SUSPENDED SUBSTRATE STRIPLINE COAXIAL

High Power Low Pass Filter ZLSS252-100W-S+

50Ω DC to 2500 MHz SMA Female

KEY FEATURES

- High Power Handling up to 100W
- Very Low Passband Insertion loss, 0.2 dB Typ.
- High Rejection Floor, 90 dB Typ.
- Excellent Return Loss >20 dB Typ.

Generic photo used for illustration purposes only

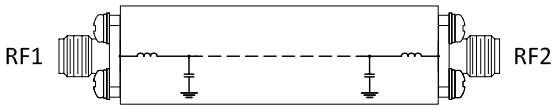
APPLICATIONS

- Tubular Replacement
- ISM Band
- High Power Transmitter / Receiver
- Industrial Heating
- Test and Instrumentation
- Harmonic Rejection

PRODUCT OVERVIEW

Mini-Circuits' Suspended Substrate Stripline filters offer low insertion loss combined with wide stopband, good power handling & temperature stability, small form factor with rugged build ideal for harsh operating environments making them an excellent choice for wideband instruments and systems like ECM, ECCM, ELINT and ultra-broadband receivers. Low pass, high pass, band pass, diplexer and multiplexer designs can be realized with this technology with passband, stopband up to 40GHz and stopband width greater than 6x cutoff frequency.

FUNCTIONAL DIAGRAM



ELECTRICAL SPECIFICATIONS[1] AT +25°C

Parameter		F#	Frequency (MHz)	Min.	Typ.	Max.	Units
Pass Band	Insertion Loss	DC-F1	DC - 2500	—	0.2	0.4	dB
	Return Loss	DC-F1	DC - 2500	—	24	—	dB
Stop Band	Rejection	F2-F3	3900 - 4700	20	35	—	dB
		F3-F4	4700 - 6000	40	55	—	
		F4-F5	6000 - 9000	60	90	—	

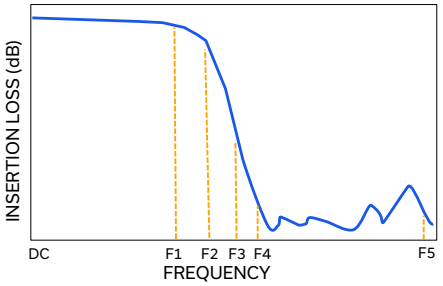
1. This filter is bi-directional, RF1 and RF2 ports may be interchanged, see S-Parameters for actual performance.

ABSOLUTE MAXIMUM RATINGS[2]

Parameter	Ratings
Operating Temperature	-40°C to +85°C
Storage Temperature	-55°C to +100°C
Input Power[3]	100W @25°C

2. Permanent damage may occur if any of these limits are exceeded.
3. Power rating applies only to signals within the passband.

TYPICAL FREQUENCY RESPONSE



REV. OR
ECO-018154
ZLSS252-100W-S+
EDU4345
URJ
230803

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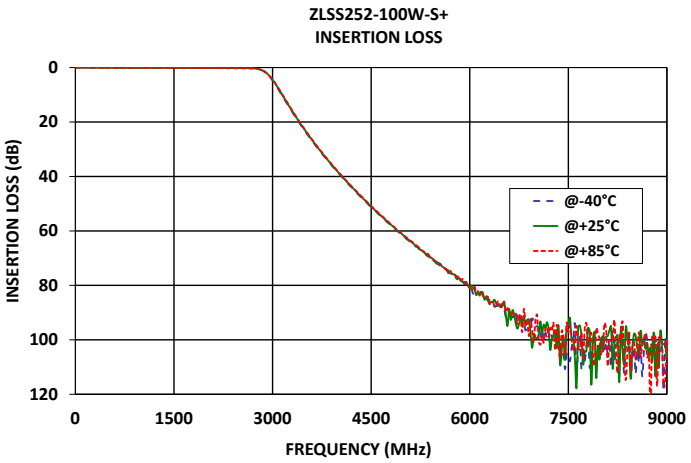
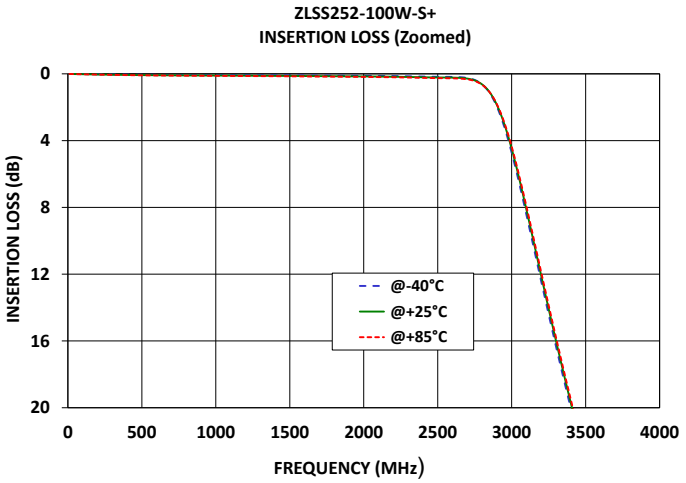
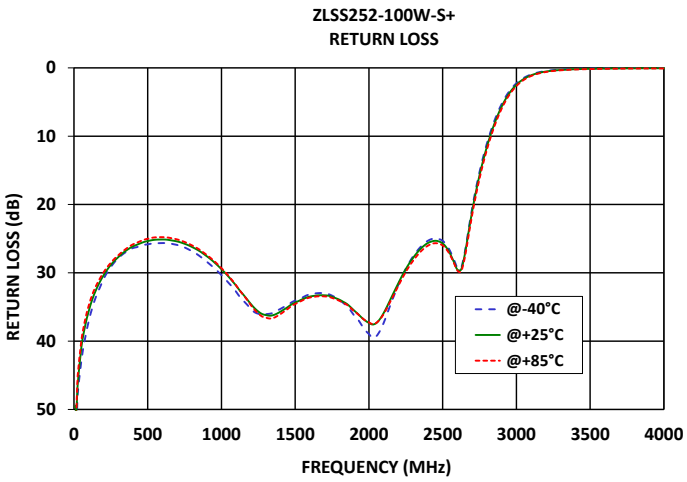
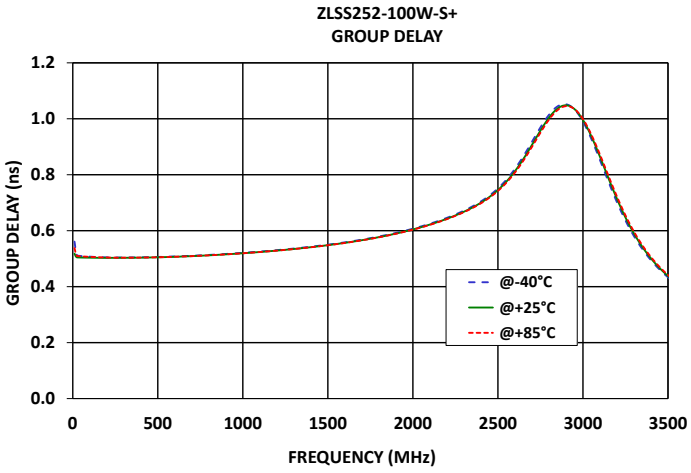
TYPICAL PERFORMANCE GRAPHS









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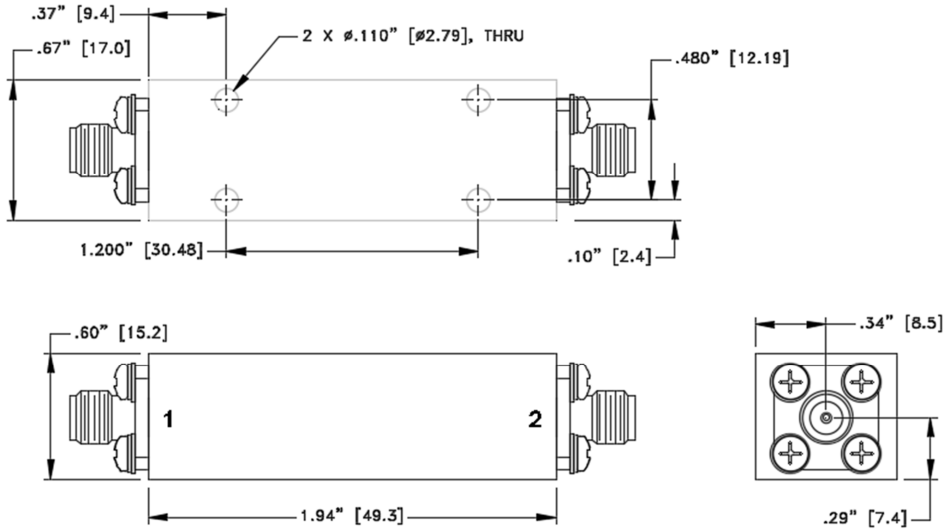
50Ω DC to 2500 MHz SMA Female

CONNECTOR DESCRIPTION

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

CASE STYLE DRAWING



Weight: 40 grams

Dimensions are in inches[mm]. Tolerance:2PL ±.050; 3PL ±.015

PRODUCT MARKING*: ZLSS252-100W-S+

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

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50Ω DC to 2500 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	ZG3525
RoHS Status	Compliant
Environmental Ratings	ENV001
Application note	This is a high-power model with silver finish outer. This will not affect the performance. If customer has any specific outer coating or finish requirement, please Contact Us.

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

Suspended substrate stripline

Low Pass Filter ZLSS252-100W-S+

Typical Performance Data

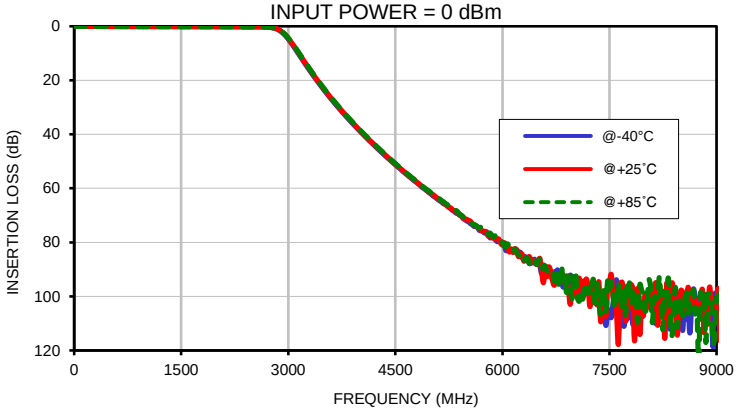
FREQ.	INSERTION LOSS			INPUT RETURN LOSS			OUTPUT RETURN LOSS		
(MHz)	(dB)			(dB)			(dB)		
	@-40°C	@+25°C	@+85°C	@-40°C	@+25°C	@+85°C	@-40°C	@+25°C	@+85°C
25	0.00	0.01	0.01	47.79	46.41	45.09	47.59	46.18	44.78
50	0.01	0.02	0.02	42.87	40.93	39.94	43.00	40.90	39.90
100	0.01	0.02	0.03	37.08	35.62	34.81	37.28	35.71	34.90
150	0.02	0.03	0.04	33.46	32.49	31.90	33.60	32.59	31.96
200	0.03	0.04	0.04	30.96	30.39	29.95	31.04	30.49	30.03
250	0.03	0.05	0.05	29.17	28.84	28.53	29.24	28.95	28.60
300	0.04	0.05	0.06	27.89	27.71	27.44	27.96	27.81	27.52
350	0.04	0.06	0.07	26.99	26.80	26.54	27.13	26.93	26.65
400	0.05	0.07	0.08	26.37	26.12	25.83	26.55	26.26	25.95
450	0.05	0.07	0.08	26.07	25.68	25.37	26.23	25.80	25.47
500	0.06	0.08	0.09	25.83	25.35	25.01	26.00	25.46	25.11
550	0.06	0.08	0.09	25.68	25.16	24.81	25.92	25.30	24.95
600	0.06	0.09	0.10	25.64	25.12	24.78	25.83	25.22	24.87
650	0.06	0.09	0.10	25.71	25.21	24.89	25.84	25.25	24.92
700	0.06	0.09	0.11	25.92	25.41	25.11	26.04	25.43	25.15
750	0.07	0.09	0.11	26.29	25.75	25.48	26.29	25.69	25.43
800	0.07	0.10	0.11	26.84	26.22	25.98	26.76	26.09	25.87
900	0.07	0.10	0.12	28.37	27.57	27.38	28.03	27.26	27.08
1000	0.07	0.10	0.12	30.33	29.47	29.32	29.75	29.02	28.87
1100	0.08	0.11	0.13	32.79	31.90	31.85	32.16	31.52	31.46
1200	0.08	0.11	0.13	35.30	34.58	34.75	35.81	35.15	35.37
1300	0.08	0.12	0.14	36.06	36.18	36.55	39.29	39.60	40.60
1400	0.09	0.12	0.14	35.28	35.68	36.05	38.26	39.38	40.14
1500	0.09	0.13	0.15	34.07	34.36	34.56	35.02	35.41	35.63
1600	0.10	0.13	0.16	33.16	33.48	33.62	32.36	32.67	32.74
1700	0.10	0.14	0.16	32.97	33.30	33.45	30.81	31.03	31.07
2000	0.12	0.15	0.18	38.96	37.34	37.25	32.59	32.03	31.96
2500	0.18	0.22	0.26	25.31	25.70	26.00	24.61	25.02	25.32
2700	0.25	0.29	0.33	20.54	20.98	21.51	20.35	20.79	21.35
2750	0.37	0.39	0.43	15.23	15.71	16.19	15.21	15.71	16.22
2800	0.63	0.63	0.66	11.06	11.54	11.97	11.06	11.56	12.01
2850	1.13	1.09	1.09	7.79	8.23	8.60	7.79	8.25	8.63
2900	1.97	1.86	1.82	5.29	5.66	5.97	5.28	5.66	5.98
3000	4.73	4.49	4.36	2.25	2.47	2.66	2.24	2.46	2.65
3100	8.45	8.14	7.95	0.97	1.08	1.19	0.94	1.07	1.17
3500	23.55	23.25	23.05	0.09	0.14	0.17	0.07	0.12	0.16
3900	35.96	35.68	35.50	0.02	0.06	0.09	0.00	0.05	0.09
4000	38.72	38.47	38.29	0.01	0.05	0.08	0.00	0.05	0.09
4300	46.50	46.24	46.06	0.02	0.06	0.10	0.00	0.05	0.09
4500	51.27	51.02	50.79	0.03	0.08	0.11	0.00	0.05	0.09
4600	53.57	53.31	53.13	0.04	0.09	0.12	0.01	0.06	0.10
4700	55.79	55.49	55.32	0.05	0.10	0.13	0.01	0.07	0.11
4800	57.86	57.74	57.49	0.06	0.10	0.14	0.02	0.07	0.11
4900	60.05	59.80	59.67	0.07	0.11	0.15	0.03	0.08	0.12
5000	62.12	61.95	61.67	0.07	0.12	0.15	0.04	0.09	0.13
5200	65.95	65.66	65.59	0.10	0.14	0.18	0.05	0.10	0.14
5300	68.11	67.87	67.52	0.11	0.16	0.19	0.06	0.11	0.15
5400	69.95	69.69	69.60	0.12	0.17	0.20	0.06	0.11	0.16
5500	72.08	71.41	71.27	0.13	0.18	0.21	0.07	0.12	0.16
5600	74.07	73.40	73.43	0.14	0.19	0.22	0.08	0.13	0.17
5800	76.96	77.64	77.01	0.16	0.21	0.24	0.09	0.14	0.19
5900	78.85	78.75	77.65	0.17	0.21	0.24	0.10	0.15	0.19
6000	79.96	80.95	80.11	0.18	0.22	0.25	0.11	0.16	0.20
6200	82.81	82.84	83.89	0.19	0.23	0.26	0.12	0.17	0.21
6500	86.59	87.63	87.10	0.20	0.25	0.28	0.13	0.18	0.23
7000	94.97	99.08	92.86	0.23	0.28	0.31	0.15	0.20	0.25
7500	105.24	94.59	97.19	0.23	0.28	0.32	0.17	0.22	0.27
8000	100.23	99.24	105.49	0.21	0.27	0.31	0.17	0.23	0.28
8500	102.84	97.77	100.83	0.21	0.28	0.31	0.17	0.23	0.28
9000	104.18	106.26	100.39	0.21	0.27	0.30	0.16	0.23	0.28

Typical Performance Data

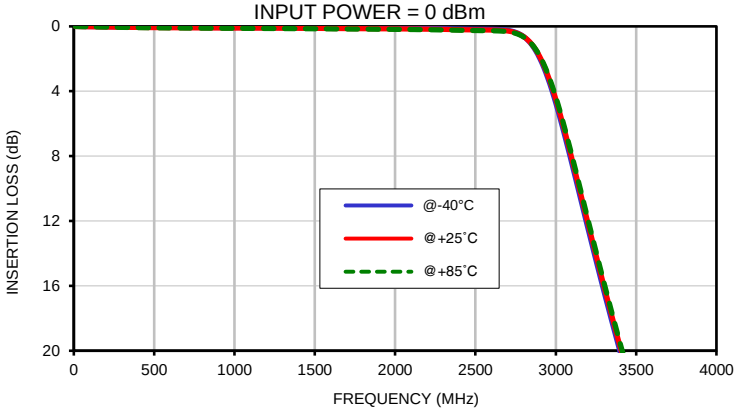
FREQ. (MHz)	GROUP DELAY (nsec)		
	@-40°C	@+25˚C	@+85˚C
25	0.51	0.50	0.51
50	0.51	0.50	0.51
100	0.51	0.50	0.51
150	0.51	0.50	0.51
200	0.50	0.50	0.50
250	0.50	0.50	0.50
300	0.50	0.50	0.50
350	0.50	0.50	0.50
400	0.50	0.50	0.50
450	0.51	0.50	0.50
500	0.51	0.50	0.51
550	0.51	0.51	0.51
600	0.51	0.51	0.51
650	0.51	0.51	0.51
700	0.51	0.51	0.51
750	0.51	0.51	0.51
800	0.51	0.51	0.51
850	0.52	0.51	0.51
900	0.52	0.52	0.52
950	0.52	0.52	0.52
1000	0.52	0.52	0.52
1050	0.52	0.52	0.52
1100	0.53	0.52	0.52
1150	0.53	0.53	0.53
1200	0.53	0.53	0.53
1250	0.53	0.53	0.53
1300	0.54	0.53	0.53
1350	0.54	0.54	0.54
1400	0.54	0.54	0.54
1500	0.55	0.55	0.55
1600	0.56	0.56	0.56
1700	0.57	0.57	0.57
1800	0.58	0.58	0.58
1900	0.59	0.59	0.59
2000	0.61	0.60	0.60
2100	0.62	0.62	0.62
2200	0.65	0.64	0.64
2300	0.67	0.67	0.67
2400	0.70	0.70	0.70
2500	0.75	0.75	0.74

Typical Performance Curves

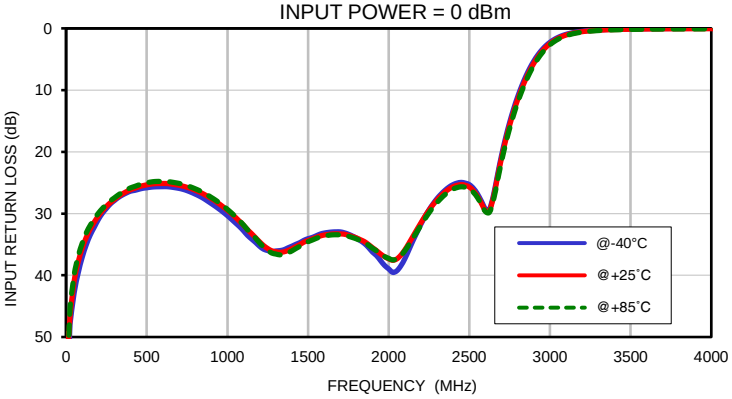
INSERTION LOSS vs. TEMPERATURE
INPUT POWER = 0 dBm



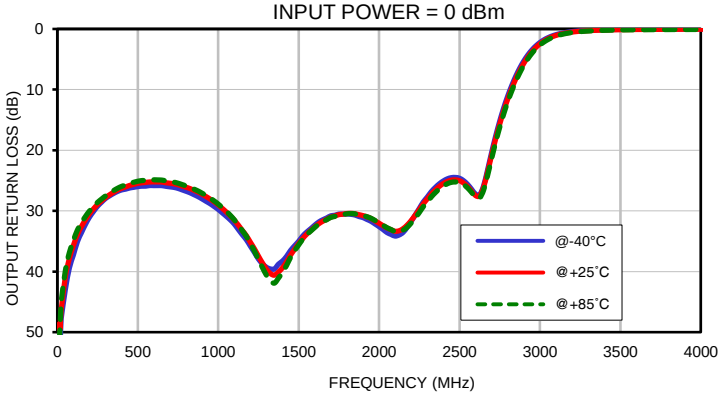
INSERTION LOSS vs. TEMPERATURE (Zoomed)
INPUT POWER = 0 dBm



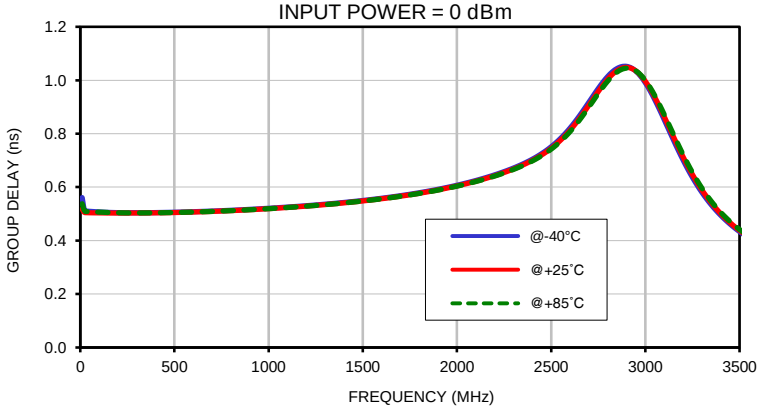
INPUT RETURN LOSS vs. TEMPERATURE
INPUT POWER = 0 dBm



OUTPUT RETURN LOSS vs. TEMPERATURE
INPUT POWER = 0 dBm



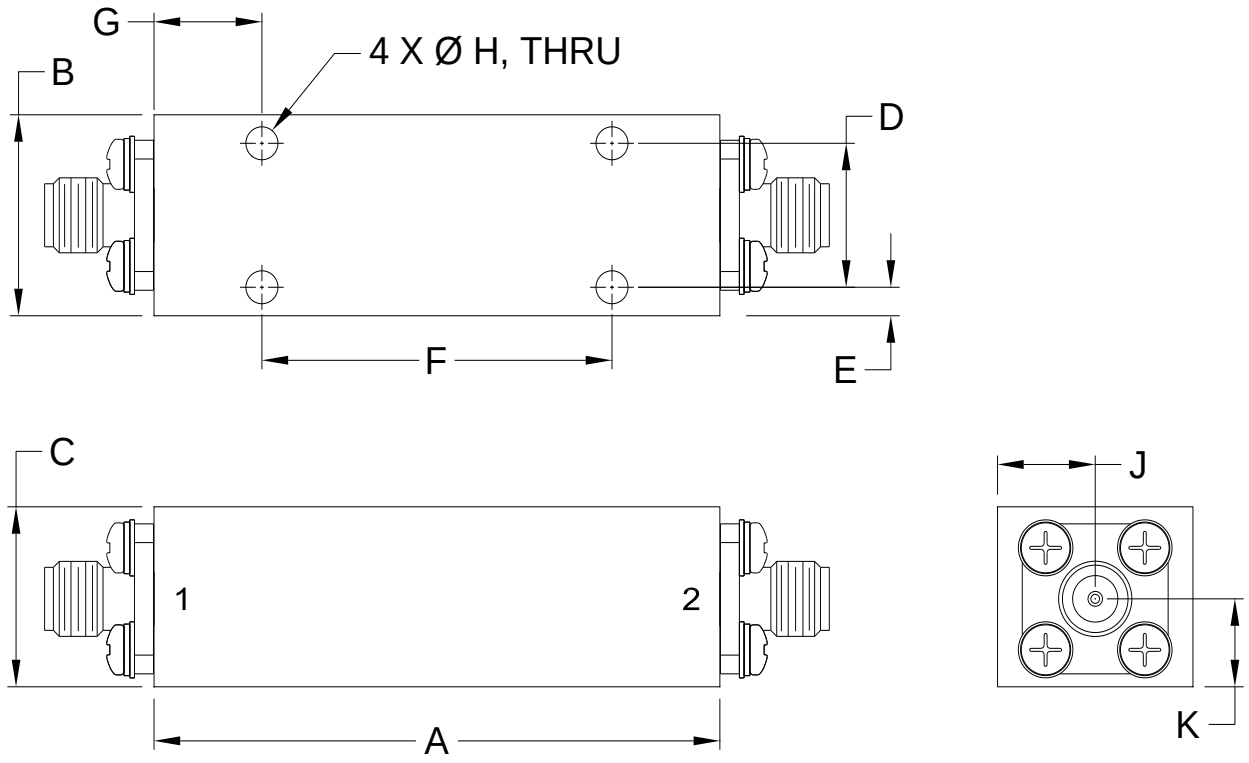
GROUP DELAY vs. TEMPERATURE
INPUT POWER = 0 dBm



Case Style ZG

Outline Dimensions

ZG3525



CASE#	A	B	C	D	E	F
ZG3525	1.94 (49.3)	.67 (17.0)	.60 (15.2)	.480 (12.19)	.10 (2.4)	1.200 (30.48)

CASE#	G	H	J	K	WT. GRAMS
ZG3525	.37 (9.4)	.110 (2.79)	.34 (8.5)	.29 (7.4)	40

Dimensions are in inches (mm). Tolerances: 2 Pl. ± .050; 3 Pl. ± .015

Notes:

1. Case material: Aluminum.
2. Case Finish:
   a. Case & Cover of the units - Silver plating.
3. 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