CAVITY COAXIAL

Bandpass Filter

ZVBP-K27G+

50Ω 24 to 30 GHz 2.92mm Female

KEY FEATURES

- Low Insertion Loss, 0.4dB Typ.
- Good Return Loss, 14dB Typ.
- High Rejection, 70dB Typ.
- Power Handling: 2.5W
- Stopband Up to 50GHz

Generic photo used for illustration purposes only

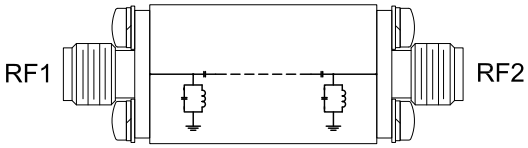
APPLICATIONS

- 5G Millimeter Wave Communicatios.
- Telecommunication.

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[1,2] AT +25°C

Parameter		F#	Frequency (GHz)	Min.	Typ.	Max.	Units
Passband	Center Frequency	Fc	—	—	27	—	GHz
	1dB Bandwidth	—	—	6	—	—	GHz
	Insertion Loss	Fc	27	—	0.4	0.8	dB
	Return Loss	F1-F2	24 - 30	—	14	—	dB
Stop Band, Lower	Rejection	DC-F3	DC - 9	60	77	—	dB
		F3-F4	9 - 17	45	54	—	
Stop Band, Upper	Rejection	F5-F6	37 - 45	45	55	—	dB
		F6-F7	45 - 50	60	68	—	

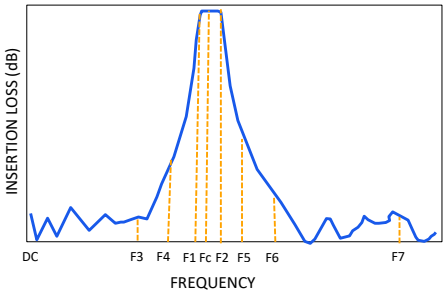
1. This filter is bi-directional RF1 and RF2 ports may be interchanged, see S-Parameters for actual performance.
2. Data measured after calibrating using 2.92mm cal kit.

ABSOLUTE MAXIMUM RATINGS[3,4]

Parameter	Ratings
Operating Temperature	-30°C to +70°C
Storage Temperature	-30°C to +70°C
Input Power[5]	2.5W at 25°C

3. Permanent damage may occur if any of these limits are exceeded.
4. Input and output ports are DC short to ground.
5. Power rating applies only to signals within the passband.

TYPICAL FREQUENCY RESPONSE AT +25°C



REV. OR
ECO-019638
ZVBP-K27G+
EDU4654
URJ
231219

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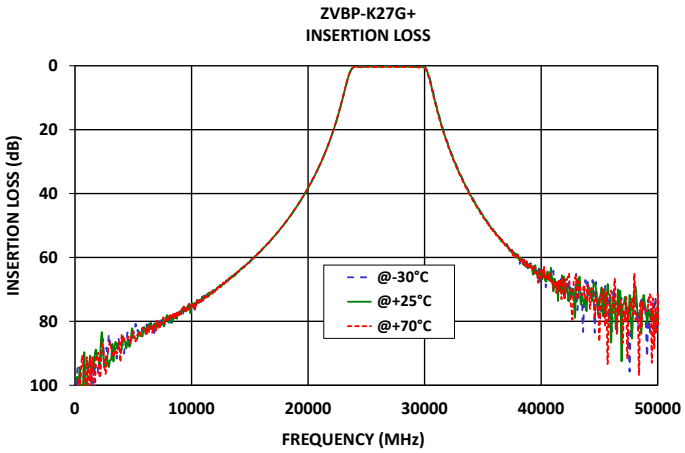
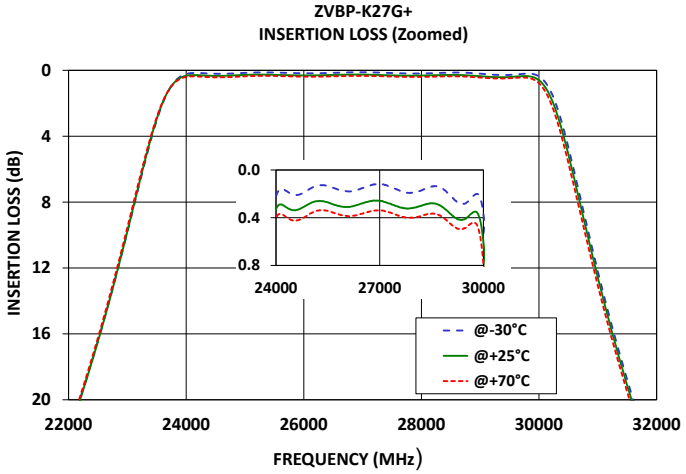
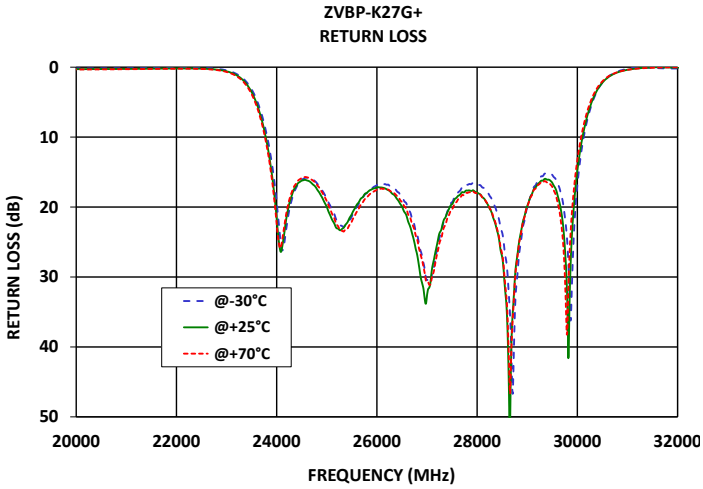
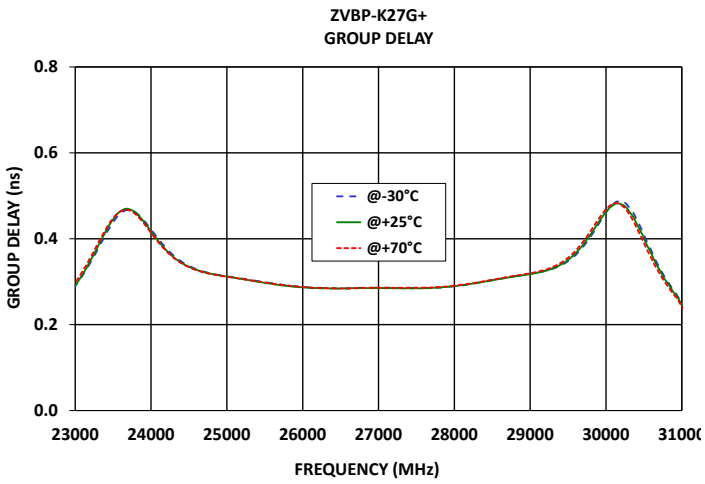
TYPICAL PERFORMANCE GRAPHS









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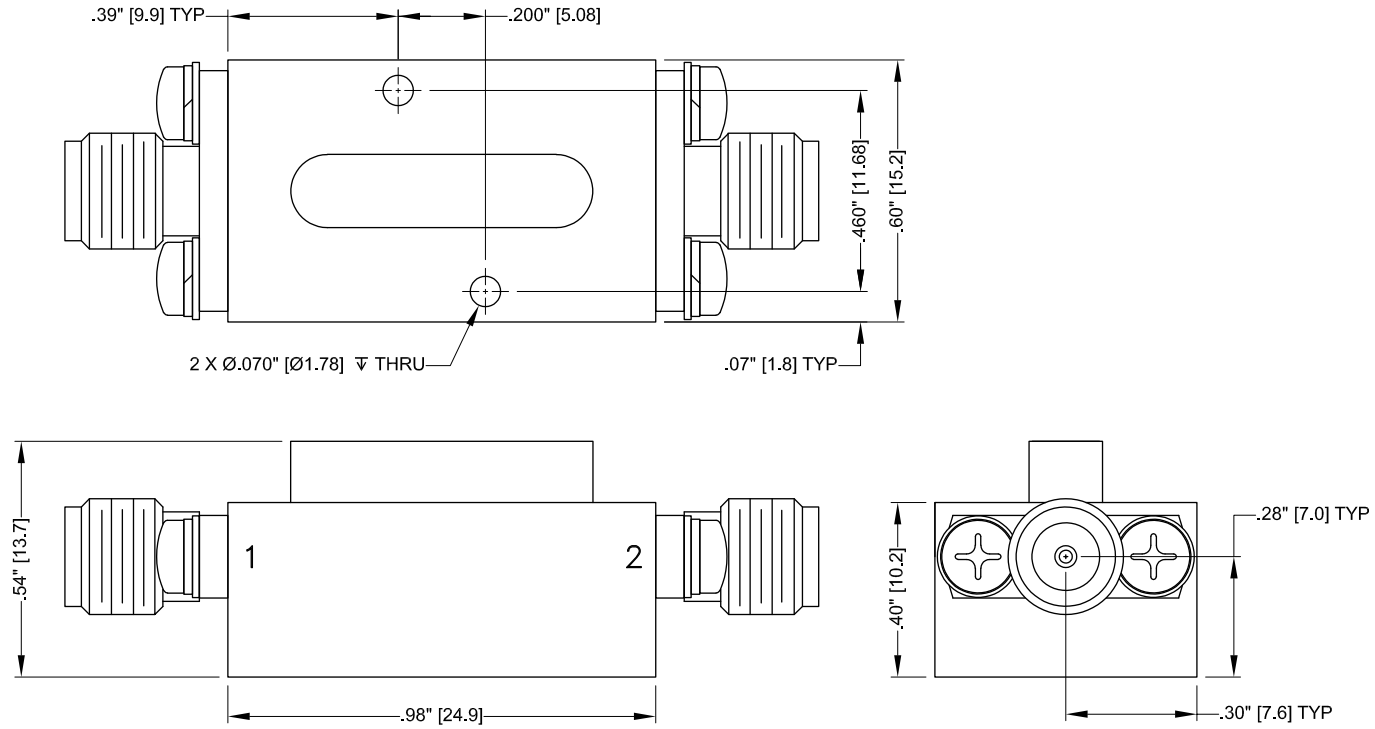
CONNECTOR DESCRIPTION

Function	Marking on Unit	Connector
RF1[1]	1	2.92mm Female
RF2[1]	2	2.92mm Female

CASE STYLE DRAWING



Unit Weight: 35 Grams.
Dimensions are in inches (mm). Tolerances: 2 Pl. + .100; 3 Pl. + .015

PRODUCT MARKING*: ZVBP-K27G+

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

Bandpass Filter

ZVBP-K27G+

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ADDITIONAL INFORMATION IS AVAILABLE ON OUR DASHBOARD **CLICK HERE**

Performance Data & Graphs	Data Graphs S-Parameter (S2P Files) Data Set (.zip file)
Case Style	ZL3532
RoHS Status	Compliant
Environmental Ratings	ENV001

Cavity Band Pass Filter ZVBP-K27G+

Typical Performance Data

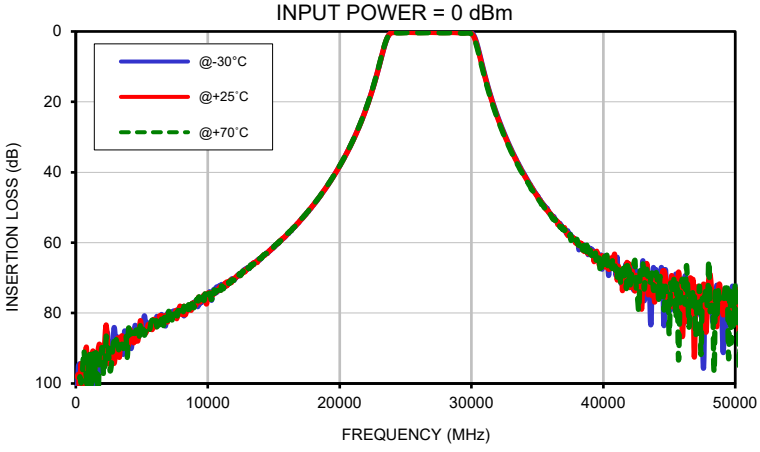
FREQ.	INSERTION LOSS			INPUT RETURN LOSS			OUTPUT RETURN LOSS		
(MHz)	(dB)			(dB)			(dB)		
	@-30°C	@+25˚C	@+70˚C	@-30°C	@+25˚C	@+70˚C	@-30°C	@+25˚C	@+70˚C
100	104.17	98.10	106.54	0.01	0.00	0.01	0.00	0.02	0.03
200	95.06	97.46	111.34	0.00	0.01	0.02	0.02	0.03	0.04
400	96.77	94.35	99.89	0.01	0.02	0.03	0.03	0.04	0.06
800	93.95	89.64	98.33	0.01	0.03	0.04	0.04	0.06	0.08
1000	92.49	101.59	91.44	0.01	0.03	0.04	0.03	0.06	0.08
1500	91.42	94.36	91.34	0.01	0.03	0.05	0.02	0.05	0.08
2000	96.59	91.29	89.94	0.01	0.03	0.05	0.02	0.05	0.08
2400	85.57	88.41	88.41	0.00	0.03	0.05	0.01	0.05	0.08
3000	86.82	92.18	86.33	0.01	0.02	0.04	0.01	0.04	0.07
3500	88.38	86.44	88.82	0.02	0.01	0.03	0.03	0.02	0.05
4500	83.47	86.16	85.76	0.08	0.04	0.02	0.06	0.01	0.03
5500	84.37	83.21	83.80	0.10	0.06	0.04	0.07	0.01	0.03
9000	76.90	77.86	77.76	0.08	0.13	0.17	0.11	0.18	0.23
9500	75.80	76.22	76.66	0.09	0.15	0.18	0.11	0.19	0.24
11000	73.39	73.47	73.51	0.07	0.14	0.17	0.06	0.14	0.19
12000	70.69	70.12	70.62	0.02	0.09	0.12	0.02	0.07	0.12
13000	67.58	67.44	67.70	0.04	0.03	0.06	0.12	0.02	0.04
14500	63.05	62.99	62.73	0.09	0.02	0.01	0.20	0.10	0.03
15000	61.07	61.38	61.31	0.09	0.02	0.02	0.19	0.10	0.02
16000	57.77	57.69	57.79	0.05	0.03	0.07	0.14	0.04	0.04
17000	53.79	53.73	53.70	0.03	0.11	0.16	0.03	0.07	0.16
18500	46.93	46.89	46.86	0.13	0.23	0.28	0.15	0.26	0.37
20000	38.25	38.25	38.18	0.18	0.28	0.33	0.25	0.38	0.47
22000	22.03	22.08	21.91	0.08	0.19	0.22	0.03	0.16	0.22
22500	16.42	16.45	16.23	0.11	0.21	0.25	0.01	0.12	0.19
23000	9.83	9.78	9.54	0.46	0.60	0.68	0.28	0.44	0.57
23500	3.03	2.94	2.84	3.16	3.55	3.86	2.93	3.32	3.68
24000	0.22	0.33	0.40	19.31	21.63	22.43	17.30	18.51	19.13
25500	0.13	0.27	0.34	21.33	21.00	22.06	24.46	23.54	25.09
26000	0.18	0.31	0.38	16.85	17.19	17.53	16.40	16.93	17.16
26500	0.15	0.28	0.37	18.57	19.91	19.27	17.78	19.17	18.60
27000	0.12	0.26	0.34	30.40	32.63	30.65	29.76	31.05	30.07
28500	0.14	0.28	0.37	23.67	27.15	26.73	22.56	25.70	25.29
29000	0.20	0.36	0.44	20.06	19.85	19.93	19.34	19.13	19.15
29500	0.28	0.41	0.48	15.41	16.54	17.13	15.04	16.21	16.78
30000	0.37	0.60	0.79	16.87	14.77	13.27	17.34	14.98	13.47
30400	3.33	3.76	4.24	3.33	3.23	2.93	3.29	3.18	2.92
31000	12.22	12.59	13.07	0.23	0.37	0.38	0.15	0.32	0.39
32000	24.33	24.66	25.03	0.19	0.05	0.01	0.20	0.01	0.10
33000	33.34	33.64	34.07	0.17	0.03	0.06	0.17	0.02	0.16
33500	37.20	37.43	37.86	0.11	0.02	0.12	0.08	0.08	0.23
34000	40.56	40.85	41.30	0.04	0.08	0.19	0.01	0.14	0.30
34500	43.78	44.02	44.48	0.03	0.16	0.26	0.02	0.15	0.32
35000	46.82	46.77	47.19	0.11	0.25	0.35	0.10	0.22	0.38
35500	49.34	49.62	49.91	0.22	0.35	0.44	0.17	0.33	0.46
36000	51.85	51.89	51.96	0.30	0.42	0.51	0.18	0.35	0.48
36500	53.92	53.92	54.57	0.36	0.48	0.57	0.20	0.36	0.49
37000	56.33	56.16	56.28	0.40	0.53	0.61	0.21	0.36	0.52
37500	57.60	58.60	57.69	0.40	0.55	0.62	0.25	0.42	0.59
38000	59.40	59.66	59.05	0.39	0.54	0.61	0.24	0.46	0.58
38500	60.77	61.62	60.79	0.39	0.54	0.61	0.19	0.40	0.54
39000	62.40	62.06	62.09	0.34	0.51	0.58	0.17	0.40	0.53
39500	63.04	62.44	64.97	0.30	0.48	0.53	0.17	0.43	0.52
40000	65.78	65.71	63.99	0.25	0.44	0.48	0.13	0.41	0.49
40500	66.23	66.03	66.00	0.20	0.39	0.43	0.02	0.30	0.40
41000	67.06	66.67	67.62	0.08	0.28	0.31	0.05	0.22	0.30
41500	67.43	68.47	67.33	0.00	0.20	0.22	0.11	0.20	0.24
42000	68.55	72.64	72.70	0.08	0.10	0.13	0.21	0.10	0.15
45000	74.46	72.58	86.28	0.33	0.16	0.06	0.58	0.40	0.20
50000	75.79	81.00	71.58	0.08	0.27	0.42	0.36	0.53	0.73

Typical Performance Data

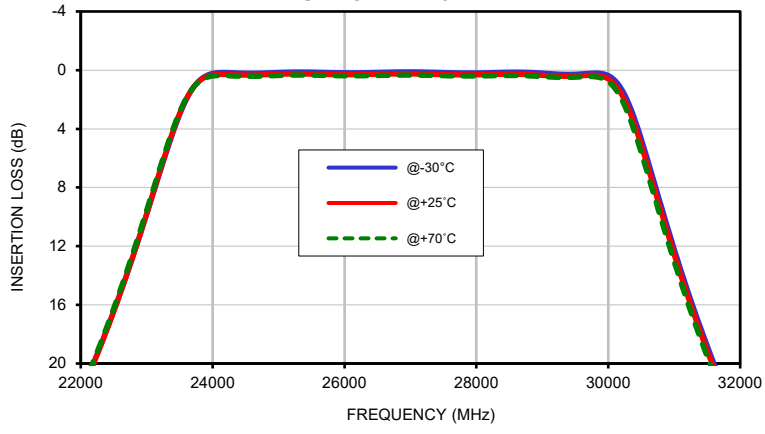
FREQ. (MHz)	GROUP DELAY (nsec)		
	@-30°C	@+25°C	@+70°C
24000	0.42	0.42	0.41
24200	0.38	0.37	0.37
24310	0.36	0.36	0.35
24400	0.35	0.34	0.34
24600	0.33	0.33	0.33
24500	0.34	0.33	0.33
24650	0.33	0.32	0.32
24900	0.32	0.31	0.31
25230	0.31	0.31	0.31
25500	0.30	0.30	0.30
25670	0.29	0.29	0.29
25750	0.29	0.29	0.29
25910	0.29	0.29	0.29
26000	0.29	0.29	0.29
26210	0.29	0.29	0.29
26440	0.28	0.28	0.28
26660	0.29	0.29	0.29
27000	0.29	0.29	0.29
27250	0.29	0.28	0.29
27410	0.29	0.28	0.29
27430	0.29	0.28	0.29
27680	0.29	0.29	0.29
28080	0.29	0.29	0.29
28300	0.30	0.30	0.30
28400	0.30	0.30	0.30
28510	0.30	0.30	0.30
28610	0.31	0.31	0.31
28990	0.32	0.32	0.32
29010	0.32	0.32	0.32
29020	0.32	0.32	0.32
29030	0.32	0.32	0.32
29040	0.32	0.32	0.32
29050	0.32	0.32	0.32
29060	0.32	0.32	0.32
29070	0.32	0.32	0.32
29610	0.36	0.37	0.37
29650	0.37	0.38	0.38
29700	0.38	0.39	0.39
29800	0.41	0.41	0.42
29900	0.43	0.44	0.45
30000	0.46	0.46	0.47

Typical Performance Curves

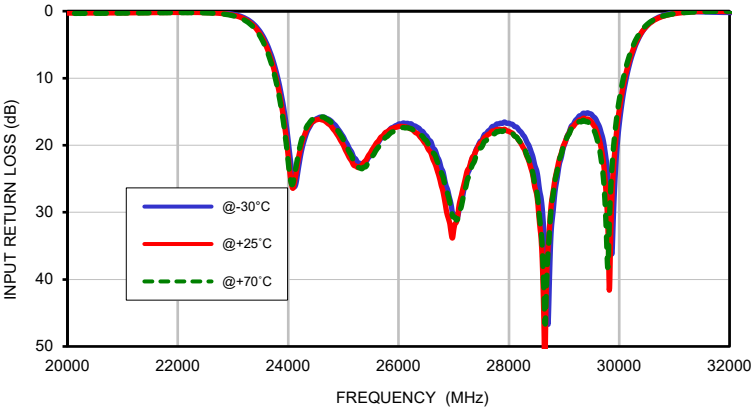
INSERTION LOSS vs. TEMPERATURE
INPUT POWER = 0 dBm



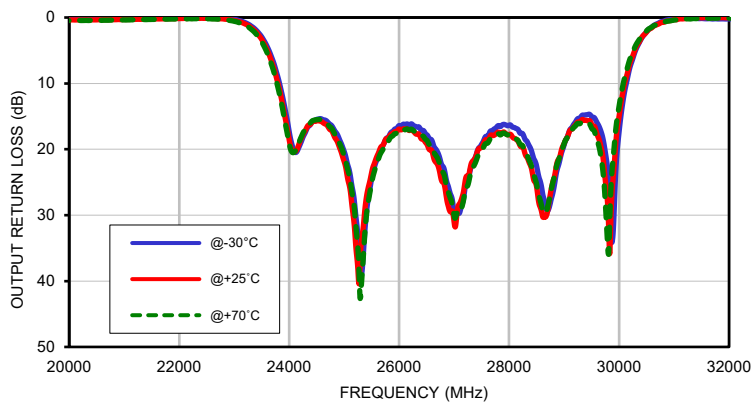
INSERTION LOSS vs. TEMPERATURE (Zoomed)
INPUT POWER = 0 dBm



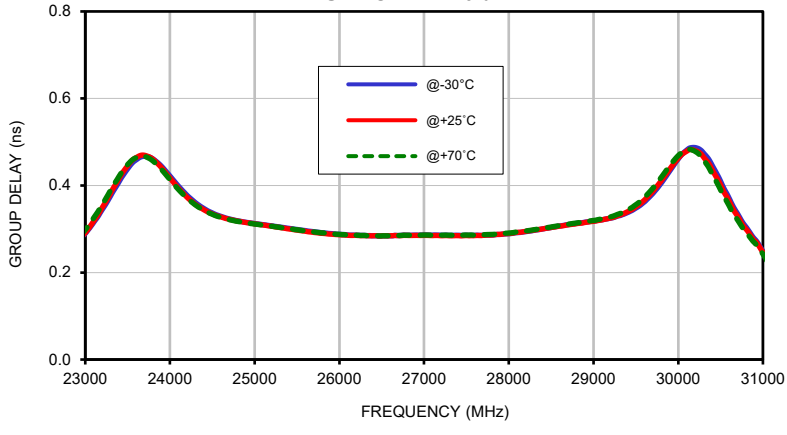
INPUT RETURN LOSS vs. TEMPERATURE
INPUT POWER = 0 dBm



OUTPUT RETURN LOSS vs. TEMPERATURE
INPUT POWER = 0 dBm



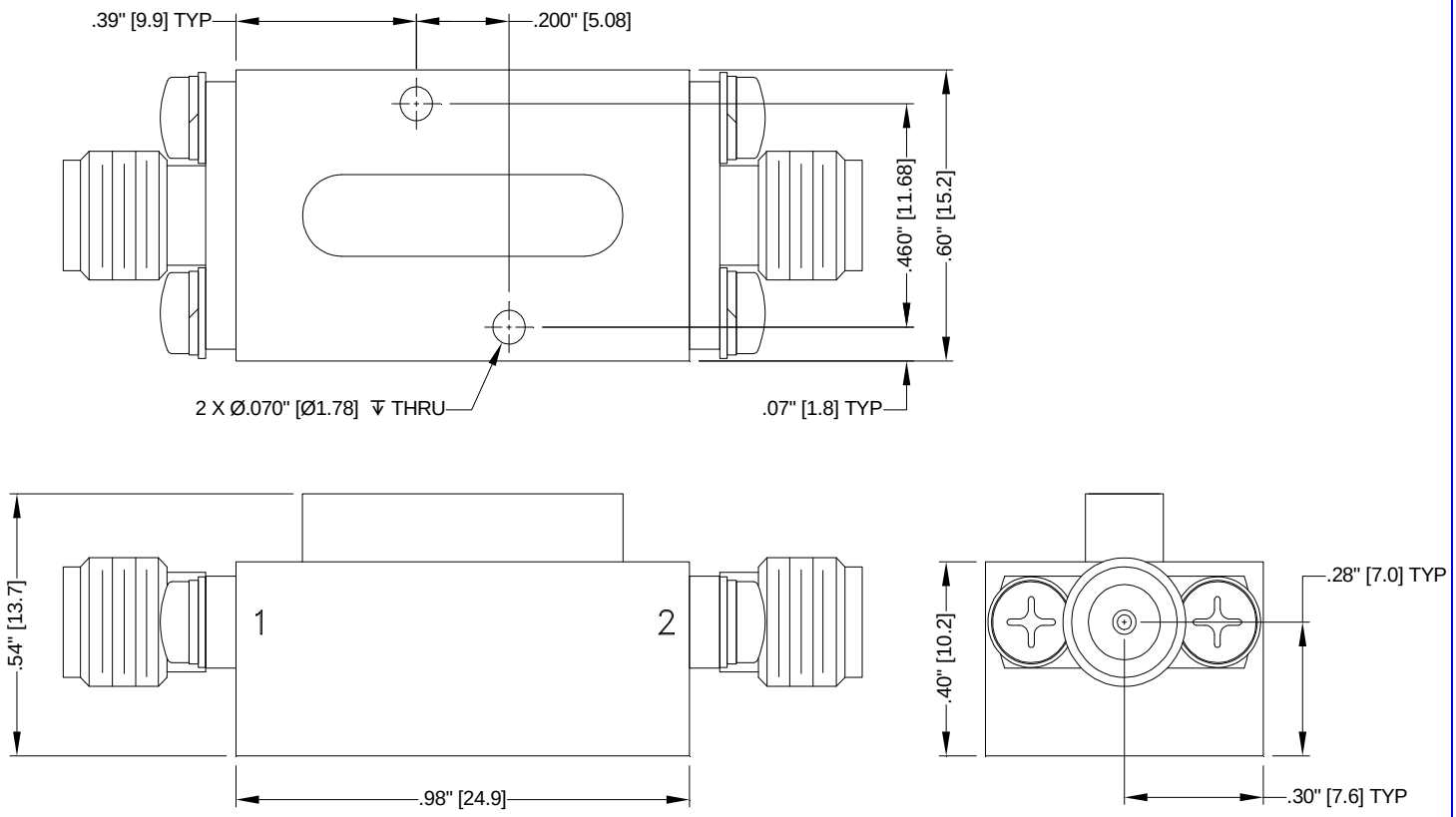
GROUP DELAY vs. TEMPERATURE
INPUT POWER = 0 dBm



Case Style ZL

Outline Dimensions

ZL3532



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

Notes:

1. Case material: Brass.
2. Case Finish: Powder coated.
3. Unit Weight: 35 Grams.
4. Refer to the individual model data sheet for the type of connectors available.

Mini-Circuits

Environmental Specifications ENV001

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	-40° to 85° C Ambient Temperature	Individual Model Data Sheet
Storage Temperature	-55° to 100° C Ambient Environment	Individual Model Data Sheet