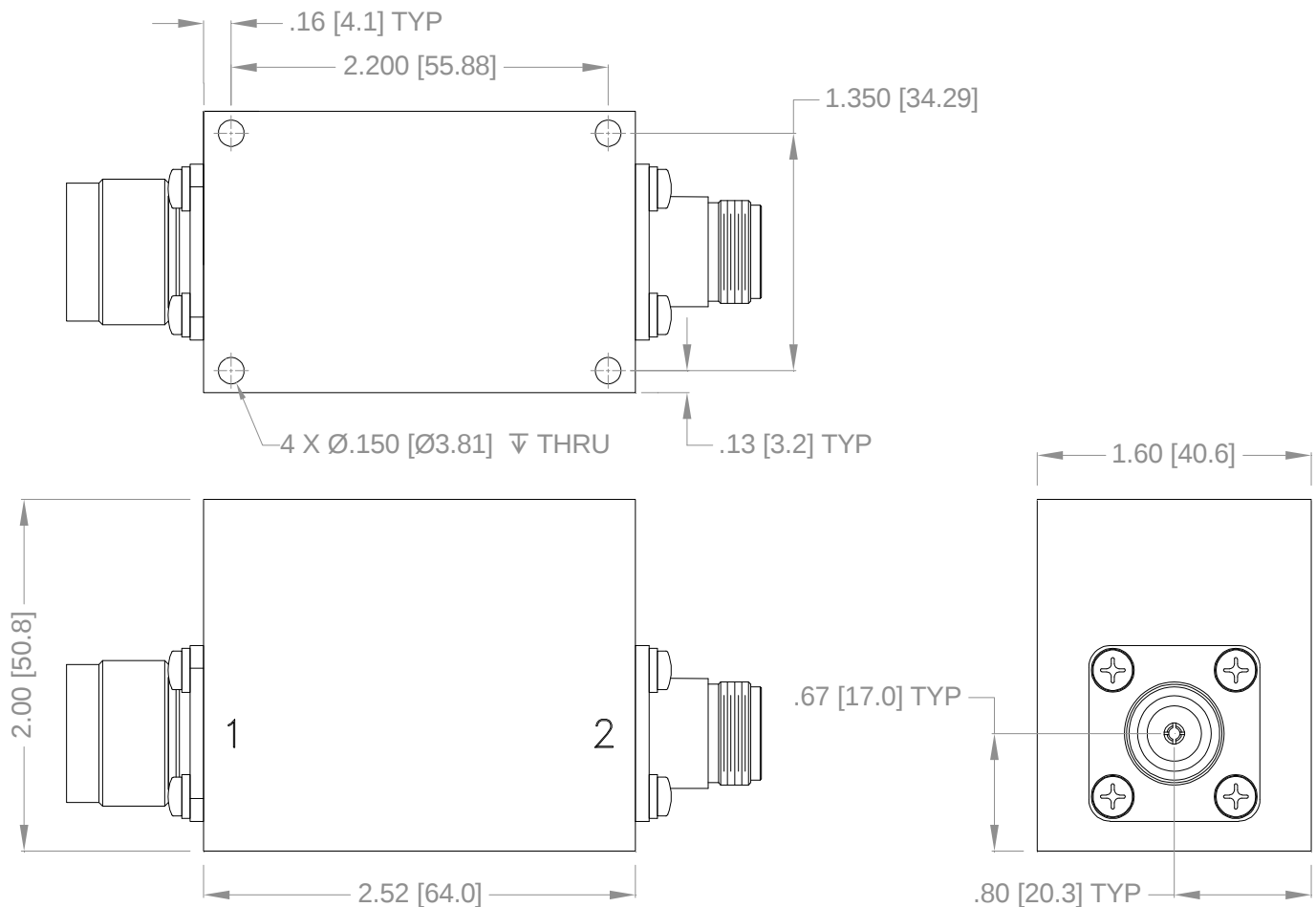
FREQ.	GROUP DELAY		
(MHz)	(nsec)		
	@-40°C	@+25°C	@+85°C
1200	2.14	2.13	2.12
1205	2.12	2.10	2.09
1210	2.10	2.09	2.08
1215	2.09	2.07	2.06
1220	2.07	2.06	2.05
1225	2.05	2.04	2.03
1230	2.04	2.03	2.02
1235	2.03	2.02	2.01
1240	2.02	2.01	2.00
1245	2.02	2.01	2.00
1250	2.02	2.01	2.01
1255	2.03	2.02	2.01
1260	2.03	2.02	2.02
1265	2.04	2.03	2.03
1270	2.05	2.04	2.03
1275	2.06	2.05	2.05
1280	2.07	2.06	2.06
1285	2.08	2.07	2.07
1290	2.09	2.08	2.08
1295	2.10	2.09	2.09
1300	2.11	2.10	2.10
1305	2.12	2.12	2.12
1310	2.14	2.13	2.13
1315	2.16	2.15	2.15
1320	2.17	2.17	2.17
1325	2.19	2.18	2.18
1330	2.20	2.20	2.20
1335	2.22	2.22	2.22
1340	2.24	2.24	2.24
1345	2.26	2.26	2.26
1350	2.28	2.28	2.29
1355	2.31	2.31	2.32
1360	2.34	2.34	2.35
1365	2.37	2.38	2.39
1370	2.41	2.42	2.43
1375	2.46	2.47	2.48
1380	2.51	2.53	2.54
1385	2.57	2.59	2.61
1390	2.64	2.66	2.68
1395	2.72	2.75	2.77
1400	2.82	2.85	2.87

Typical Performance Curves



Outline Dimensions

AAC3604



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

Notes:

1. Case Material: Aluminium.
2. Case Finish: Silver plating.
3. Unit Weight: 270 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	-30° to 70°C Ambient Environment	Individual Model Data Sheet
Storage Temperature	-30° to 70° C Ambient Environment	Individual Model Data Sheet
Thermal Shock	-55° to 100°C, 100 cycles	MIL-STD-202, Method 107, Condition A-3, except +100°C