CAVITY COAXIAL

Bandpass Filter

ZVBP-1537-S+

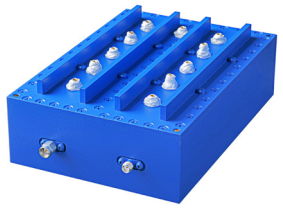
50Ω 1533.4 to 1541.1 MHz SMA Male/Female

KEY FEATURES

- Low Insertion Loss, 1dB Typ.
- Good Return Loss, 20dB Typ.
- High Rejection, 80dB Typ.
- Narrow Bandwidth,0.5%.
- Power Handling: 30W.
- Stopband Up to 3750MHz.

APPLICATIONS

- Satellite Communications

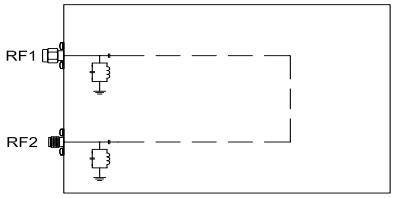


Generic photo used for illustration purposes only

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 3% 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.

FUNCTIONAL DIAGRAM



ELECTRICAL SPECIFICATIONS[1] AT +25°C

Parameter		F#	Frequency (MHz)	Min.	Typ.	Max.	Units
Passband	Center Frequency	Fc	—	—	1537.25	—	MHz
	1dB Bandwidth	—	—	7.7	—	—	MHz
	Insertion Loss	Fc	1537.25	—	1.0	1.6	dB
	Return Loss	F1-F2	1533.4 - 1541.1	14	20	—	dB
Stop Band, Lower	Rejection	DC-F3	DC - 1530.5	34	39	—	dB
Stop Band, Upper	Rejection	F4-F5	1544 - 3750	34	38	—	dB

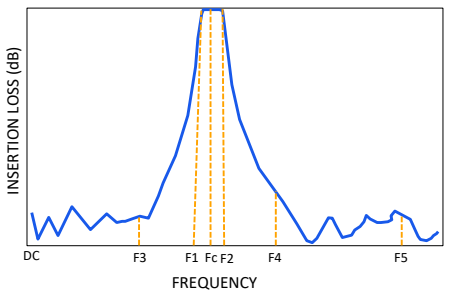
1. This filter is bi-directional RF1 and RF2 ports may be interchanged, see S-Parameters for actual performance.

ABSOLUTE MAXIMUM RATINGS[2,3]

Parameter	Ratings
Operating Temperature	15°C to +35°C
Storage Temperature	-40°C to +85°C
Input Power[4]	30W 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-019638
ZVBP-1537-S+
EDU4707
URJ
231114

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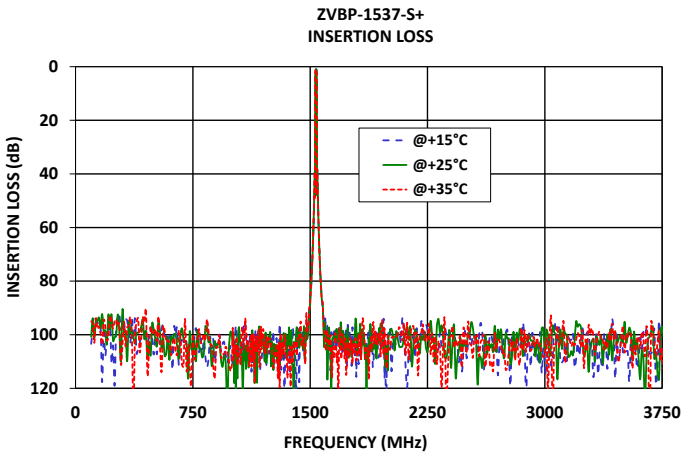
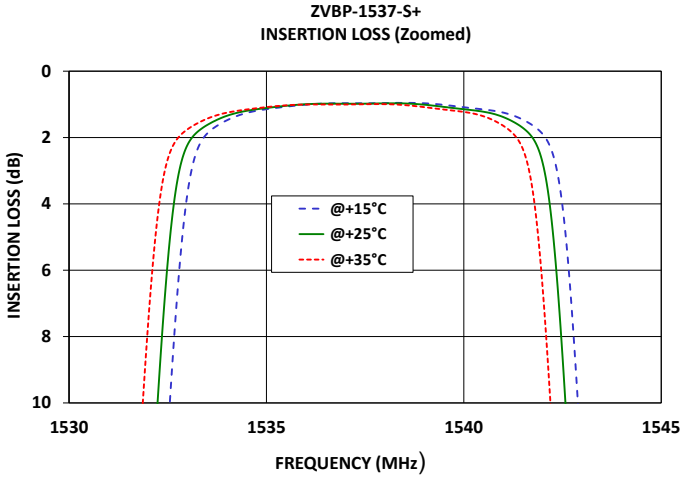
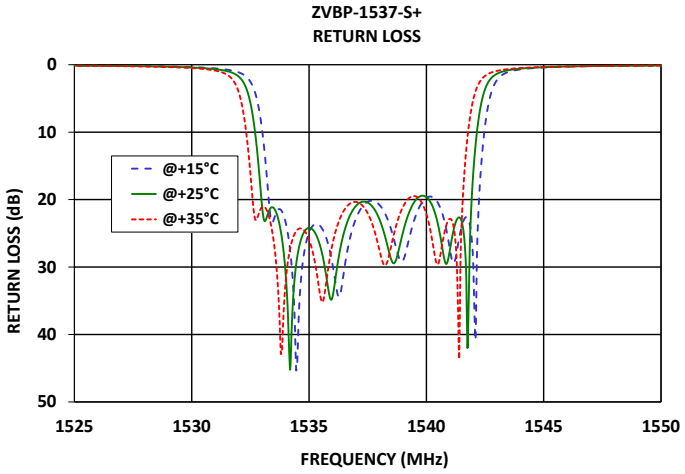
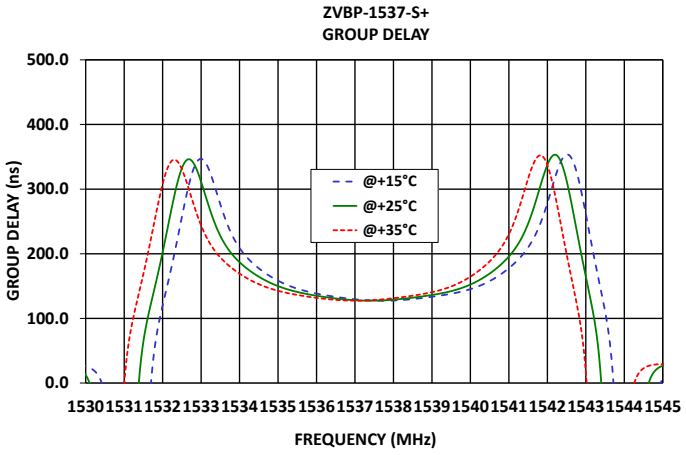
TYPICAL PERFORMANCE GRAPHS









Bandpass Filter

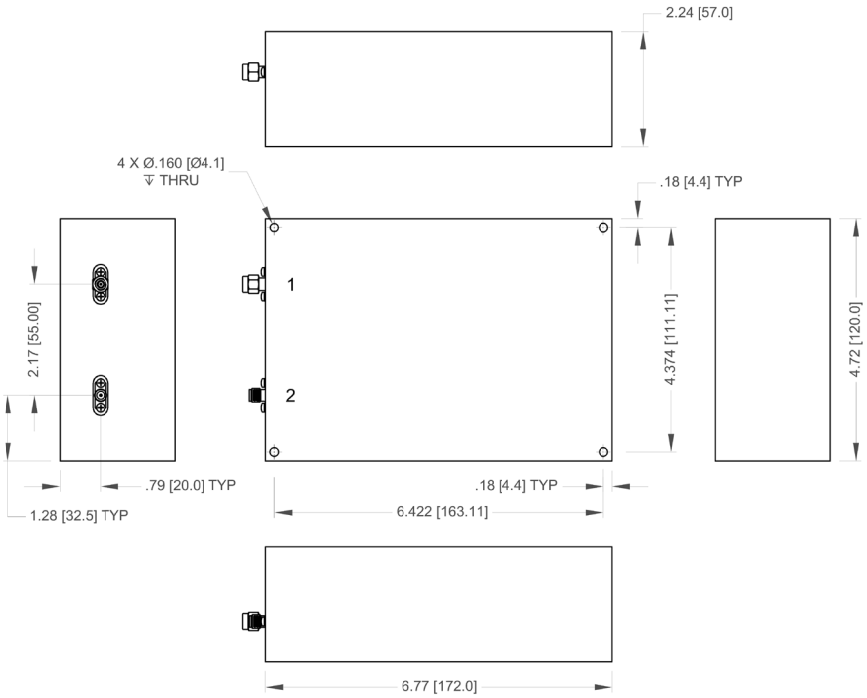
ZVBP-1537-S+

50Ω 1533.4 to 1541.1 MHz SMA Male/Female

CONNECTOR DESCRIPTION

Function	Marking on Unit	Connector
RF1[1]	1	SMA Male
RF2[1]	2	SMA Female

CASE STYLE DRAWING



Unit Weight: 1300 grams

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

PRODUCT MARKING*: ZVBP-1537-S+

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

Bandpass Filter

ZVBP-1537-S+

50Ω 1533.4 to 1541.1MHz SMA 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	ZM3307
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

Cavity Band Pass Filter ZVBP-1537-S+

Typical Performance Data

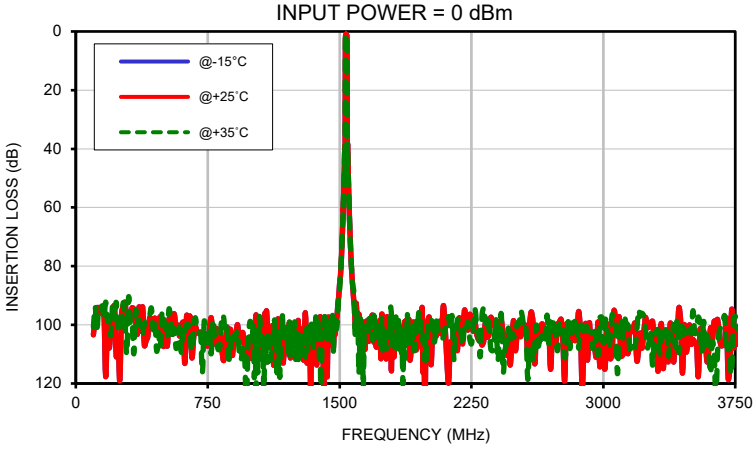
FREQ.	INSERTION LOSS			INPUT RETURN LOSS			OUTPUT RETURN LOSS		
(MHz)	(dB)			(dB)			(dB)		
	@+15°C	@+25°C	@+35°C	@+15°C	@+25°C	@+35°C	@+15°C	@+25°C	@+35°C
100.00	103.42	103.42	100.76	0.05	0.05	0.05	0.04	0.04	0.04
110.00	97.99	97.99	93.83	0.05	0.05	0.06	0.04	0.04	0.04
170.00	117.69	117.69	92.24	0.06	0.06	0.07	0.05	0.05	0.05
380.00	93.84	93.84	103.29	0.06	0.06	0.06	0.05	0.05	0.05
750.00	107.23	107.23	106.03	0.03	0.04	0.04	0.03	0.03	0.04
1000.00	111.34	111.34	100.80	0.02	0.03	0.03	0.02	0.03	0.03
1200.00	104.83	104.83	103.58	0.02	0.03	0.03	0.02	0.03	0.04
1250.00	103.92	103.92	111.82	0.02	0.03	0.04	0.02	0.03	0.04
1300.00	104.38	104.38	104.75	0.02	0.03	0.04	0.02	0.03	0.04
1350.00	106.49	106.49	108.94	0.02	0.03	0.04	0.02	0.03	0.04
1400.00	107.58	107.58	102.99	0.02	0.03	0.04	0.02	0.03	0.04
1500.00	86.03	86.03	88.67	0.03	0.04	0.05	0.03	0.04	0.05
1550.00	49.73	49.73	50.56	0.12	0.12	0.13	0.11	0.12	0.12
1530.50	40.19	40.19	43.19	0.44	0.51	0.63	0.41	0.48	0.60
1531.60	31.44	31.44	23.54	0.79	1.04	1.71	0.75	1.01	1.70
1532.00	21.55	21.55	14.81	1.13	1.75	4.05	1.10	1.75	4.15
1533.00	3.68	3.68	2.22	9.69	21.07	21.09	10.21	26.58	21.19
1533.40	2.02	2.02	1.70	23.26	21.15	24.14	30.36	21.12	23.07
1537.25	0.97	0.97	0.98	21.14	20.34	20.80	21.37	20.63	21.17
1541.10	1.28	1.28	1.44	29.08	25.51	23.21	37.20	26.78	21.93
1544.00	38.76	38.76	46.98	0.70	0.59	0.50	0.62	0.53	0.45
1650.00	101.29	101.29	101.57	0.03	0.04	0.05	0.03	0.04	0.05
1700.00	101.65	101.65	99.39	0.03	0.04	0.05	0.03	0.04	0.05
1750.00	100.82	100.82	103.88	0.03	0.04	0.05	0.03	0.04	0.05
1800.00	98.84	98.84	107.80	0.03	0.05	0.06	0.03	0.04	0.05
1850.00	103.39	103.39	109.15	0.04	0.05	0.06	0.03	0.04	0.05
1900.00	111.85	111.85	103.20	0.04	0.05	0.06	0.03	0.05	0.05
1950.00	106.81	106.81	95.89	0.05	0.06	0.07	0.04	0.05	0.06
2000.00	99.16	99.16	101.96	0.05	0.06	0.07	0.04	0.05	0.06
2050.00	103.81	103.81	98.79	0.06	0.07	0.08	0.04	0.05	0.06
2100.00	100.27	100.27	100.91	0.06	0.07	0.08	0.05	0.06	0.07
2150.00	100.58	100.58	111.78	0.06	0.07	0.09	0.05	0.06	0.07
2200.00	106.32	106.32	107.09	0.07	0.08	0.09	0.05	0.06	0.07
2250.00	98.26	98.26	106.49	0.07	0.08	0.09	0.05	0.06	0.07
2300.00	104.72	104.72	110.90	0.08	0.09	0.10	0.05	0.06	0.07
2400.00	101.71	101.71	112.38	0.09	0.10	0.11	0.06	0.07	0.08
2500.00	108.77	108.77	103.71	0.09	0.10	0.12	0.06	0.07	0.08
2550.00	100.19	100.19	101.50	0.10	0.11	0.12	0.06	0.08	0.09
2650.00	99.80	99.80	104.87	0.11	0.12	0.13	0.07	0.08	0.09
2750.00	99.12	99.12	99.50	0.12	0.13	0.14	0.08	0.09	0.10
2800.00	99.83	99.83	98.90	0.12	0.13	0.14	0.07	0.09	0.10
2850.00	101.95	101.95	100.14	0.12	0.14	0.15	0.08	0.09	0.10
2900.00	99.60	99.60	99.97	0.13	0.15	0.16	0.08	0.09	0.10
2950.00	107.43	107.43	102.29	0.13	0.15	0.16	0.08	0.10	0.11
2960.00	110.77	110.77	106.07	0.13	0.15	0.16	0.08	0.10	0.11
2900.00	99.60	99.60	99.97	0.13	0.15	0.16	0.08	0.09	0.10
2950.00	107.43	107.43	102.29	0.13	0.15	0.16	0.08	0.10	0.11
3000.00	111.57	111.57	106.26	0.14	0.16	0.17	0.09	0.10	0.11
3100.00	110.72	110.72	98.01	0.15	0.16	0.17	0.09	0.11	0.12
3200.00	108.99	108.99	95.06	0.15	0.17	0.18	0.09	0.10	0.11
3300.00	103.30	103.30	102.49	0.16	0.18	0.19	0.10	0.12	0.12
3400.00	112.71	112.71	99.90	0.17	0.19	0.20	0.11	0.12	0.13
3450.00	116.49	116.49	98.80	0.18	0.20	0.20	0.11	0.12	0.13
3500.00	106.51	106.51	102.91	0.18	0.20	0.21	0.11	0.12	0.13
3550.00	101.47	101.47	99.20	0.18	0.20	0.21	0.11	0.12	0.13
3600.00	108.45	108.45	109.71	0.18	0.20	0.21	0.11	0.13	0.14
3640.00	100.28	100.28	125.67	0.19	0.21	0.22	0.11	0.12	0.13
3680.00	106.95	106.95	98.61	0.19	0.21	0.22	0.11	0.13	0.14
3700.00	97.95	97.95	108.91	0.19	0.21	0.22	0.11	0.13	0.14
3750.00	105.86	105.86	96.97	0.20	0.22	0.23	0.12	0.13	0.14

Typical Performance Data

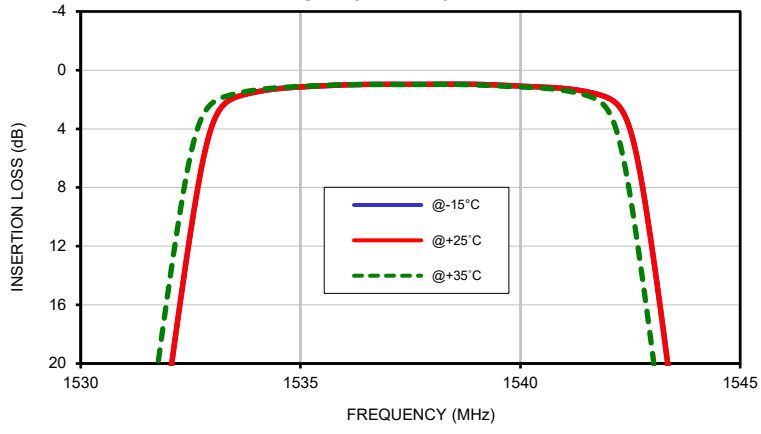
FREQ. (MHz)	GROUP DELAY (nsec)		
	@+15°C	@+25°C	@+30°C
1533.40	295.52	240.75	201.25
1534.50	177.42	164.50	152.95
1534.80	164.99	154.98	146.23
1535.10	155.32	147.75	141.22
1535.30	150.19	143.99	138.57
1535.60	144.17	139.52	135.29
1535.90	139.66	136.03	132.57
1536.00	138.41	135.02	131.77
1536.20	136.15	133.18	130.32
1536.40	134.18	131.56	129.13
1536.60	132.44	130.14	128.23
1536.80	130.92	128.97	127.64
1536.90	130.23	128.50	127.48
1537.00	129.61	128.10	127.41
1537.10	129.05	127.79	127.44
1537.25	128.34	127.49	127.64
1537.30	128.14	127.43	127.76
1537.60	127.39	127.55	128.86
1537.80	127.34	128.08	129.94
1537.90	127.46	128.46	130.56
1538.10	127.96	129.44	131.93
1538.20	128.33	130.02	132.68
1538.30	128.78	130.66	133.46
1538.40	129.29	131.32	134.28
1538.50	129.87	132.05	135.15
1538.60	130.49	132.79	136.07
1538.70	131.16	133.59	137.05
1538.60	130.49	132.79	136.07
1538.90	132.63	135.30	139.26
1539.00	133.42	136.22	140.53
1539.10	134.25	137.22	141.93
1539.20	135.13	138.29	143.50
1539.30	136.05	139.46	145.25
1539.40	137.04	140.75	147.21
1539.50	138.10	142.19	149.40
1539.60	139.27	143.79	151.85
1539.70	140.55	145.58	154.57
1539.80	141.95	147.60	157.58
1539.90	143.53	149.85	160.90
1540.10	147.26	155.14	168.51
1541.40	201.68	232.70	296.77

Typical Performance Curves

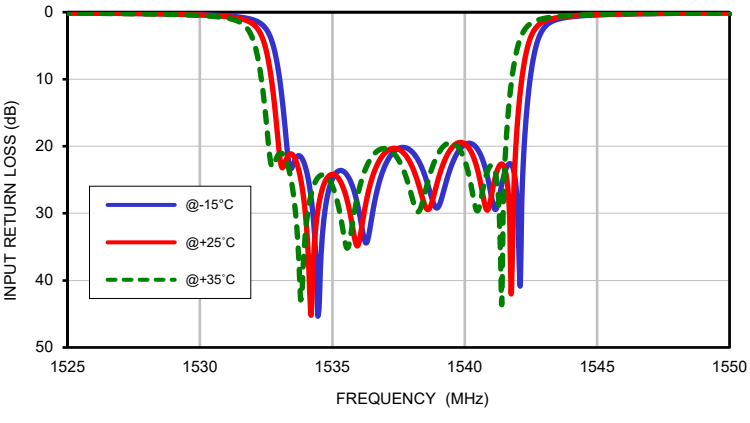
INSERTION LOSS vs. TEMPERATURE
INPUT POWER = 0 dBm



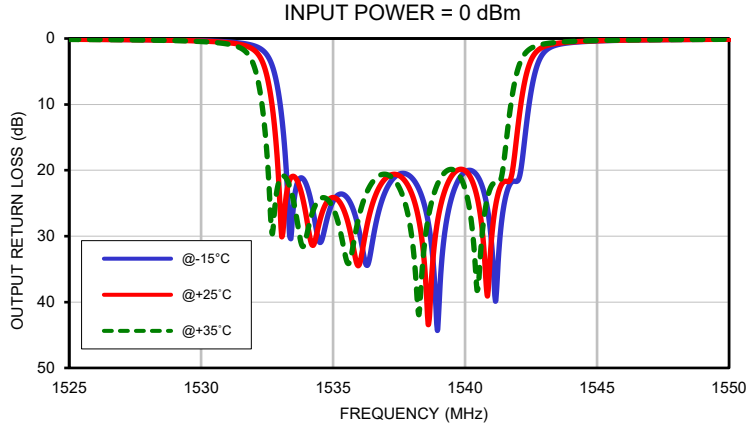
INSERTION LOSS vs. TEMPERATURE (Zoomed)
INPUT POWER = 0 dBm



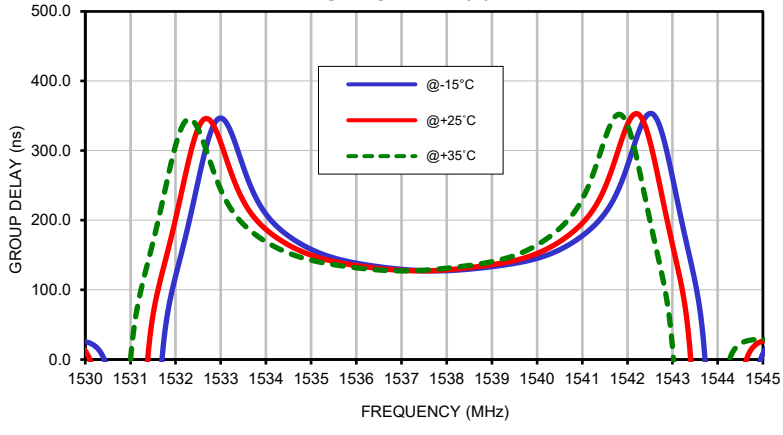
INPUT RETURN LOSS vs. TEMPERATURE
INPUT POWER = 0 dBm



OUTPUT RETURN LOSS vs. TEMPERATURE
INPUT POWER = 0 dBm



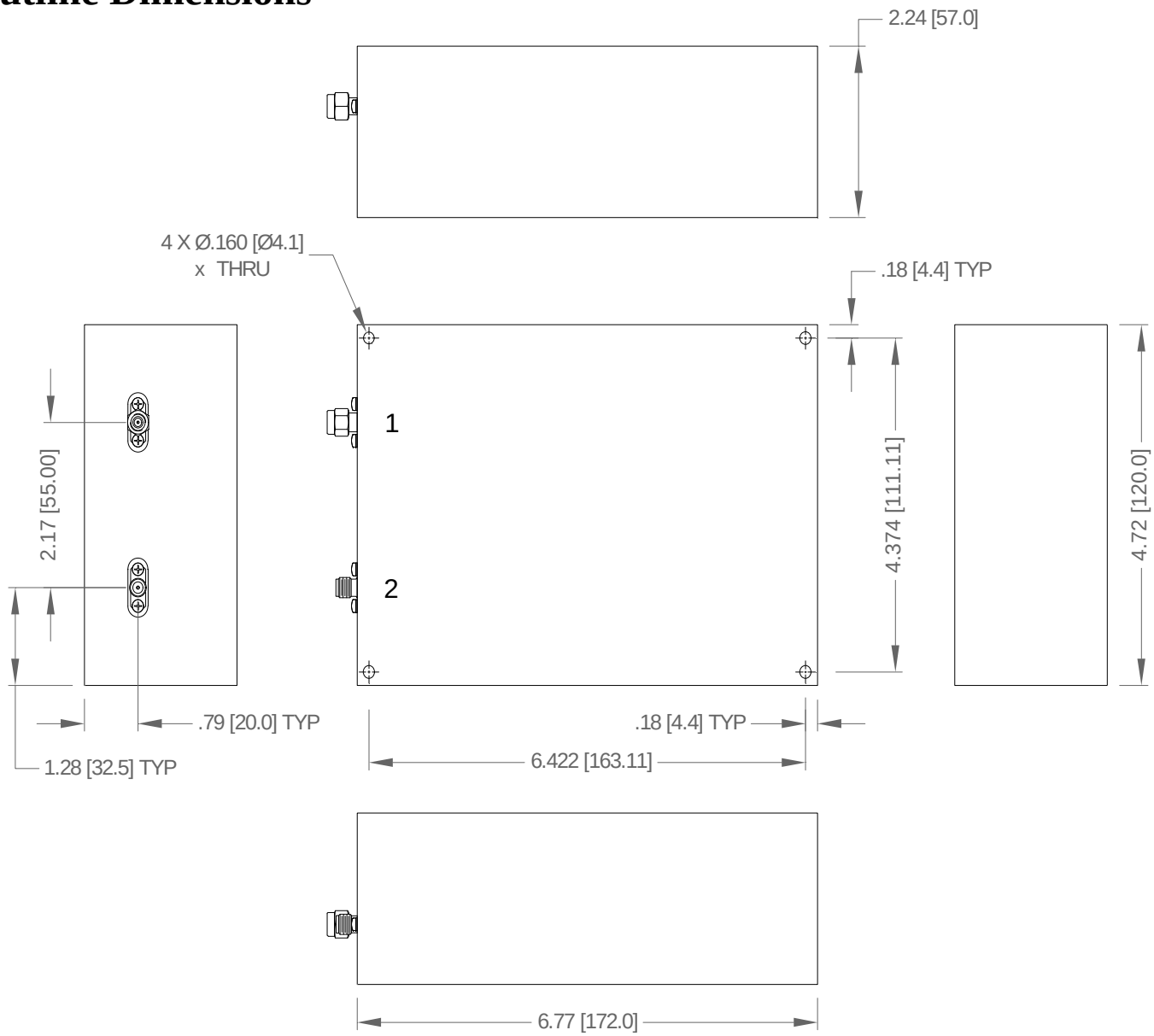
GROUP DELAY vs. TEMPERATURE
INPUT POWER = 0 dBm



Case Style ZM

Outline Dimensions

ZM3307



Dimensions are in inches [mm]. Tolerances: 2 Pl. ± .100; 3 Pl. ± .015

Notes:

1. Case material: Aluminum alloy.
2. Case Finish: Powder coated.
3. Unit Weight: 1300 grams.
4. Refer to the individual model data sheet for the type of connectors available.

Mini-Circuits

Environmental Specifications ENV77T1

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