LUMPED LC COAXIAL

Bandpass Filter

ZX75BP-400-S+

50Ω 292 to 490 MHz SMA-Male to SMA-Female

KEY FEATURES

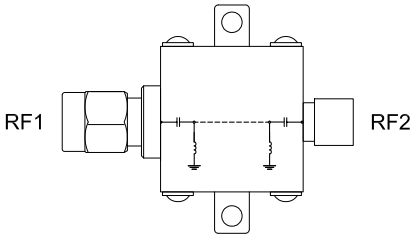
- Insertion Loss, 3dB Max.
- Pass Band Return Loss, 11dB Typ.
- Stop Band Rejection, 30dB Typ.

Generic photo used for illustration purposes only

APPLICATIONS

- Aircraft Communication
- Navigation

FUNCTIONAL DIAGRAM



PRODUCT OVERVIEW

ZX75BP-400-S+ is a 50Ω bandpass filter in a connectorized package covering 292 to 490MHz. 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	—	—	391	—	MHz
	Insertion Loss	F1-F2	292 - 490	—	—	3	dB
	Return Loss	F1-F2	292 - 490	8.1	11.4	—	dB
Stop Band, Lower	Rejection	DC-F3	DC - 200	35	—	—	dB
		F3-F4	200 - 230	20	—	—	
Stop Band, Upper	Rejection	F5-F6	620 - 700	20	—	—	dB
		F6-F7	700 - 2000	35	—	—	
		F7-F8	2000 - 4000	—	30	—	dB

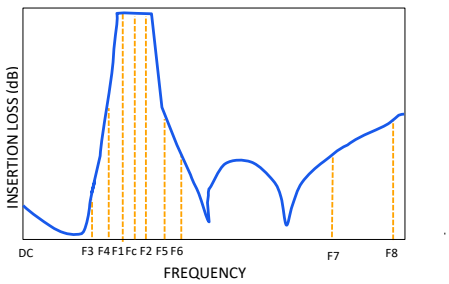
1. This filter is bi-directional RF1 and RF2 ports may be interchanged, see S-Parameters for actual performance.

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-400-S+
EDU4618
URJ
231012

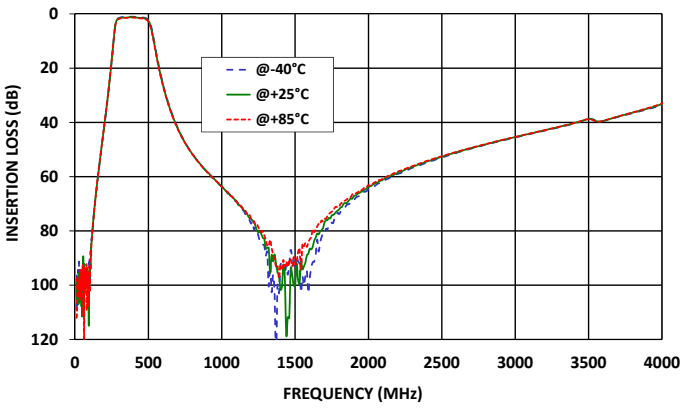
Bandpass Filter

ZX75BP-400-S+

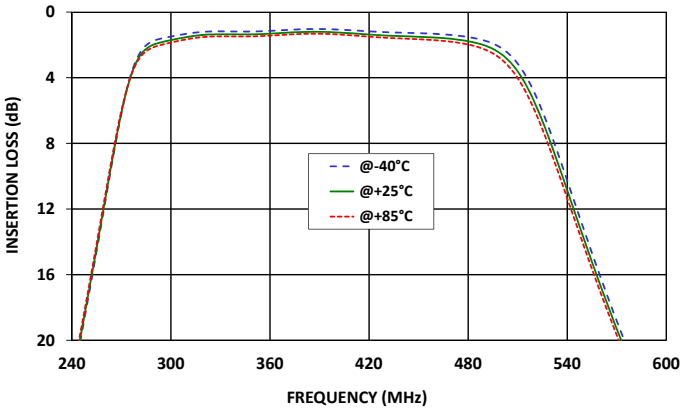
50Ω 292 to 490 MHz SMA-Male to SMA-Female

TYPICAL PERFORMANCE GRAPHS

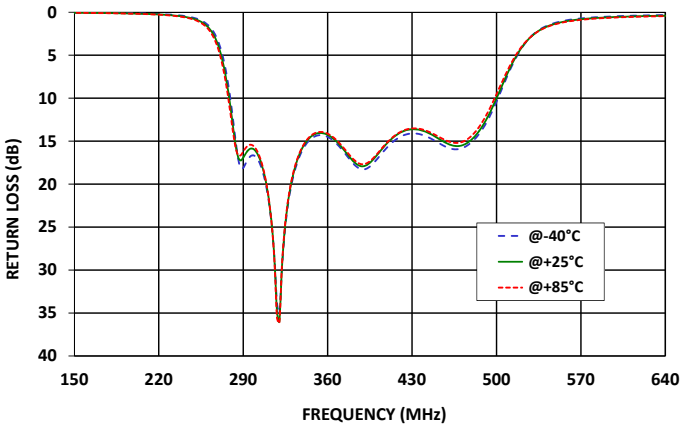
ZX75BP-400-S+
INSERTION LOSS



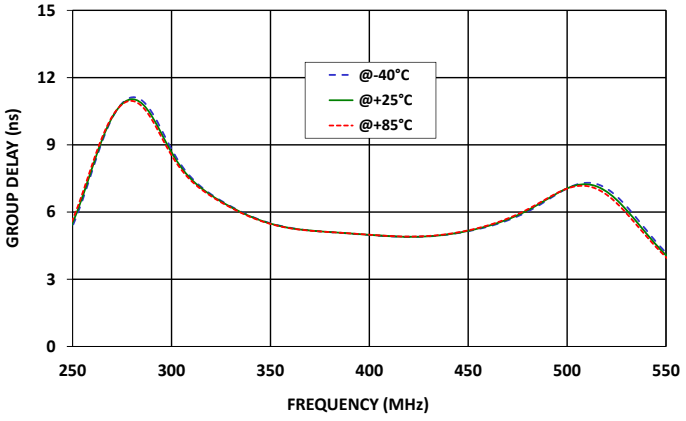
ZX75BP-400-S+
INSERTION LOSS (Zoomed)



ZX75BP-400-S+
RETURN LOSS



ZX75BP-400-S+
GROUP DELAY



Bandpass Filter

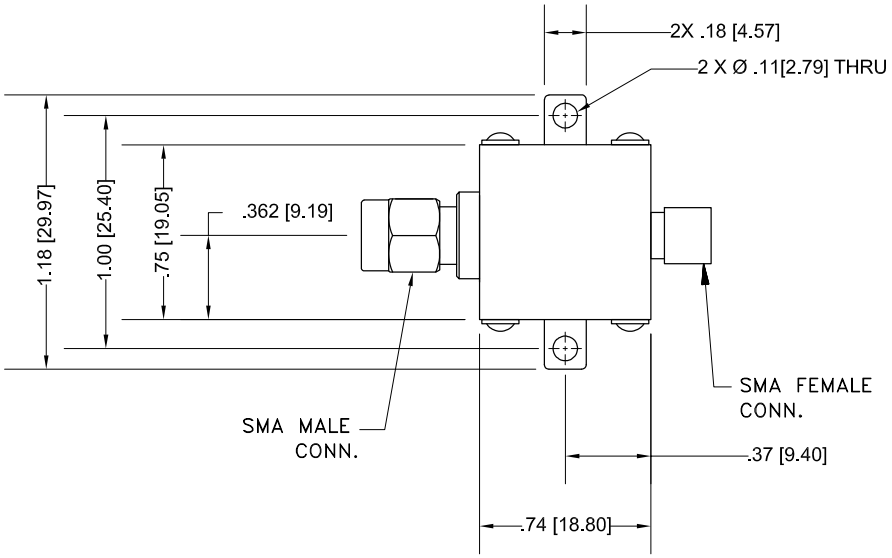
ZX75BP-400-S+

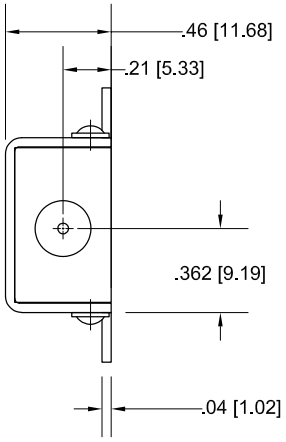
50Ω 292 to 490 MHz SMA-Male to SMA-Female

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-400-S+

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

Bandpass Filter

ZX75BP-400-S+

50Ω 292 to 490 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-400-S+

Typical Performance Data

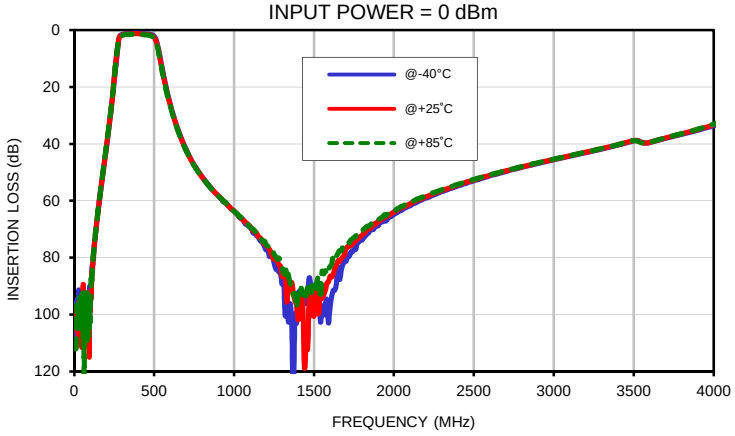
FREQ. (MHz)	INSERTION LOSS (dB)			INPUT RETURN LOSS (dB)			OUTPUT RETURN LOSS (dB)		
	@-40°C	@+25°C	@+85°C	@-40°C	@+25°C	@+85°C	@-40°C	@+25°C	@+85°C
10	108.99	102.18	112.02	0.00	0.00	0.00	0.00	0.00	0.00
20	94.40	100.89	102.67	0.00	0.00	0.00	0.00	0.00	0.00
30	104.61	95.43	98.06	0.00	0.00	0.00	0.00	0.00	0.00
40	104.19	96.30	94.52	0.00	0.00	0.01	0.00	0.00	0.00
50	94.28	104.75	95.81	0.01	0.01	0.01	0.00	0.01	0.01
60	108.41	104.21	96.92	0.01	0.01	0.01	0.00	0.01	0.01
70	98.69	95.61	95.29	0.01	0.01	0.01	0.00	0.01	0.01
80	98.92	99.26	109.46	0.01	0.02	0.02	0.01	0.01	0.01
100	98.72	94.56	102.64	0.02	0.02	0.02	0.01	0.02	0.02
110	86.11	84.66	88.36	0.02	0.03	0.03	0.01	0.02	0.03
120	80.36	78.96	78.54	0.02	0.03	0.04	0.01	0.03	0.03
130	73.41	73.05	72.95	0.03	0.04	0.04	0.02	0.03	0.04
140	67.96	67.77	67.83	0.03	0.05	0.05	0.02	0.04	0.05
150	62.93	62.90	62.53	0.04	0.06	0.06	0.03	0.05	0.06
160	58.35	58.29	58.08	0.05	0.07	0.08	0.04	0.06	0.07
170	54.02	53.84	53.66	0.06	0.08	0.09	0.05	0.07	0.08
180	49.72	49.55	49.34	0.07	0.10	0.11	0.06	0.09	0.10
190	45.47	45.29	45.03	0.09	0.12	0.14	0.08	0.11	0.13
200	41.19	41.01	40.74	0.12	0.15	0.17	0.10	0.13	0.16
210	36.85	36.65	36.40	0.15	0.19	0.22	0.13	0.17	0.20
220	32.36	32.17	31.90	0.20	0.25	0.28	0.19	0.23	0.27
230	27.68	27.49	27.22	0.28	0.34	0.38	0.26	0.32	0.36
244	20.62	20.43	20.15	0.50	0.59	0.66	0.49	0.58	0.65
262	10.51	10.36	10.13	1.65	1.90	2.13	1.72	1.98	2.22
272	5.24	5.24	5.16	4.57	5.14	5.68	4.89	5.56	6.18
280	2.71	2.86	2.96	10.75	11.63	12.39	12.36	13.94	15.34
292	1.66	1.90	2.06	17.61	16.44	15.80	20.02	18.02	16.87
320	1.20	1.39	1.52	35.02	35.96	36.11	19.89	19.07	18.45
350	1.18	1.35	1.48	14.41	14.15	14.04	14.16	13.95	13.80
391	1.03	1.20	1.32	18.25	17.86	17.64	21.97	22.30	22.50
400	1.06	1.23	1.35	17.25	16.78	16.64	19.77	19.64	19.83
430	1.22	1.43	1.56	14.10	13.61	13.52	14.16	13.72	13.68
450	1.29	1.50	1.66	15.04	14.54	14.33	14.30	13.86	13.69
470	1.40	1.63	1.81	15.88	15.54	15.16	15.18	14.96	14.76
490	1.74	2.03	2.27	13.24	12.87	12.36	15.11	14.95	14.52
510	3.14	3.61	4.03	7.10	6.84	6.53	8.50	8.23	7.87
520	4.88	5.45	5.94	4.37	4.28	4.16	5.13	5.05	4.91
540	10.27	10.86	11.35	1.69	1.78	1.82	1.92	2.01	2.07
570	18.82	19.31	19.69	0.72	0.81	0.88	0.76	0.87	0.94
620	29.98	30.33	30.59	0.38	0.45	0.51	0.37	0.46	0.52
650	35.16	35.44	35.66	0.30	0.37	0.42	0.29	0.38	0.43
700	42.02	42.23	42.39	0.23	0.30	0.35	0.22	0.30	0.36
750	47.39	47.49	47.62	0.19	0.26	0.31	0.18	0.26	0.31
800	51.62	51.72	51.75	0.17	0.24	0.29	0.16	0.24	0.29
900	58.26	58.21	58.28	0.14	0.22	0.27	0.14	0.22	0.27
1000	63.66	63.50	63.71	0.13	0.22	0.27	0.13	0.22	0.27
1100	69.25	68.94	69.20	0.13	0.22	0.28	0.12	0.22	0.27
1200	77.28	75.61	75.45	0.14	0.23	0.30	0.12	0.23	0.28
1300	89.24	86.57	83.27	0.14	0.24	0.31	0.13	0.23	0.30
1400	92.50	101.74	92.81	0.15	0.25	0.32	0.13	0.24	0.31
1600	97.25	86.56	83.06	0.17	0.28	0.35	0.15	0.27	0.34
1800	73.80	72.09	70.95	0.19	0.30	0.37	0.17	0.29	0.36
2000	64.63	63.90	63.12	0.21	0.32	0.39	0.18	0.31	0.39
2200	59.00	58.51	58.15	0.23	0.34	0.41	0.20	0.33	0.41
2400	54.74	54.43	54.13	0.24	0.36	0.43	0.22	0.35	0.43
2600	51.23	50.99	50.82	0.26	0.37	0.44	0.23	0.36	0.44
2800	48.20	48.08	47.93	0.27	0.38	0.46	0.24	0.37	0.45
3000	45.57	45.40	45.35	0.28	0.39	0.47	0.24	0.38	0.46
3500	38.85	38.78	38.80	0.31	0.44	0.54	0.25	0.38	0.47
4000	33.63	33.28	33.04	0.33	0.49	0.61	0.22	0.37	0.47

Typical Performance Data

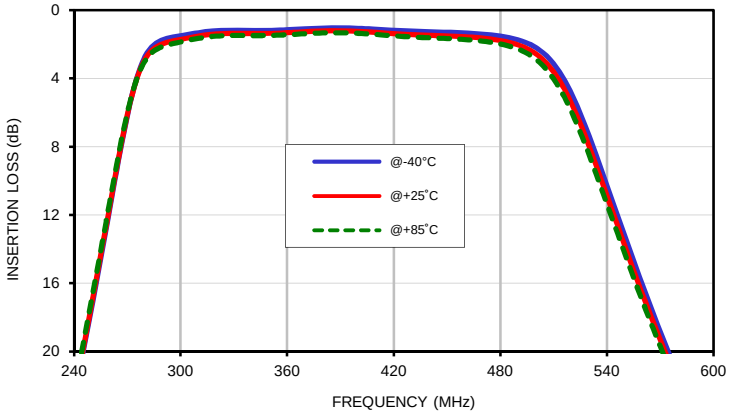
FREQ. (MHz)	GROUP DELAY (nsec)		
	@-40°C	@+25°C	@+85°C
292	10.16	9.98	9.82
296	9.48	9.31	9.16
300	8.80	8.66	8.53
304	8.21	8.10	8.00
308	7.74	7.65	7.57
312	7.36	7.29	7.23
316	7.05	7.00	6.95
320	6.79	6.75	6.71
324	6.56	6.52	6.49
328	6.35	6.32	6.29
332	6.16	6.13	6.10
336	5.98	5.95	5.93
340	5.82	5.80	5.77
344	5.68	5.66	5.64
348	5.55	5.53	5.52
352	5.45	5.43	5.42
356	5.36	5.35	5.34
360	5.30	5.28	5.27
364	5.24	5.23	5.22
368	5.20	5.19	5.18
372	5.16	5.16	5.15
376	5.13	5.13	5.13
380	5.10	5.11	5.10
384	5.08	5.08	5.08
388	5.05	5.06	5.06
391	5.03	5.04	5.04
396	5.00	5.01	5.01
400	4.97	4.98	4.99
406	4.94	4.94	4.95
412	4.91	4.91	4.92
418	4.89	4.90	4.91
424	4.89	4.90	4.91
430	4.91	4.92	4.93
436	4.96	4.96	4.98
442	5.02	5.03	5.05
448	5.11	5.13	5.15
454	5.22	5.24	5.26
460	5.35	5.38	5.41
470	5.63	5.67	5.71
480	6.02	6.07	6.12
490	6.53	6.58	6.61

Typical Performance Curves

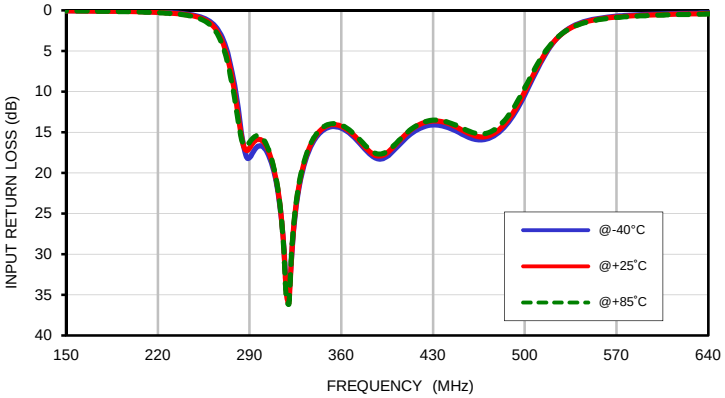
INSERTION LOSS vs. TEMPERATURE
INPUT POWER = 0 dBm



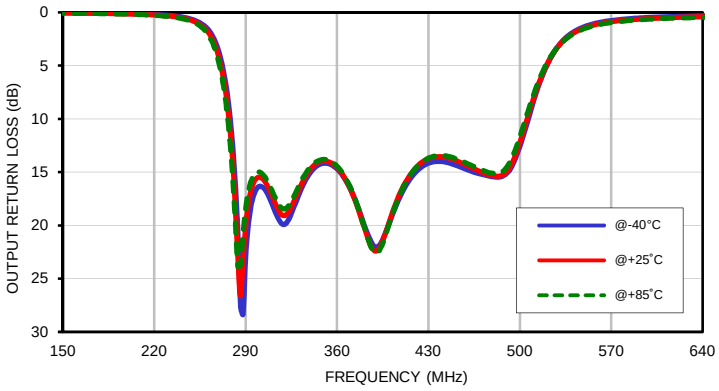
INSERTION LOSS vs. TEMPERATURE (Zoomed)
INPUT POWER = 0 dBm



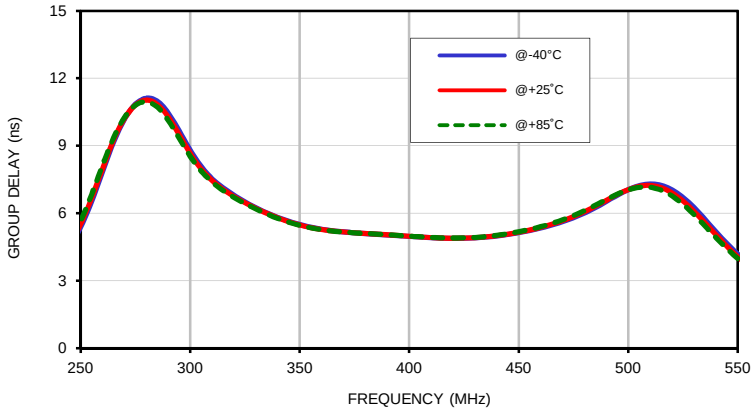
INPUT RETURN LOSS vs. TEMPERATURE
INPUT POWER = 0 dBm



OUTPUT RETURN LOSS vs. TEMPERATURE
INPUT POWER = 0 dBm



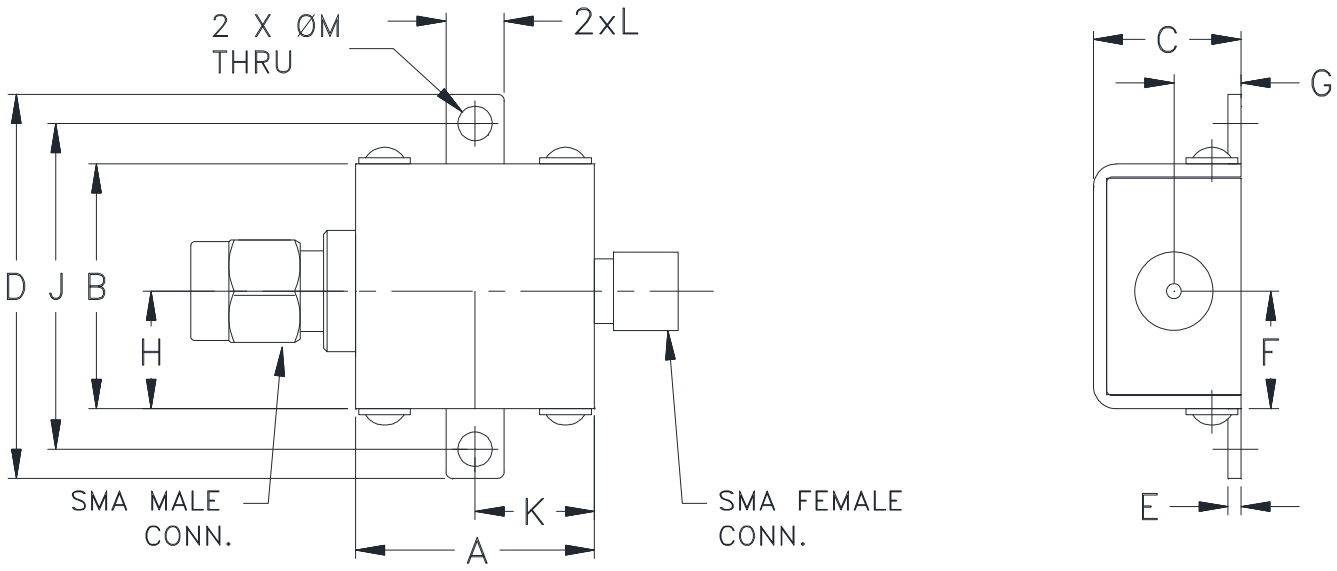
GROUP DELAY vs. TEMPERATURE
INPUT POWER = 0 dBm



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