LUMPED LC COAXIAL

Bandpass Filter

ZX75BP-140-S+

50Ω 130 to 150 MHz SMA-Male to SMA-Female

KEY FEATURES

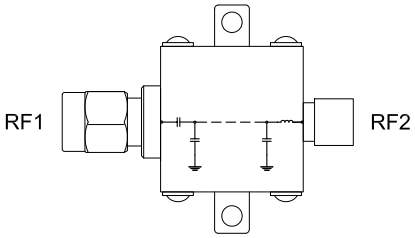
- Insertion Loss, 3.5dB Max.
- Stop Band Return Loss, 17dB Typ.
- Stop Band Rejection,45dB Typ.

Generic photo used for illustration purposes only

APPLICATIONS

- Aircraft Communication
- Space Research
- Defense System
- Satellite

FUNCTIONAL DIAGRAM



PRODUCT OVERVIEW

ZX75BP-140-S+ is a 50Ω bandpass filter in a connectorized package covering 130 to 150MHz. This offers good matching within the passband and high rejection in stopband.

ELECTRICAL SPECIFICATIONS[1] AT +25°C

Parameter		F#	Frequency (MHz)	Min.	Typ.	Max.	Units
Passband	Center Frequency	Fc	—	—	140	—	MHz
	Insertion Loss	F1-F2	130 - 150	—	—	3.5	dB
	Return Loss	F1-F2	130 - 150	12	17.5	—	dB
Stop Band, Lower	Rejection	DC-F3	DC - 40	35	45	—	dB
		F3-F4	40 - 100	20	29	—	
Stop Band, Upper	Rejection	F5-F6	180 - 300	20	27	—	dB
		F6-F7	300 - 1500	35	45	—	
		F7-F8	1500 - 6000	—	30	—	
Maximum Deviation from Linear Phase		Fc ±15MHz	125 - 155		±9	±14	deg

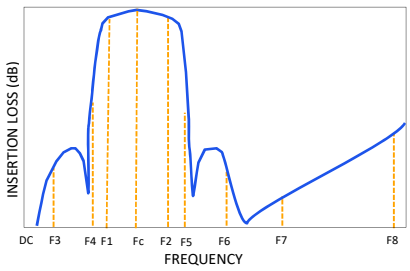
1. This filter is bi-directional RF1 and RF2 ports may be interchanged, see S-Parameters for actual performance.

ABSOLUTE MAXIMUM RATINGS[2]

Parameter	Ratings
Operating Temperature	-40°C to + 85°C
Storage Temperature	-55°C to + 100°C
Input Power[3]	0.3W max.

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 AT +25°C



REV. A
ECO-019558
ZX75BP-140-S+
EDU4622
URJ
231012

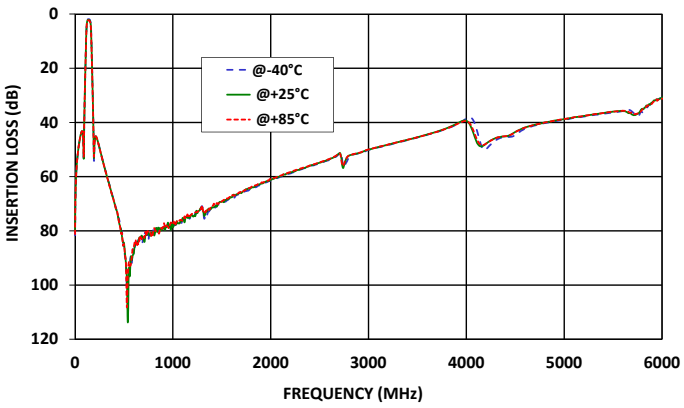
Bandpass Filter

ZX75BP-140-S+

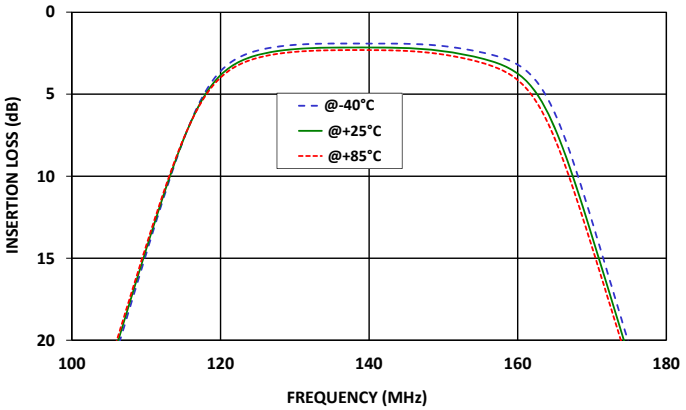
50Ω 130 to 150 MHz SMA-Male to SMA-Female

TYPICAL PERFORMANCE GRAPHS

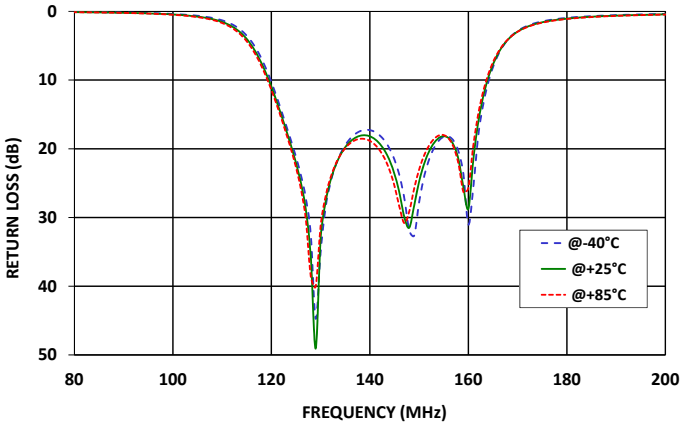
ZX75BP-140-S+
INSERTION LOSS



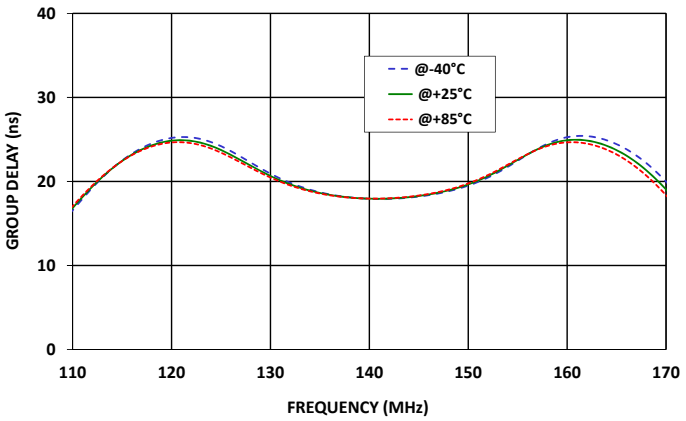
ZX75BP-140-S+
INSERTION LOSS (Zoomed)



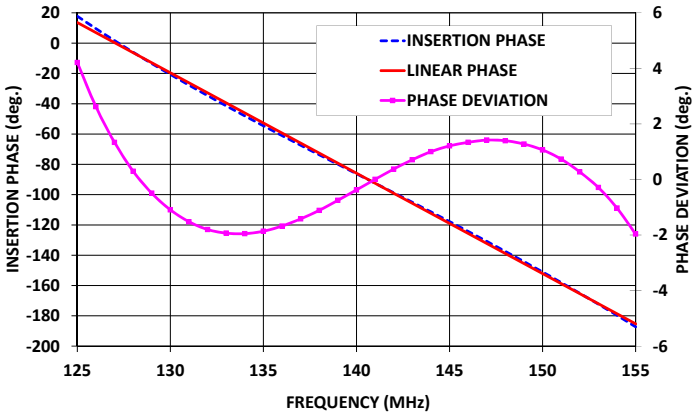
ZX75BP-140-S+
RETURN LOSS



ZX75BP-140-S+
GROUP DELAY



ZX75BP-140-S+
INSERTION PHASE &
DEVIATION FROM LINEAR PHASE AT 25°C



Bandpass Filter

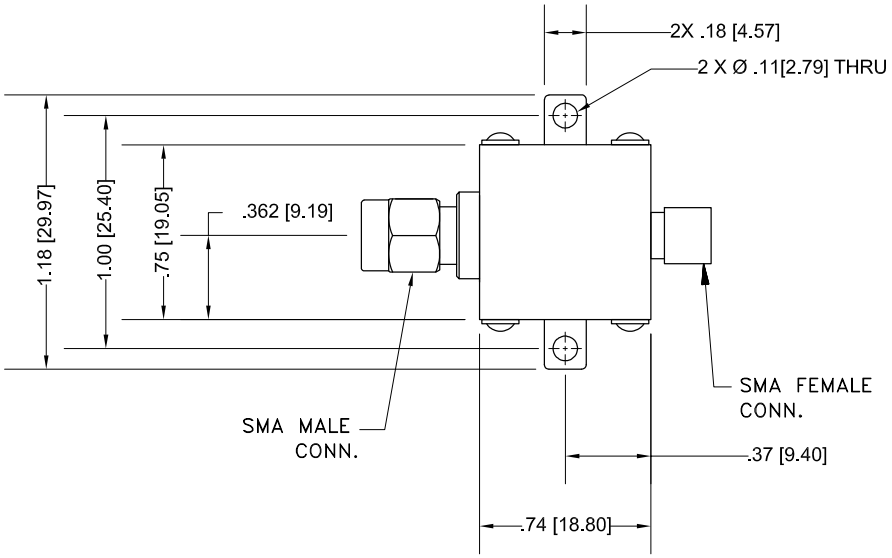
ZX75BP-140-S+

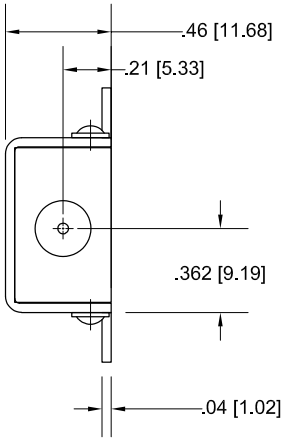
50Ω 130 to 150 MHz SMA-Male to SMA-Female

CONNECTOR DESCRIPTION

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

CASE STYLE DRAWING





Weight: 24.4 gram
Dimensions are in inches (mm). Tolerances: 2Pl. ± .03; 3Pl. ± .015
Tolerance on hole size and interaxes dimensions to be ± .005.

PRODUCT MARKING*: ZX75BP-140-S+

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

Bandpass Filter

ZX75BP-140-S+

50Ω 130 to 150 MHz SMA-Male to 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	KE1467
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

Coaxial Band Pass Filter ZX75BP-140-S+

Typical Performance Data

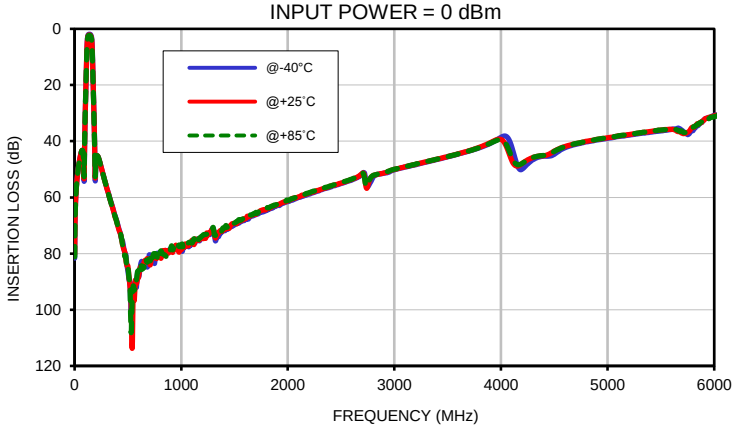
FREQ. (MHz)	INSERTION LOSS (dB)			INPUT RETURN LOSS (dB)			OUTPUT RETURN LOSS (dB)		
	@-40°C	@+25°C	@+85°C	@-40°C	@+25°C	@+85°C	@-40°C	@+25°C	@+85°C
10	60.79	60.91	60.89	0.00	0.00	0.00	0.00	0.00	0.00
20	54.72	54.78	54.70	0.00	0.00	0.00	0.00	0.00	0.00
22	53.88	53.81	53.85	0.00	0.00	0.01	0.00	0.01	0.00
30	50.99	50.96	50.99	0.01	0.01	0.01	0.01	0.01	0.01
40	48.22	48.20	48.17	0.01	0.01	0.01	0.01	0.02	0.02
50	46.01	45.98	45.97	0.02	0.02	0.03	0.02	0.03	0.03
60	44.31	44.26	44.22	0.03	0.04	0.04	0.03	0.04	0.05
70	43.32	43.31	43.26	0.05	0.07	0.07	0.05	0.07	0.08
100	30.12	29.65	29.29	0.38	0.45	0.50	0.41	0.49	0.55
106	20.73	20.37	20.08	0.73	0.86	0.95	0.80	0.96	1.07
115	7.81	7.78	7.74	3.54	4.02	4.37	4.01	4.58	4.99
120	3.60	3.84	3.99	10.29	10.97	11.44	12.24	13.11	13.71
130	1.99	2.25	2.42	35.08	33.06	31.25	24.03	23.93	23.64
135	1.91	2.16	2.32	19.47	19.78	19.91	17.86	18.12	18.19
138	1.91	2.15	2.31	17.44	18.11	18.55	16.34	16.86	17.14
140	1.92	2.15	2.31	17.29	18.19	18.85	16.21	16.89	17.32
145	1.93	2.19	2.36	21.60	23.66	25.43	19.24	20.40	21.17
148	1.99	2.28	2.47	31.92	31.49	29.12	23.29	23.59	23.38
149	2.02	2.32	2.52	32.63	28.24	25.77	23.77	23.25	22.56
150	2.07	2.38	2.59	27.78	24.77	23.02	23.06	22.07	21.22
160	3.20	3.75	4.14	31.03	28.72	25.71	14.21	13.27	12.49
163	4.51	5.28	5.84	13.61	12.44	11.68	9.12	8.34	7.79
170	12.75	13.66	14.33	2.85	2.94	2.97	2.11	2.16	2.17
175	20.28	21.06	21.64	1.46	1.58	1.65	1.08	1.18	1.22
180	27.79	28.48	29.02	0.95	1.05	1.11	0.71	0.80	0.84
200	47.91	47.60	47.34	0.38	0.44	0.47	0.30	0.35	0.38
300	56.35	56.53	56.38	0.09	0.12	0.14	0.07	0.11	0.13
500	86.17	84.39	84.89	0.05	0.09	0.11	0.04	0.08	0.10
700	80.48	82.68	81.97	0.05	0.10	0.13	0.04	0.09	0.12
1000	77.25	78.63	77.53	0.07	0.14	0.18	0.05	0.12	0.16
1500	69.70	69.28	69.13	0.11	0.21	0.27	0.08	0.18	0.23
1800	64.58	64.13	63.86	0.14	0.25	0.31	0.11	0.22	0.28
2000	61.43	61.21	60.98	0.16	0.27	0.33	0.13	0.25	0.31
2500	55.04	54.87	54.70	0.21	0.32	0.39	0.16	0.30	0.37
2700	51.50	51.41	51.38	0.23	0.36	0.43	0.20	0.36	0.43
2800	52.81	52.26	52.17	0.24	0.38	0.45	0.41	0.42	0.50
2900	51.39	51.33	51.22	0.35	0.57	0.62	0.20	0.34	0.41
3000	50.19	50.04	49.94	0.42	0.46	0.54	0.20	0.34	0.42
3200	48.39	48.20	48.13	0.26	0.39	0.46	0.20	0.35	0.42
3300	47.43	47.28	47.27	0.26	0.39	0.47	0.21	0.36	0.44
3400	46.49	46.39	46.38	0.27	0.40	0.47	0.22	0.37	0.45
3500	45.55	45.45	45.46	0.27	0.41	0.48	0.22	0.38	0.46
3600	44.56	44.47	44.47	0.28	0.42	0.50	0.25	0.41	0.49
3700	43.49	43.39	43.46	0.29	0.43	0.51	0.28	0.46	0.53
3800	42.31	42.11	42.24	0.31	0.45	0.53	0.34	0.58	0.64
3900	40.77	40.48	40.70	0.33	0.49	0.57	0.56	1.01	1.01
4000	38.62	39.37	39.47	0.36	0.54	0.62	1.73	3.14	2.74
4100	41.95	46.76	45.53	0.43	0.64	0.72	3.66	2.08	2.37
4200	49.88	47.83	47.87	0.57	0.88	0.95	0.93	0.89	1.04
4300	46.58	45.74	45.82	0.95	1.60	1.59	0.48	0.61	0.72
4400	45.35	45.13	45.06	2.50	4.02	3.65	0.35	0.50	0.60
4500	44.67	43.48	43.63	5.36	3.34	3.64	0.29	0.45	0.54
4600	42.33	41.89	41.91	1.90	1.53	1.77	0.26	0.43	0.52
4800	40.24	40.01	40.03	0.62	0.76	0.91	0.22	0.40	0.49
5000	38.97	38.78	38.72	0.42	0.61	0.75	0.21	0.39	0.48
5200	37.85	37.63	37.57	0.37	0.58	0.72	0.20	0.39	0.49
5400	36.79	36.54	36.52	0.35	0.57	0.72	0.20	0.39	0.49
5600	35.74	35.81	35.68	0.40	0.63	0.78	0.23	0.49	0.57
5800	36.28	34.97	35.19	0.51	0.74	0.91	0.30	0.48	0.60
6000	30.70	30.99	31.26	0.56	0.83	1.00	0.25	0.48	0.59

Typical Performance Data

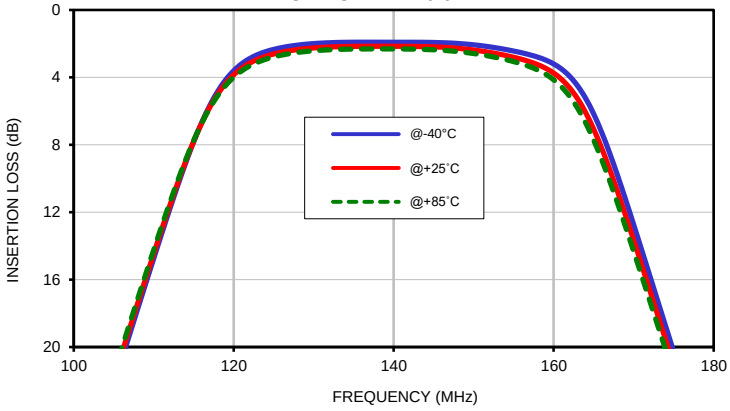
FREQ. (MHz)	GROUP DELAY (nsec)		
	@-40°C	@+25˚C	@+85˚C
130	20.92	20.66	20.47
131	20.34	20.12	19.96
132	19.83	19.65	19.52
133	19.39	19.25	19.14
134	19.02	18.90	18.82
135	18.71	18.62	18.56
136	18.46	18.39	18.35
137	18.26	18.22	18.19
138	18.11	18.09	18.07
139	18.00	18.00	18.00
140	17.94	17.95	17.96
141	17.92	17.94	17.96
142	17.93	17.96	18.00
143	17.98	18.03	18.07
144	18.07	18.13	18.18
145	18.20	18.27	18.32
146	18.36	18.44	18.51
147	18.57	18.66	18.74
148	18.83	18.93	19.02
149	19.13	19.26	19.36
150	19.51	19.64	19.76

Typical Performance Curves

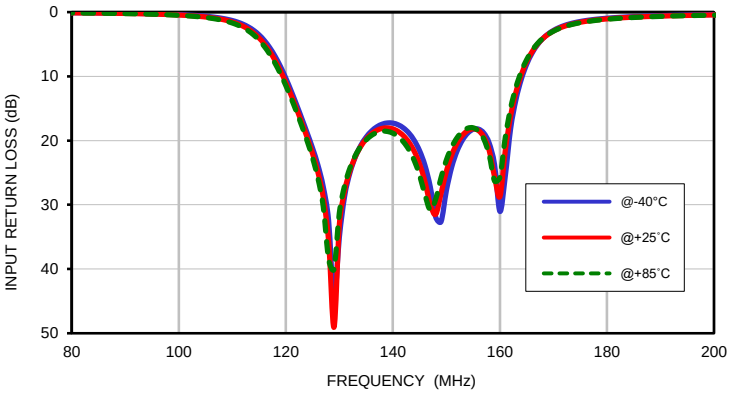
INSERTION LOSS vs. TEMPERATURE
INPUT POWER = 0 dBm



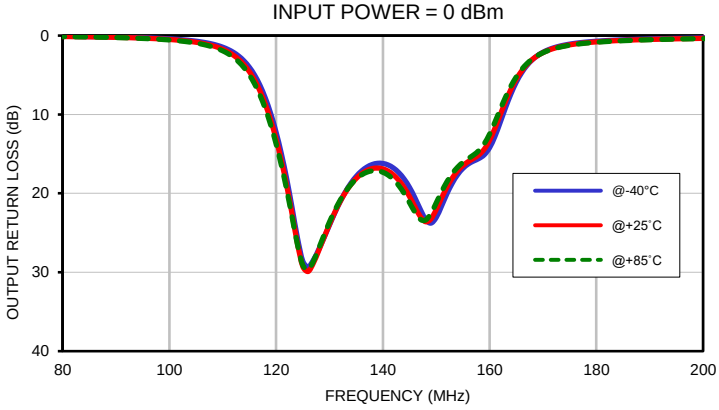
INSERTION LOSS vs. TEMPERATURE (Zoomed)
INPUT POWER = 0 dBm



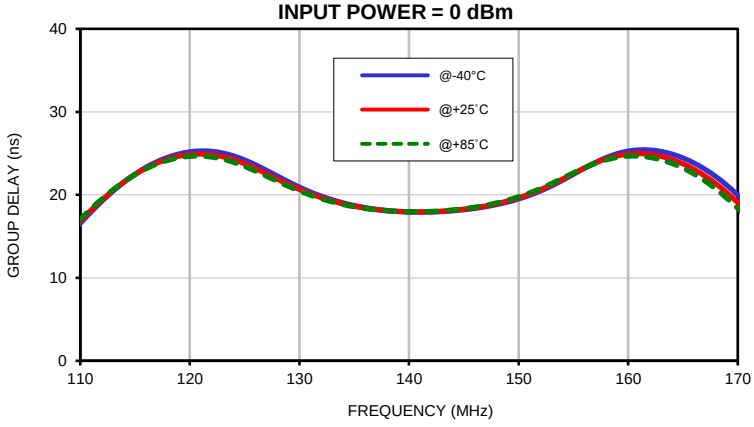
INPUT RETURN LOSS vs. TEMPERATURE
INPUT POWER = 0 dBm



OUTPUT RETURN LOSS vs. TEMPERATURE
INPUT POWER = 0 dBm



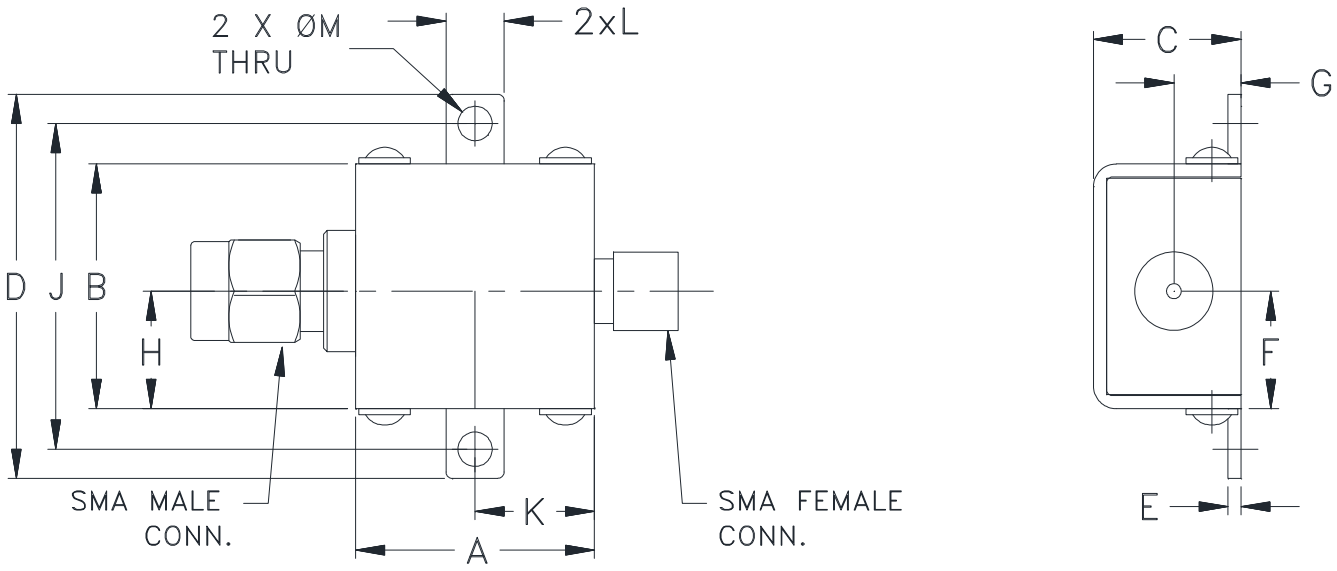
GROUP DELAY vs. TEMPERATURE
INPUT POWER = 0 dBm



Case Style KE

KE1467

Outline Dimensions



CASE #.	A	B	C	D	E	F	G	H	J	K	L	M
KE1467	.74 (18.80)	.75 (19.05)	.46 (11.68)	1.18 (29.97)	.04 (1.02)	.362 (9.19)	.21 (5.33)	.362 (9.19)	1.00 (25.40)	.37 (9.40)	.18 (4.57)	.11 (2.79)

CASE #.	WT. GRAM
KE1467	24.4

Dimensions are in inches (mm). Tolerances: 2Pl. ± .03; 3Pl. ± .015
Tolerance on hole size and interaxes dimensions to be ± .005.

Note:

1. Case material: Brass
2. Case finish: Gold
3. Cover: Nickel plated.

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Environmental Specifications ENV46

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, Condintion 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