LUMPED LC COAXIAL

Bandpass Filter

ZX75BP-135-S+

50Ω 120 to 150 MHz SMA-Male to SMA-Female

KEY FEATURES

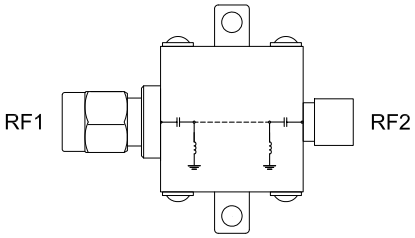
- Good Insertion Loss, 3.5dB Max.
- Stop Band Return Loss, 18dB Typ.
- Stop Band Rejection, 30dB Typ.

Generic photo used for illustration purposes only

APPLICATIONS

- Harmonic Rejection
- Aircraft Communication

FUNCTIONAL DIAGRAM



PRODUCT OVERVIEW

ZX75BP-135-S+ is a 50Ω bandpass filter in a connectorized package covering 120 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	—	—	135	—	MHz
	Insertion Loss	F1-F2	120 - 150	—	—	3.5	dB
	Return Loss	F1-F2	120 - 150	11	22.7	—	dB
Stop Band, Lower	Rejection	DC-F3	DC - 75	35	—	—	dB
		F3-F4	75 - 85	20	—	—	
Stop Band, Upper	Rejection	F5-F6	210 - 245	20	—	—	dB
		F6-F7	245 - 2000	35	—	—	
		F7-F8	2000 - 3500	—	30	—	
Maximum Deviation from Linear Phase		—	Fc ± 15	—	—	±12	deg

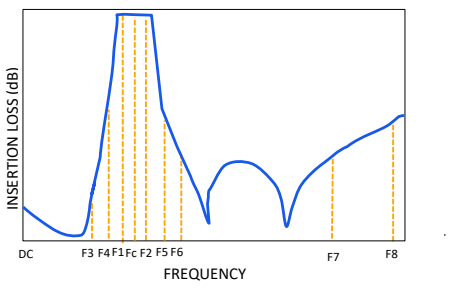
1. This filter is bi-directional RF1 and RF2 ports may be interchanged, see S-Parameters for actual performance.

ABSOLUTE MAXIMUM RATINGS[2]

Parameter	Ratings
Operating Temperature	-40 °C to +85 °C
Storage Temperature	-55 °C to +100 °C
Input Power[3]	0.5W at 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 AT +25°C



REV. A
ECO-019558
ZX75BP-135-S+
EDU4623
URJ
231012

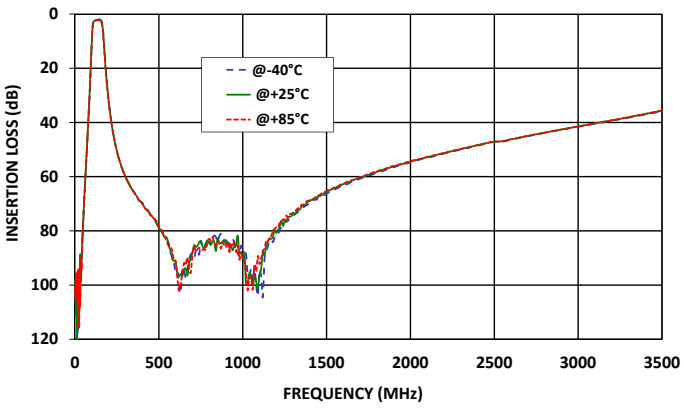
Bandpass Filter

ZX75BP-135-S+

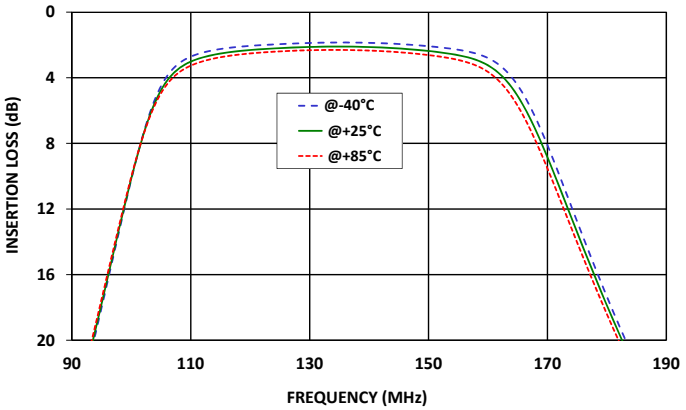
50Ω 120 to 150 MHz SMA-Male to SMA-Female

TYPICAL PERFORMANCE GRAPHS

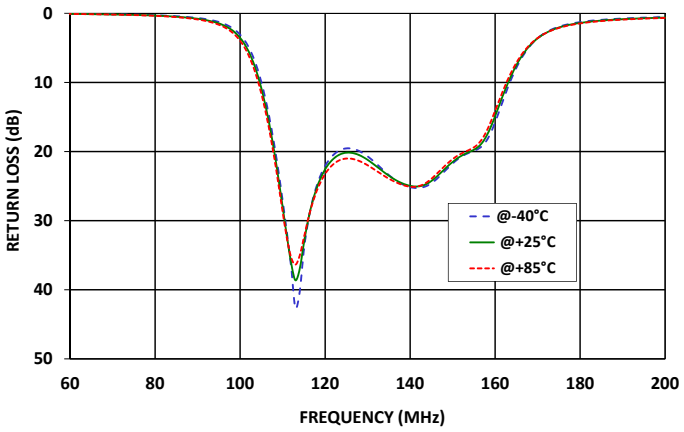
ZX75BP-135-S+
INSERTION LOSS



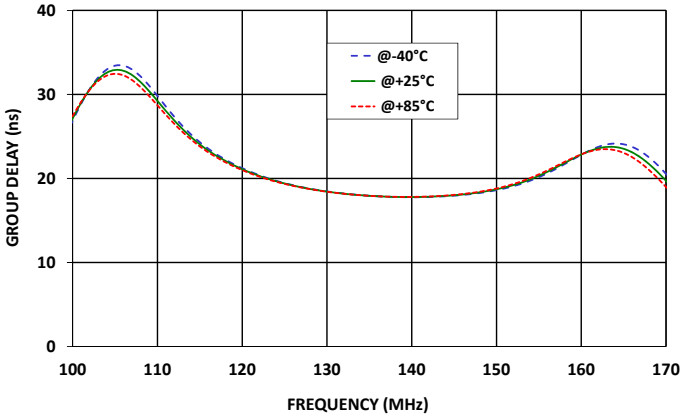
ZX75BP-135-S+
INSERTION LOSS (Zoomed)



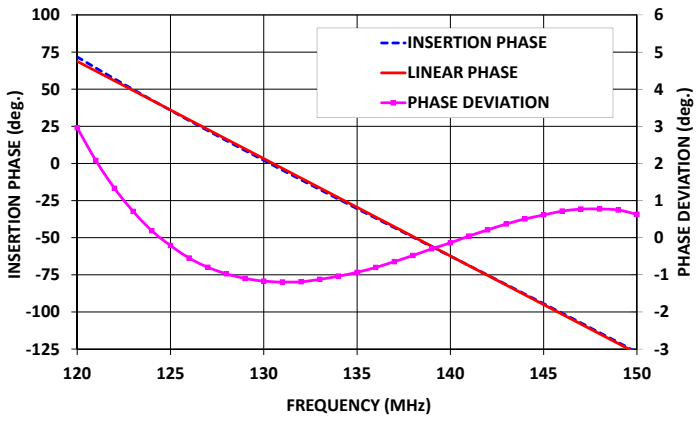
ZX75BP-135-S+
RETURN LOSS



ZX75BP-135-S+
GROUP DELAY



ZX75BP-135-S+
INSERTION PHASE &
DEVIATION FROM LINEAR PHASE AT 25°C



Bandpass Filter

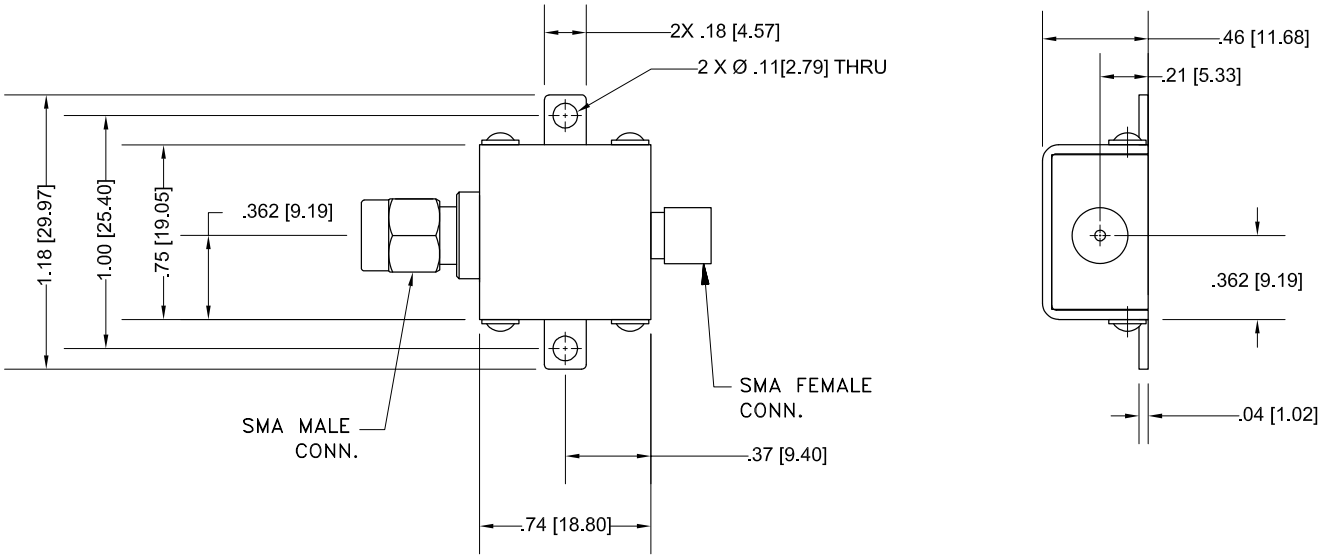
ZX75BP-135-S+

50Ω 120 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-135-S+

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

Bandpass Filter

ZX75BP-135-S+

50Ω 120 to 150 MHz SMP-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-135-S+

Typical Performance Data

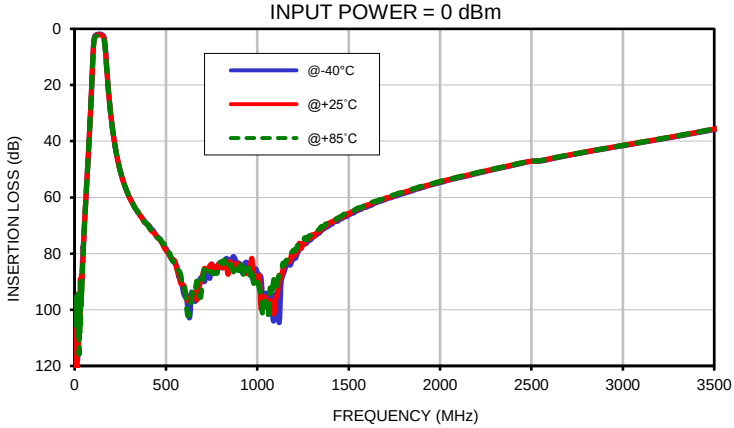
FREQ. (MHz)	INSERTION LOSS (dB)			INPUT RETURN LOSS (dB)			OUTPUT RETURN LOSS (dB)		
	@-40°C	@+25°C	@+85°C	@-40°C	@+25°C	@+85°C	@-40°C	@+25°C	@+85°C
10	104.29	111.25	105.51	0.00	0.00	0.00	0.00	0.00	0.00
12	98.05	121.79	101.99	0.00	0.00	0.00	0.00	0.00	0.00
14	102.19	103.16	100.24	0.00	0.00	0.00	0.00	0.00	0.00
16	118.16	107.41	95.95	0.00	0.00	0.00	0.00	0.00	0.00
20	98.25	97.58	101.41	0.00	0.01	0.01	0.00	0.00	0.00
22	106.62	99.33	98.38	0.00	0.01	0.01	0.00	0.01	0.01
25	97.18	106.80	115.84	0.01	0.01	0.01	0.01	0.01	0.01
30	95.76	96.37	104.57	0.01	0.01	0.01	0.01	0.01	0.01
40	87.38	89.95	90.73	0.02	0.02	0.03	0.02	0.02	0.03
50	74.93	75.16	75.30	0.04	0.05	0.05	0.04	0.04	0.05
60	62.64	62.37	62.38	0.07	0.09	0.10	0.07	0.08	0.09
75	44.93	44.73	44.43	0.20	0.23	0.26	0.19	0.22	0.25
85	32.43	32.15	31.84	0.42	0.49	0.55	0.41	0.48	0.54
90	25.53	25.25	24.93	0.68	0.79	0.89	0.66	0.78	0.88
100	10.20	10.13	10.03	3.10	3.56	3.98	3.14	3.61	4.06
108	3.13	3.44	3.68	18.90	19.93	20.81	21.21	22.64	23.76
120	2.05	2.31	2.52	22.09	22.57	23.24	20.61	20.89	21.23
125	1.95	2.19	2.39	19.55	20.16	21.01	19.33	19.93	20.65
130	1.88	2.12	2.32	20.70	21.21	21.99	21.42	22.10	22.93
135	1.85	2.10	2.30	23.42	23.51	23.93	26.03	26.17	26.29
140	1.87	2.13	2.34	25.15	24.97	25.09	27.68	26.89	25.97
145	1.94	2.21	2.44	24.59	24.27	23.95	24.53	23.97	23.21
146	1.96	2.24	2.47	24.11	23.77	23.38	23.85	23.38	22.69
147	1.99	2.27	2.50	23.54	23.21	22.78	23.23	22.84	22.24
150	2.08	2.37	2.62	21.74	21.50	21.10	21.86	21.85	21.55
162	3.25	3.77	4.25	12.38	11.63	10.98	15.47	14.30	13.34
170	8.11	8.85	9.53	3.60	3.61	3.58	3.93	3.93	3.89
180	17.34	17.88	18.41	1.28	1.39	1.46	1.32	1.44	1.52
190	25.21	25.57	25.95	0.76	0.85	0.92	0.76	0.86	0.93
200	31.54	31.79	32.06	0.54	0.62	0.67	0.54	0.62	0.67
210	36.74	36.91	37.11	0.42	0.49	0.54	0.41	0.48	0.53
230	44.79	44.86	44.95	0.29	0.35	0.38	0.29	0.34	0.38
245	49.36	49.36	49.41	0.24	0.29	0.32	0.23	0.28	0.32
300	60.00	59.97	59.97	0.14	0.18	0.21	0.14	0.18	0.21
400	69.75	69.59	69.96	0.09	0.13	0.16	0.09	0.13	0.16
500	78.13	78.84	78.48	0.08	0.12	0.15	0.07	0.12	0.15
600	94.96	91.69	91.00	0.07	0.12	0.16	0.07	0.12	0.16
800	83.23	84.66	82.96	0.07	0.14	0.19	0.07	0.14	0.18
1000	86.82	90.24	90.00	0.09	0.17	0.23	0.08	0.16	0.21
1200	81.82	80.75	78.67	0.11	0.20	0.27	0.09	0.19	0.24
1400	69.60	69.03	68.68	0.14	0.24	0.31	0.11	0.21	0.27
1450	67.79	67.10	67.03	0.14	0.24	0.32	0.11	0.22	0.28
1500	66.25	66.00	65.18	0.15	0.25	0.33	0.12	0.23	0.29
1600	63.42	62.77	62.66	0.16	0.27	0.35	0.13	0.24	0.30
1700	60.78	60.32	60.21	0.17	0.28	0.36	0.14	0.25	0.32
1800	58.66	58.22	58.02	0.18	0.30	0.38	0.15	0.26	0.33
1900	56.50	56.20	56.10	0.20	0.31	0.39	0.16	0.28	0.35
2000	54.72	54.48	54.36	0.21	0.32	0.40	0.17	0.29	0.36
2100	53.06	52.82	52.72	0.22	0.34	0.42	0.18	0.30	0.37
2200	51.51	51.34	51.25	0.23	0.35	0.43	0.18	0.31	0.38
2300	49.99	49.84	49.79	0.24	0.35	0.44	0.19	0.31	0.39
2400	48.58	48.40	48.38	0.25	0.37	0.45	0.20	0.33	0.40
2500	47.12	47.14	47.11	0.26	0.38	0.46	0.23	0.36	0.43
2700	45.08	44.98	44.95	0.27	0.39	0.48	0.23	0.35	0.43
2900	42.73	42.62	42.62	0.29	0.41	0.50	0.22	0.35	0.43
3000	41.61	41.47	41.48	0.30	0.42	0.51	0.23	0.36	0.44
3100	40.48	40.34	40.35	0.30	0.43	0.52	0.23	0.36	0.44
3200	39.38	39.23	39.22	0.31	0.44	0.53	0.23	0.36	0.44
3400	37.08	36.88	36.86	0.33	0.47	0.57	0.24	0.37	0.46
3500	35.86	35.65	35.59	0.35	0.51	0.62	0.24	0.38	0.46

Typical Performance Data

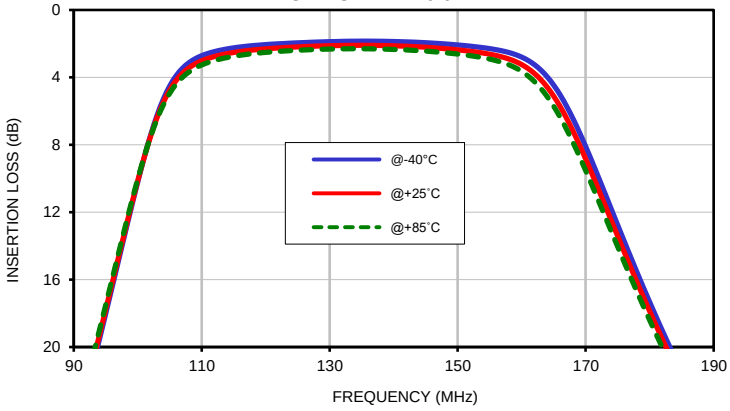
FREQ. (MHz)	GROUP DELAY (nsec)		
	@-40°C	@+25˚C	@+85˚C
120	21.22	21.10	20.99
121	20.78	20.68	20.58
122	20.39	20.31	20.23
123	20.04	19.97	19.90
124	19.72	19.66	19.61
125	19.45	19.40	19.35
126	19.19	19.15	19.12
127	18.97	18.94	18.91
128	18.78	18.75	18.73
129	18.60	18.58	18.56
130	18.45	18.43	18.41
131	18.32	18.30	18.28
132	18.20	18.19	18.18
133	18.10	18.08	18.08
134	18.01	18.00	18.00
135	17.94	17.93	17.93
136	17.88	17.87	17.88
137	17.83	17.83	17.83
138	17.80	17.80	17.81
139	17.77	17.79	17.80
140	17.76	17.78	17.80
141	17.77	17.79	17.82
142	17.79	17.82	17.85
143	17.83	17.86	17.90
144	17.88	17.92	17.96
145	17.95	17.99	18.04
146	18.03	18.09	18.14
147	18.14	18.21	18.27
148	18.27	18.34	18.42
149	18.42	18.51	18.59
150	18.60	18.70	18.80

Typical Performance Curves

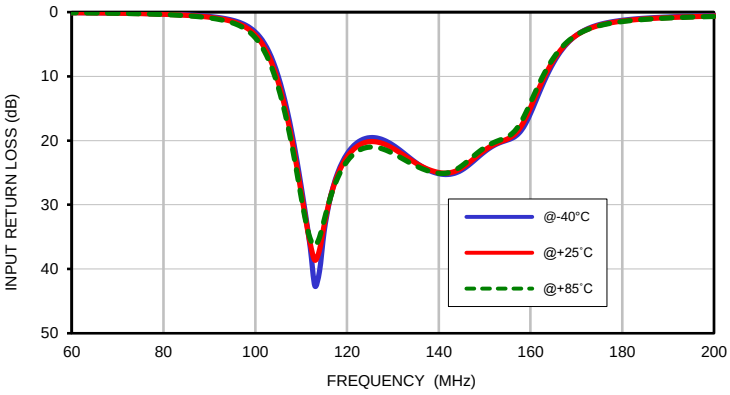
INSERTION LOSS vs. TEMPERATURE
INPUT POWER = 0 dBm



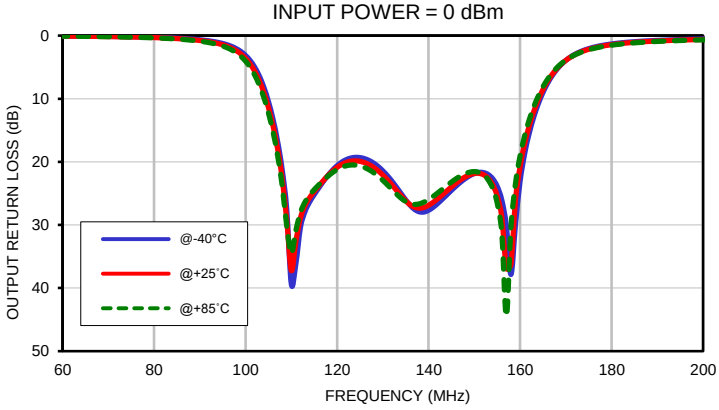
INSERTION LOSS vs. TEMPERATURE (Zoomed)
INPUT POWER = 0 dBm



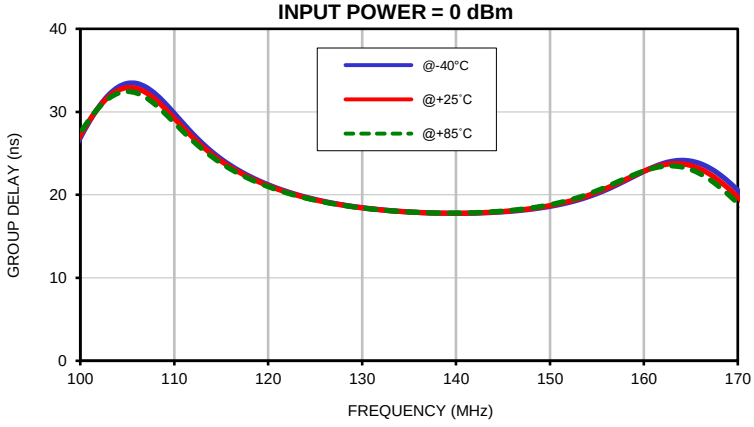
INPUT RETURN LOSS vs. TEMPERATURE
INPUT POWER = 0 dBm



OUTPUT RETURN LOSS vs. TEMPERATURE
INPUT POWER = 0 dBm



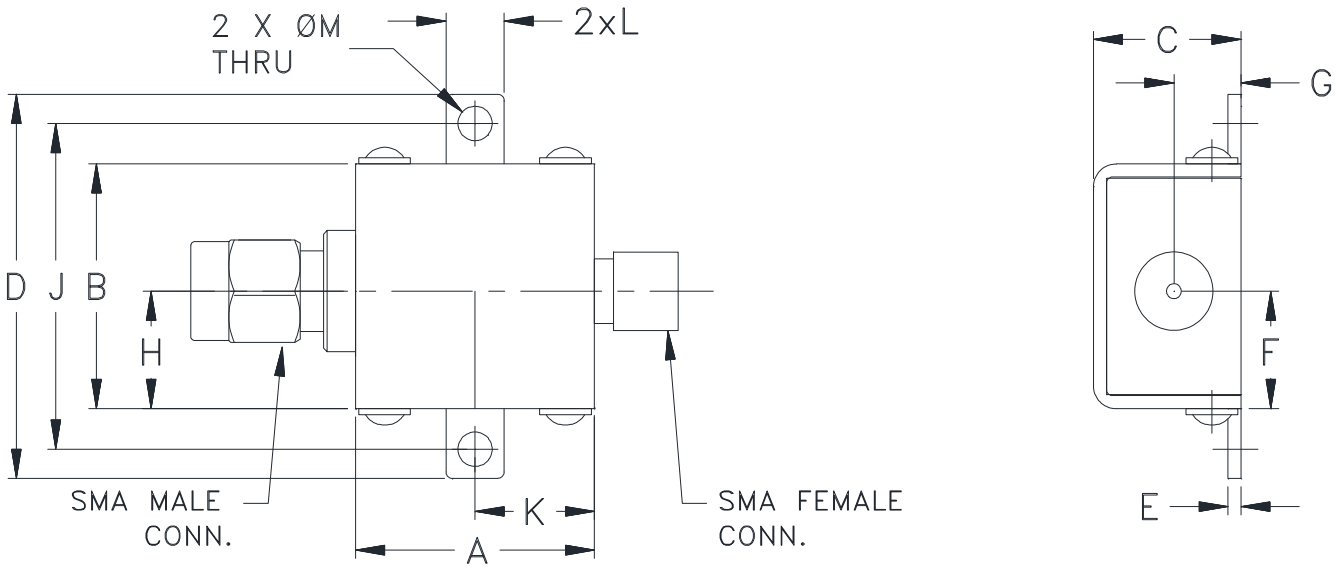
GROUP DELAY vs. TEMPERATURE
INPUT POWER = 0 dBm



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