LUMPED LC COAXIAL

Bandpass Filter

ZX75BP-440-S+

50Ω 410 to 470 MHz SMA-Male to SMA-Female

KEY FEATURES

- Insertion Loss, 2.1dB Typ.
- Pass Band Return Loss, 14dB Typ.
- Stop Band Rejection, 25dB Typ.

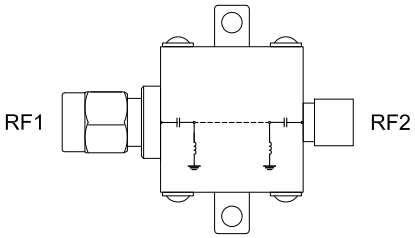


Generic photo used for illustration purposes only

APPLICATIONS

- Harmonic Rejection
- Personal and Home Communication

FUNCTIONAL DIAGRAM



PRODUCT OVERVIEW

ZX75BP-440-S+ is a 50Ω bandpass filter in a connectorized package covering 410 to 470MHz. 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	—	—	440	—	MHz
	Insertion Loss	F1-F2	410 - 470	—	2.1	3	dB
	Return Loss	F1-F2	410 - 470	9.5	13.8	—	dB
Stop Band, Lower	Rejection	DC-F3	DC - 200	30	—	—	dB
		F3-F4	200 - 320	20	—	—	
Stop Band, Upper	Rejection	F5-F6	650 - 850	20	—	—	dB
		F6-F7	850 - 1500	30	—	—	
		F7-F8	1500 - 2500	—	25	—	
Maximum Deviation from Linear Phase		—	Fc ± 30	—	—	±6	deg

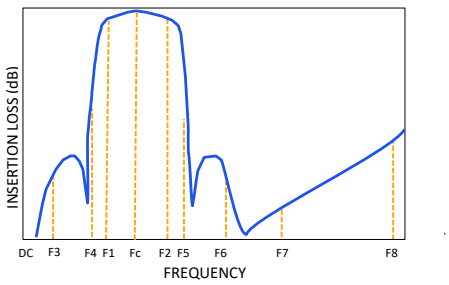
1. This filter is bi-directional RF1 and RF2 ports may be interchanged, see S-Parameters for actual performance.

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-440-S+
EDU4613
URJ
231012

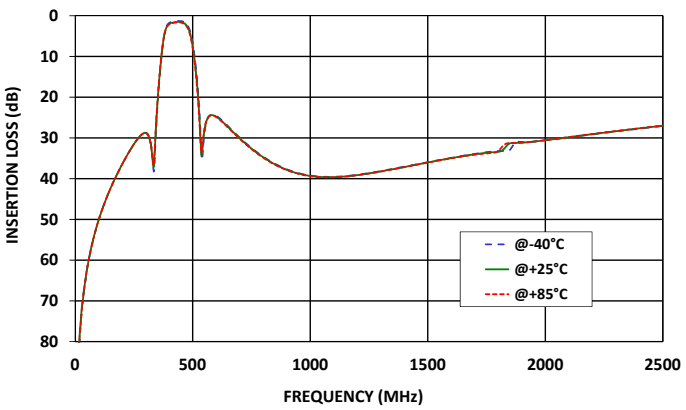
Bandpass Filter

ZX75BP-440-S+

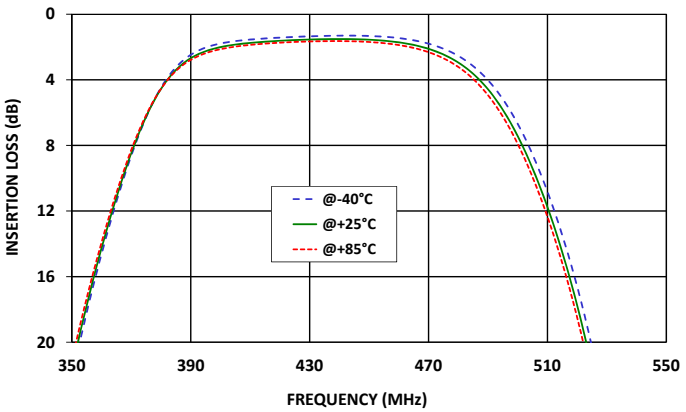
50Ω 410 to 470 MHz SMA-Male to SMA-Female

TYPICAL PERFORMANCE GRAPHS

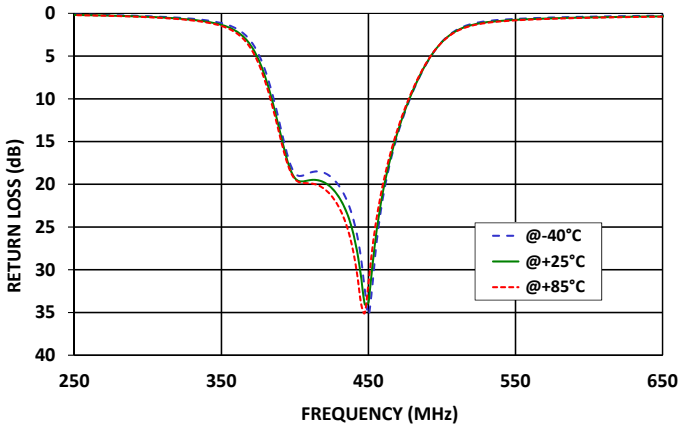
ZX75BP-440-S+
INSERTION LOSS



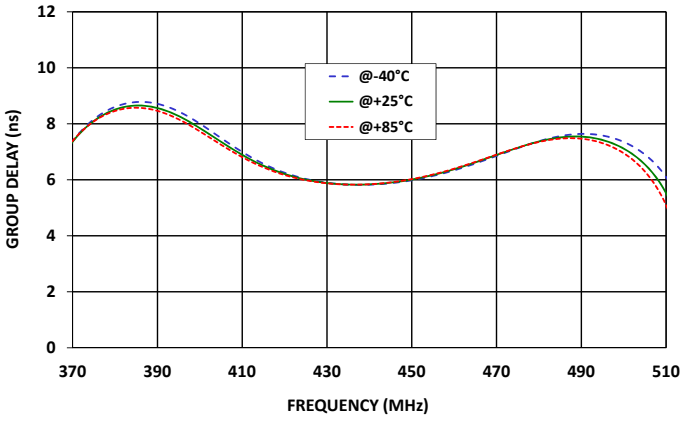
ZX75BP-440-S+
INSERTION LOSS (Zoomed)



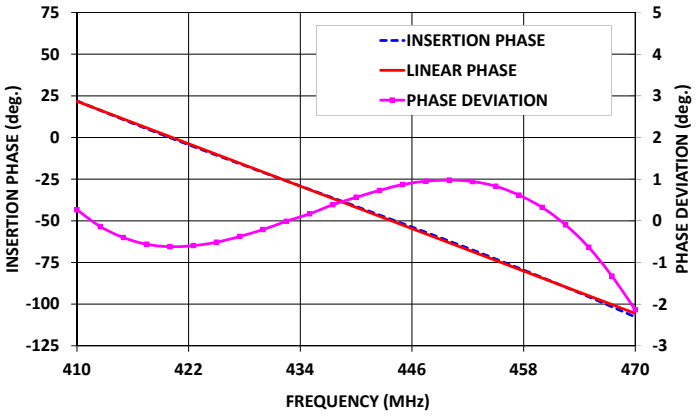
ZX75BP-440-S+
RETURN LOSS



ZX75BP-440-S+
GROUP DELAY



ZX75BP-440-S+
INSERTION PHASE &
DEVIATION FROM LINEAR PHASE AT 25°C



Bandpass Filter

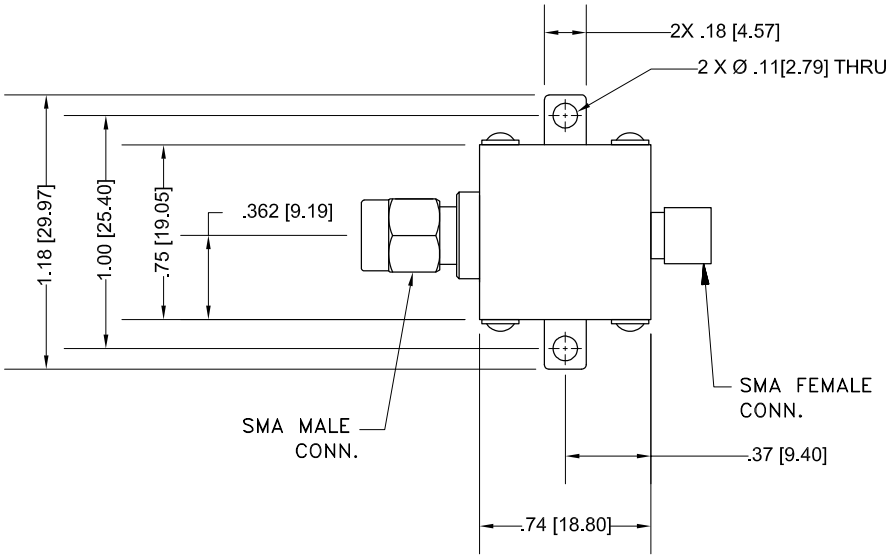
ZX75BP-440-S+

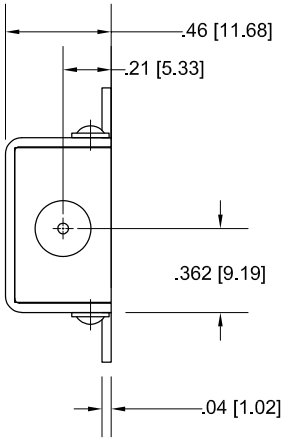
50Ω 410 to 470 MHz SMA-Male to SMA-Female

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-440-S+

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

Bandpass Filter

ZX75BP-440-S+

50Ω 410 to 470 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-440-S+

Typical Performance Data

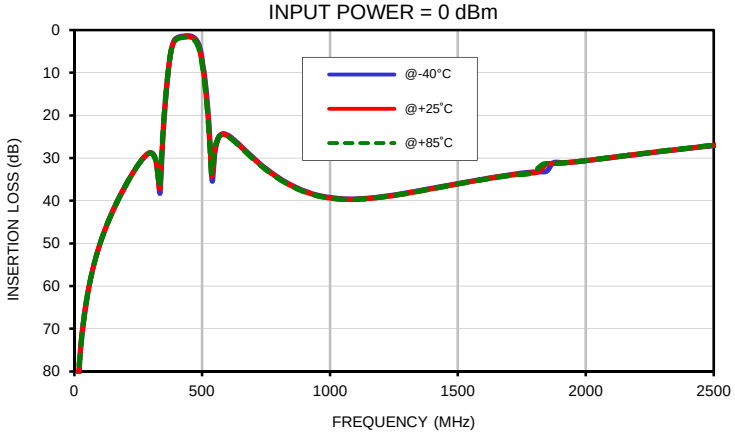
FREQ.	INSERTION LOSS			INPUT RETURN LOSS			OUTPUT RETURN LOSS		
(MHz)	(dB)			(dB)			(dB)		
	@-40°C	@+25°C	@+85°C	@-40°C	@+25°C	@+85°C	@-40°C	@+25°C	@+85°C
10	93.13	89.95	88.22	0.00	0.00	0.00	0.01	0.02	0.03
20	79.60	77.86	77.42	0.00	0.00	0.00	0.02	0.03	0.03
30	71.21	70.99	71.01	0.00	0.00	0.00	0.02	0.03	0.04
40	66.38	66.26	66.43	0.00	0.01	0.01	0.03	0.04	0.04
50	62.45	62.29	62.58	0.01	0.01	0.01	0.03	0.04	0.05
60	59.32	59.31	59.24	0.01	0.01	0.01	0.04	0.05	0.06
70	56.65	56.58	56.58	0.01	0.01	0.01	0.04	0.06	0.06
80	54.24	54.21	54.21	0.01	0.02	0.02	0.04	0.06	0.07
90	52.08	52.09	52.04	0.01	0.02	0.02	0.05	0.07	0.07
100	50.19	50.17	50.15	0.01	0.02	0.02	0.06	0.07	0.08
110	48.45	48.38	48.40	0.02	0.03	0.03	0.06	0.08	0.08
120	46.80	46.77	46.77	0.02	0.03	0.04	0.06	0.08	0.09
140	43.83	43.80	43.80	0.02	0.04	0.05	0.08	0.10	0.10
160	41.17	41.16	41.14	0.03	0.05	0.06	0.09	0.11	0.12
180	38.74	38.73	38.72	0.05	0.07	0.08	0.11	0.13	0.14
200	36.49	36.47	36.48	0.06	0.09	0.10	0.12	0.15	0.16
220	34.39	34.37	34.37	0.09	0.12	0.14	0.15	0.18	0.19
240	32.45	32.43	32.42	0.12	0.16	0.18	0.18	0.21	0.23
260	30.71	30.69	30.69	0.16	0.21	0.24	0.21	0.25	0.28
280	29.31	29.32	29.32	0.23	0.29	0.32	0.26	0.31	0.34
300	28.73	28.77	28.82	0.33	0.41	0.45	0.33	0.40	0.44
320	30.74	30.91	31.07	0.50	0.60	0.66	0.45	0.55	0.60
350	22.24	21.66	21.13	1.14	1.34	1.48	0.97	1.16	1.31
365	11.42	11.16	10.88	2.35	2.74	3.01	2.14	2.52	2.83
380	4.47	4.55	4.54	6.79	7.55	8.10	6.89	7.71	8.44
390	2.47	2.68	2.78	13.16	13.98	14.52	15.22	16.45	17.73
410	1.54	1.75	1.87	18.66	19.52	19.89	20.18	20.88	21.06
415	1.48	1.68	1.79	18.49	19.50	20.07	18.77	19.54	19.94
420	1.43	1.62	1.73	18.67	19.79	20.55	18.31	19.13	19.68
430	1.35	1.54	1.66	20.20	21.52	22.72	19.10	19.96	20.74
440	1.31	1.51	1.64	24.27	25.99	28.18	21.86	22.46	23.21
450	1.33	1.55	1.69	35.28	33.79	31.57	24.60	23.65	23.12
460	1.45	1.71	1.88	21.44	20.74	19.85	19.59	18.78	18.13
465	1.59	1.87	2.06	17.27	16.87	16.32	16.59	16.09	15.65
470	1.80	2.11	2.31	14.08	13.82	13.45	14.01	13.72	13.44
480	2.54	2.95	3.21	9.26	9.11	8.94	9.86	9.80	9.73
495	5.18	5.83	6.25	4.39	4.37	4.36	5.43	5.55	5.63
505	8.56	9.40	9.94	2.52	2.59	2.63	3.55	3.74	3.85
525	20.32	21.62	22.47	1.06	1.18	1.26	1.74	1.93	2.04
650	27.10	27.30	27.43	0.27	0.35	0.39	0.23	0.28	0.31
670	28.24	28.44	28.57	0.24	0.32	0.36	0.19	0.24	0.26
690	29.36	29.56	29.68	0.22	0.30	0.33	0.16	0.21	0.23
710	30.44	30.62	30.75	0.20	0.28	0.32	0.14	0.18	0.21
730	31.48	31.65	31.77	0.19	0.27	0.30	0.13	0.17	0.19
750	32.45	32.60	32.73	0.18	0.25	0.29	0.12	0.16	0.18
770	33.37	33.51	33.63	0.17	0.25	0.28	0.11	0.14	0.16
790	34.20	34.35	34.46	0.16	0.24	0.28	0.10	0.14	0.16
810	34.98	35.12	35.23	0.16	0.24	0.27	0.09	0.13	0.15
830	35.70	35.83	35.93	0.15	0.23	0.27	0.09	0.13	0.14
850	36.35	36.49	36.57	0.15	0.22	0.26	0.08	0.12	0.14
900	37.70	37.81	37.89	0.15	0.22	0.26	0.08	0.11	0.13
950	38.63	38.74	38.82	0.14	0.22	0.26	0.07	0.11	0.13
1000	39.23	39.34	39.39	0.14	0.22	0.26	0.07	0.11	0.12
1100	39.55	39.64	39.66	0.15	0.22	0.27	0.07	0.11	0.12
1300	38.14	38.21	38.23	0.16	0.23	0.28	0.07	0.11	0.13
1500	35.95	36.03	36.05	0.18	0.24	0.28	0.06	0.12	0.14
1600	34.89	34.95	35.00	0.18	0.24	0.28	0.07	0.12	0.15
1800	33.22	33.41	33.19	0.19	0.25	0.29	0.08	0.18	0.26
2000	30.60	30.58	30.55	0.20	0.25	0.28	0.08	0.15	0.19
2500	27.06	26.99	26.95	0.19	0.25	0.29	0.10	0.21	0.27

Typical Performance Data

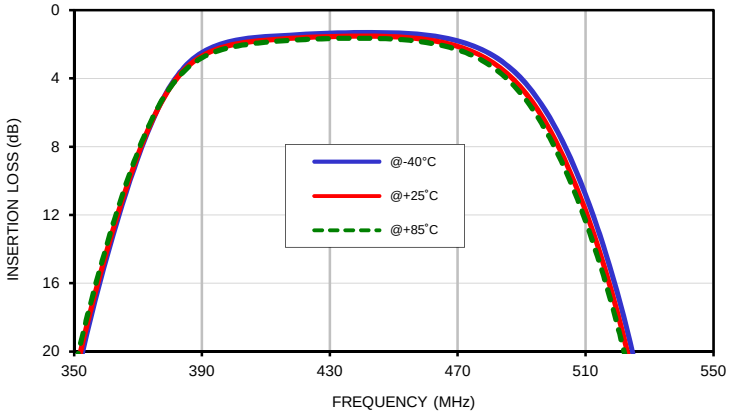
FREQ. (MHz)	GROUP DELAY (nsec)		
	@-40°C	@+25°C	@+85°C
390.0	8.71	8.56	8.46
392.5	8.60	8.44	8.33
395.0	8.44	8.28	8.16
397.5	8.24	8.07	7.96
400.0	8.01	7.85	7.73
402.5	7.75	7.60	7.49
405.0	7.49	7.36	7.25
407.5	7.24	7.12	7.02
410.0	6.99	6.89	6.81
412.5	6.77	6.68	6.61
415.0	6.57	6.50	6.45
417.5	6.40	6.34	6.30
420.0	6.25	6.21	6.17
422.5	6.13	6.10	6.07
425.0	6.03	6.01	5.98
427.5	5.95	5.94	5.92
430.0	5.89	5.89	5.87
432.5	5.85	5.85	5.84
435.0	5.83	5.83	5.83
437.5	5.82	5.83	5.83
440.0	5.82	5.84	5.84
442.5	5.84	5.86	5.87
445.0	5.88	5.90	5.91
447.5	5.92	5.95	5.96
450.0	5.98	6.01	6.02
452.5	6.05	6.08	6.10
455.0	6.14	6.17	6.19
457.5	6.23	6.27	6.29
460.0	6.34	6.38	6.40
462.5	6.46	6.50	6.52
465.0	6.58	6.62	6.64
467.5	6.72	6.75	6.77
470.0	6.85	6.89	6.90
472.5	6.99	7.02	7.03
475.0	7.13	7.15	7.15
477.5	7.26	7.26	7.26
480.0	7.38	7.37	7.35
482.5	7.48	7.45	7.42
485.0	7.56	7.51	7.47
487.5	7.62	7.54	7.49
490.0	7.64	7.54	7.47

Typical Performance Curves

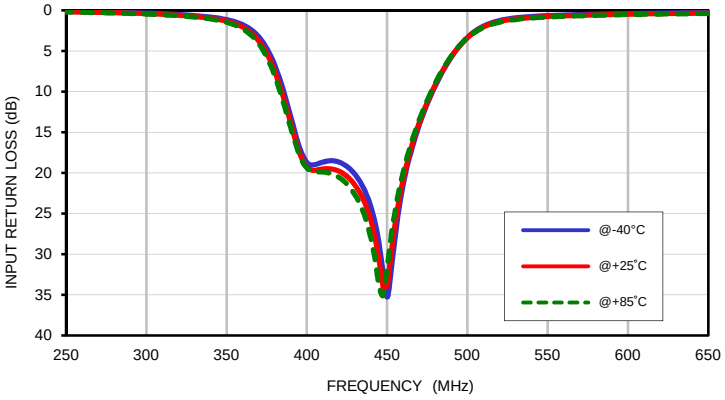
INSERTION LOSS vs. TEMPERATURE
INPUT POWER = 0 dBm



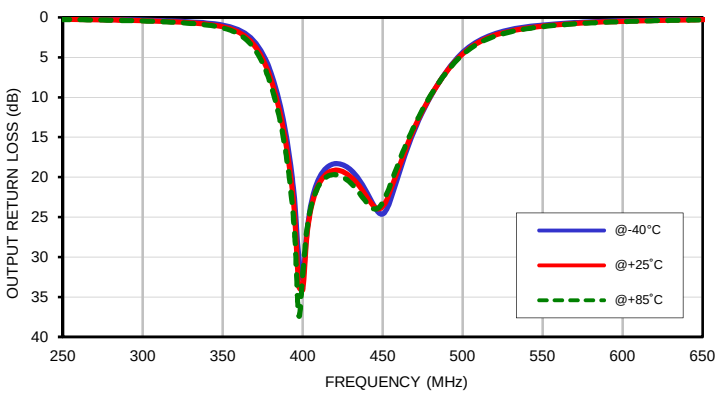
INSERTION LOSS vs. TEMPERATURE (Zoomed)
INPUT POWER = 0 dBm



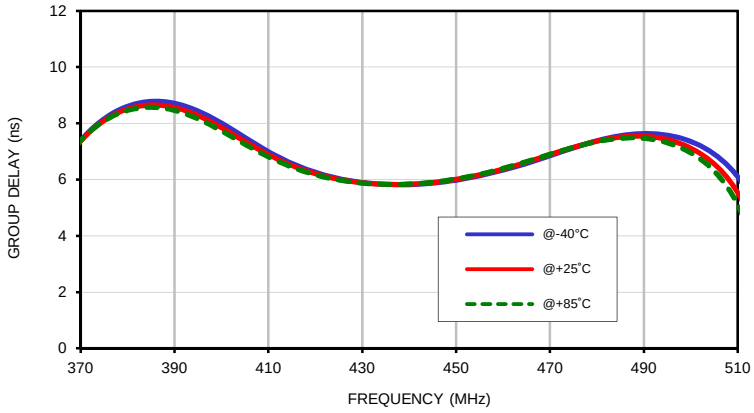
INPUT RETURN LOSS vs. TEMPERATURE
INPUT POWER = 0 dBm



OUTPUT RETURN LOSS vs. TEMPERATURE
INPUT POWER = 0 dBm



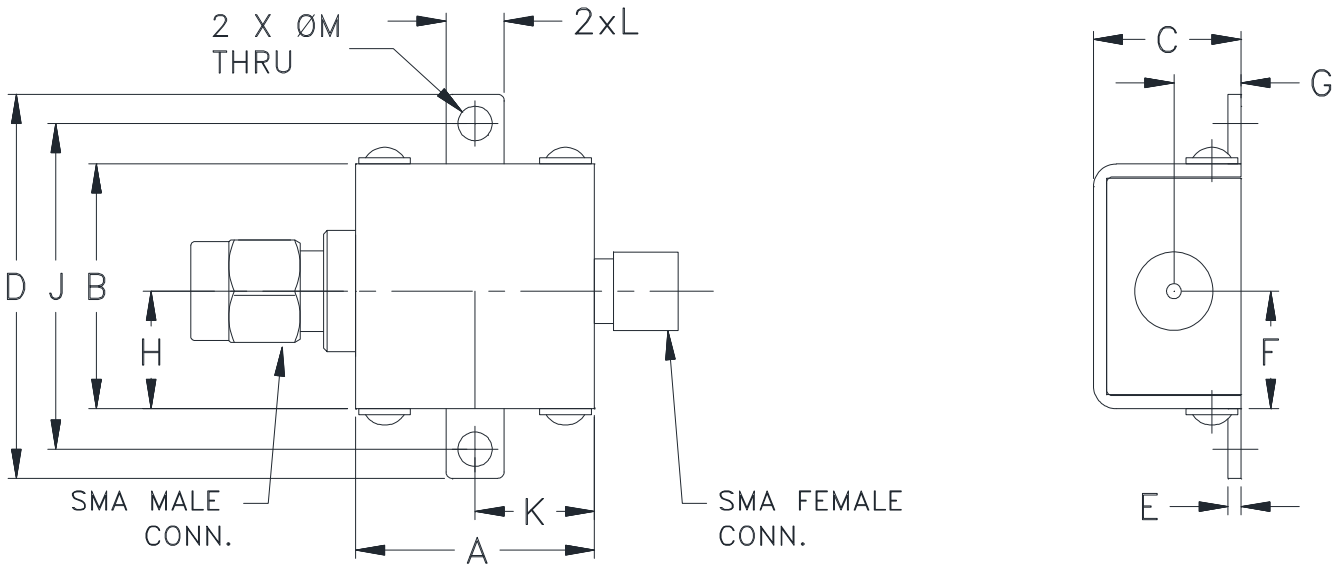
GROUP DELAY vs. TEMPERATURE
INPUT POWER = 0 dBm



Case Style 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.

Mini-Circuits®
INTERNET http://www.minicircuits.com
P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661
Distribution Centers NORTH AMERICA 800-654-7949 • 417-335-5935 • Fax 417-335-5945 • EUROPE 44-1252-832600 • Fax 44-1252-837010
Mini-Circuits ISO 9001 & ISO 14001 Certified

This document and its contents are the property of Mini-Circuits.

Mini-Circuits

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

This document and its contents are the property of Mini-Circuits.