Coaxial

Bandpass Filter

ZX75BP-1500-S+

50Ω 1350 to 1650 MHz

Generic photo used for illustration purposes only
CASE STYLE: KE1467

The Big Deal

- Fast roll-off on the upper sideband
- Good Matching and low loss in the pass band
- Connectorized package

Product Overview

ZX75BP-1500-S+ is a wideband bandpass filter in a rugged connectorized package covering 1350 to 1650 MHz. This is designed for asymmetric rejection applications such as super-heterodyne receivers. By having asymmetric band, faster roll-off at upper side band is achieved in a comparatively smaller package and lower pass band insertion loss. It has repeatable performance across lots and consistent performance across temperature

Key Features

Feature	Advantages
Fast roll-off on the upper side band	Wide bandwidth filter with fast-roll off on the upper side band, which increases selectivity on the adjacent channel.
Good matching and low loss in pass band	This filter has good matching and low loss in the pass band
Connectorized package	Connectorized package is easy to interface with other devices and well suited for test setups.
High power handling	This model uses high Q capacitors and high current handling inductors which is well suited for high power applications.

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CASE STYLE: KE1467

Connectors	Model
SMA-M\F	ZX75BP-1500-S+

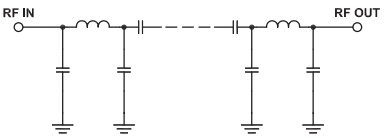
Features

- Fast roll-off on the upper side band
- Good matching in the pass band
- Connectorized package

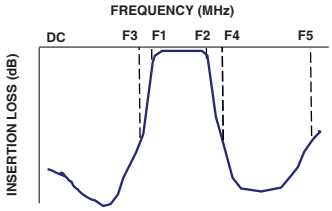
Applications

- Aviation and Aeronautical
- Digital audio broadcasting
- Maritime
- Mobile satellite
- Radio astronomy
- Wireless medical telemetry

Functional Schematic



Typical Frequency Response



+RoHS Compliant

The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications

Electrical Specifications at 25°C

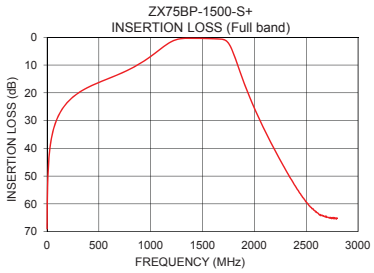
Parameter		F#	Frequency (MHz)	Min.	Typ.	Max.	Unit
Pass Band	Center Frequency	-	-	-	1500	-	MHz
	Insertion Loss	F1-F2	1350-1650	-	0.7	2.0	dB
	VSWR	F1-F2	1350-1650	-	1.2	1.78	:1
Stop Band, Lower	Insertion Loss	DC-F3	DC - 85	20	30	-	dB
	VSWR	DC-F3	DC - 85	-	20	-	:1
Stop Band, Upper	Insertion Loss	F4-F5	2030-2800	20	29	-	dB
	VSWR	F4-F5	2030-2800	-	20	-	:1

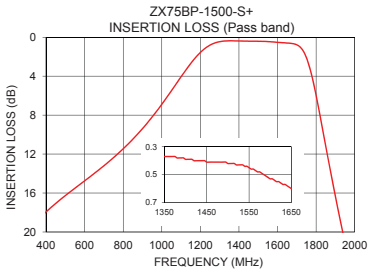
Maximum Ratings	
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power Input	6.3 W max.

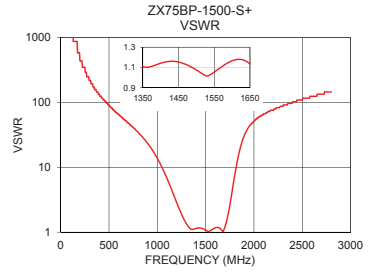
Permanent damage may occur if any of these limits are exceeded.

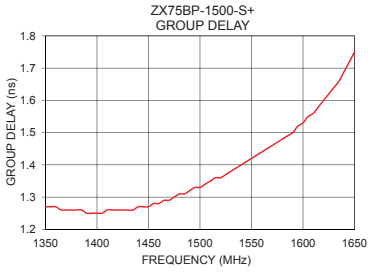
Typical Performance Data at 25°C

Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)	Frequency (MHz)	Group Delay (nsec)
1	68.96	1737.18	1350	1.27
5	55.03	1737.18	1380	1.26
85	30.47	1737.18	1400	1.25
290	20.37	248.17	1420	1.26
500	16.27	91.43	1440	1.27
975	7.56	15.81	150	0.66
1120	3.51	5.72	1460	1.28
1200	1.57	2.86	1480	1.31
1350	0.37	1.11	1490	1.32
1500	0.42	1.07	1500	1.33
1650	0.60	1.13	1520	1.36
1770	3.36	3.92	1530	1.38
1810	6.98	9.08	1540	1.40
1880	14.32	25.56	1560	1.44
1940	20.20	40.41	1580	1.48
2030	28.02	56.04	1600	1.53
2065	30.83	62.05	1610	1.56
2200	40.82	75.53	1620	1.60
2550	61.35	115.81	1630	1.64
2800	65.21	144.77	1650	1.75









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.

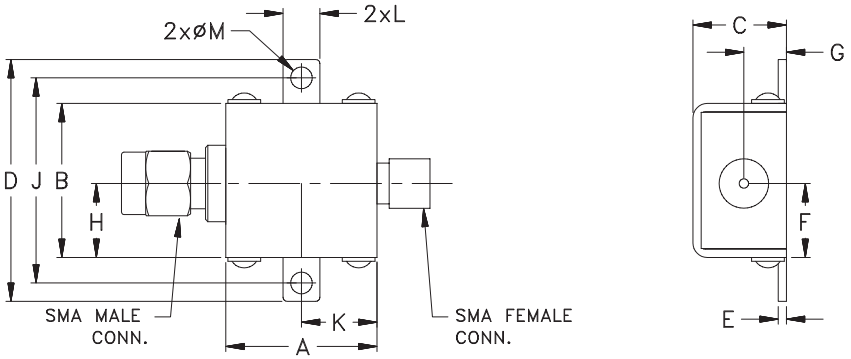
B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.

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/MCLStore/terms.jsp

Coaxial Connections

INPUT	SMA-MALE
OUTPUT	SMA-FEMALE

Outline Drawing



Outline Dimensions (inch / mm)

A	B	C	D	E	F	G
.74	**.75**	**.46**	**1.18**	**.04**	**.362**	**.21**
18.80	19.05	11.68	29.97	1.02	9.19	5.33

H	J	K	L	M	Wt.
.362	**1.00**	**.37**	**.18**	**.11**	grams
9.19	25.40	9.40	4.57	2.79	24.4

Note: Please refer to case style drawing for details

Coaxial Band Pass Filter ZX75BP-1500-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
1	68.98	68.96	68.93	0.00	0.00	0.00	0.00	0.00	0.00
10	49.02	48.99	48.97	0.00	0.00	0.00	0.00	0.00	0.00
30	39.49	39.47	39.45	0.00	0.00	0.00	0.00	0.00	0.00
55	34.26	34.21	34.17	0.00	0.00	0.00	0.00	0.00	0.00
85	30.57	30.47	30.41	0.00	0.01	0.01	0.00	0.01	0.01
200	23.39	23.30	23.20	0.02	0.04	0.04	0.01	0.03	0.03
300	20.02	20.11	20.11	0.06	0.08	0.08	0.04	0.05	0.06
400	17.83	17.95	18.03	0.11	0.13	0.13	0.08	0.10	0.10
450	16.98	17.07	17.16	0.13	0.16	0.16	0.10	0.12	0.12
500	16.20	16.27	16.34	0.16	0.19	0.19	0.12	0.14	0.15
600	14.71	14.75	14.79	0.23	0.27	0.26	0.18	0.20	0.22
700	13.18	13.21	13.24	0.32	0.36	0.36	0.26	0.29	0.30
800	11.44	11.46	11.47	0.45	0.50	0.50	0.39	0.42	0.44
900	9.36	9.39	9.38	0.69	0.75	0.76	0.63	0.67	0.69
935	8.53	8.56	8.53	0.83	0.88	0.90	0.76	0.81	0.84
1000	6.86	6.89	6.85	1.21	1.27	1.31	1.15	1.21	1.25
1050	5.48	5.50	5.44	1.69	1.77	1.84	1.65	1.71	1.78
1100	4.04	4.06	4.00	2.49	2.60	2.70	2.47	2.56	2.66
1135	3.08	3.09	3.05	3.35	3.49	3.64	3.35	3.47	3.60
1175	2.07	2.09	2.06	4.81	5.01	5.22	4.85	5.02	5.22
1200	1.54	1.57	1.55	6.07	6.33	6.58	6.15	6.38	6.61
1235	0.95	1.00	1.00	8.47	8.82	9.16	8.63	8.96	9.28
1255	0.71	0.76	0.78	10.23	10.68	11.05	10.49	10.91	11.29
1300	0.39	0.46	0.50	15.75	16.50	16.98	16.48	17.28	17.86
1350	0.29	0.37	0.42	24.72	25.66	25.42	28.22	30.07	29.78
1385	0.29	0.38	0.43	24.91	24.74	24.34	25.79	25.45	24.99
1405	0.30	0.39	0.44	23.40	23.28	23.20	23.50	23.31	23.16
1500	0.32	0.42	0.48	27.14	28.88	29.64	26.92	27.99	27.71
1540	0.33	0.44	0.50	50.86	36.42	31.65	41.99	33.43	29.44
1585	0.39	0.50	0.57	24.91	23.73	22.96	24.20	23.13	22.38
1600	0.41	0.53	0.60	23.06	22.32	21.81	22.34	21.72	21.23
1650	0.47	0.60	0.67	23.62	23.99	24.42	22.08	22.47	22.62
1665	0.49	0.62	0.71	27.40	28.91	30.37	24.19	25.10	25.19
1675	0.51	0.65	0.74	33.36	39.46	42.96	26.04	27.05	26.36
1700	0.62	0.78	0.90	21.51	20.48	19.31	20.47	19.61	18.43
1720	0.86	1.07	1.23	13.91	13.33	12.67	13.70	13.10	12.39
1750	1.82	2.11	2.36	7.32	7.06	6.75	7.24	6.94	6.61
1765	2.66	3.01	3.30	5.22	5.07	4.86	5.14	4.95	4.74
1780	3.76	4.14	4.48	3.70	3.63	3.51	3.61	3.51	3.38
1800	5.55	5.97	6.33	2.35	2.36	2.32	2.26	2.24	2.19
1820	7.58	8.02	8.38	1.54	1.59	1.60	1.46	1.48	1.47
1900	15.93	16.35	16.67	0.48	0.56	0.61	0.40	0.46	0.50
1940	19.80	20.20	20.49	0.35	0.43	0.48	0.27	0.34	0.37
2005	25.62	25.95	26.22	0.25	0.33	0.39	0.18	0.25	0.28
2030	27.72	28.02	28.28	0.22	0.31	0.36	0.17	0.23	0.26
2055	29.76	30.03	30.29	0.21	0.29	0.35	0.15	0.21	0.24
2080	31.74	32.00	32.25	0.19	0.28	0.33	0.14	0.20	0.23
2100	33.28	33.54	33.79	0.18	0.26	0.32	0.13	0.20	0.23
2190	39.85	40.11	40.38	0.14	0.23	0.29	0.11	0.17	0.20
2200	40.57	40.82	41.07	0.14	0.23	0.29	0.11	0.17	0.19
2300	47.33	47.63	47.85	0.11	0.20	0.26	0.09	0.15	0.18
2340	49.92	50.24	50.47	0.10	0.19	0.25	0.09	0.15	0.17
2400	53.61	53.92	54.13	0.08	0.17	0.24	0.09	0.15	0.17
2500	59.01	59.27	59.53	0.06	0.16	0.22	0.07	0.14	0.16
2515	59.62	60.01	60.17	0.06	0.15	0.22	0.07	0.14	0.16
2600	62.57	63.06	62.99	0.04	0.14	0.20	0.07	0.14	0.16
2630	63.42	64.00	63.84	0.04	0.14	0.21	0.06	0.13	0.16
2645	63.82	64.14	64.11	0.04	0.14	0.20	0.06	0.13	0.15
2700	64.68	64.79	64.73	0.03	0.13	0.20	0.06	0.13	0.16
2800	65.03	65.21	65.48	0.01	0.12	0.18	0.05	0.13	0.15

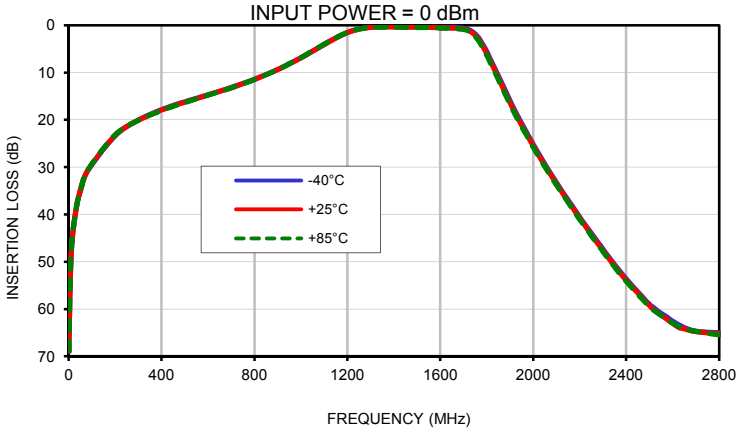
Typical Performance Data

FREQ. (MHz)	GROUP DELAY (nsec)		
	@-40°C	@+25°C	@+85°C
1350	1.29	1.27	1.27
1355	1.28	1.27	1.26
1360	1.28	1.27	1.26
1365	1.28	1.26	1.26
1370	1.27	1.26	1.26
1375	1.27	1.26	1.25
1380	1.27	1.26	1.25
1385	1.27	1.26	1.25
1390	1.27	1.25	1.25
1395	1.27	1.25	1.25
1400	1.27	1.25	1.25
1405	1.26	1.25	1.25
1410	1.27	1.26	1.25
1415	1.27	1.26	1.25
1420	1.27	1.26	1.25
1425	1.27	1.26	1.25
1430	1.27	1.26	1.26
1435	1.27	1.26	1.26
1440	1.27	1.27	1.26
1445	1.28	1.27	1.27
1450	1.28	1.27	1.27
1455	1.29	1.28	1.28
1460	1.29	1.28	1.28
1465	1.30	1.29	1.29
1470	1.30	1.29	1.29
1475	1.31	1.30	1.30
1480	1.31	1.31	1.31
1485	1.32	1.31	1.31
1490	1.33	1.32	1.32
1495	1.33	1.33	1.33
1500	1.34	1.33	1.33
1505	1.35	1.34	1.34
1510	1.35	1.35	1.35
1515	1.36	1.36	1.35
1520	1.37	1.36	1.36
1525	1.38	1.37	1.37
1535	1.40	1.39	1.39
1540	1.40	1.40	1.40
1545	1.41	1.41	1.41
1550	1.42	1.42	1.42
1555	1.43	1.43	1.43
1560	1.44	1.44	1.44
1565	1.45	1.45	1.45
1570	1.46	1.46	1.46
1575	1.47	1.47	1.47
1580	1.48	1.48	1.48
1585	1.50	1.49	1.49
1590	1.51	1.50	1.51
1595	1.52	1.52	1.52
1600	1.53	1.53	1.53
1605	1.55	1.55	1.55
1610	1.57	1.56	1.57
1615	1.58	1.58	1.58
1620	1.60	1.60	1.60
1625	1.62	1.62	1.63
1630	1.64	1.64	1.65
1635	1.66	1.66	1.67
1640	1.69	1.69	1.70
1645	1.71	1.72	1.73
1650	1.74	1.75	1.76

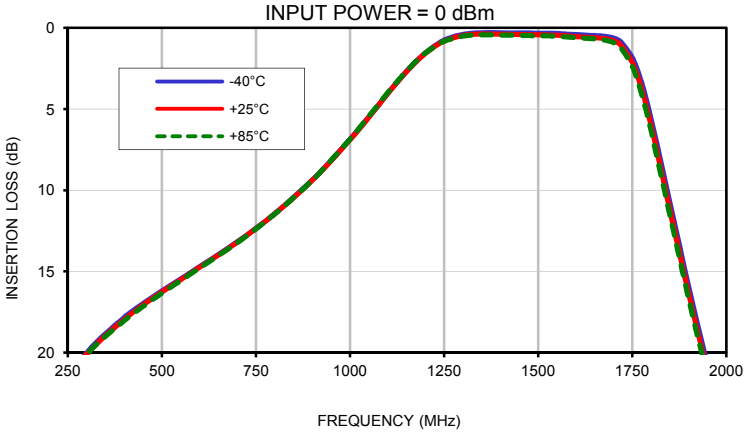
Coaxial Band Pass Filter ZX75BP-1500-S+

Typical Performance Curves

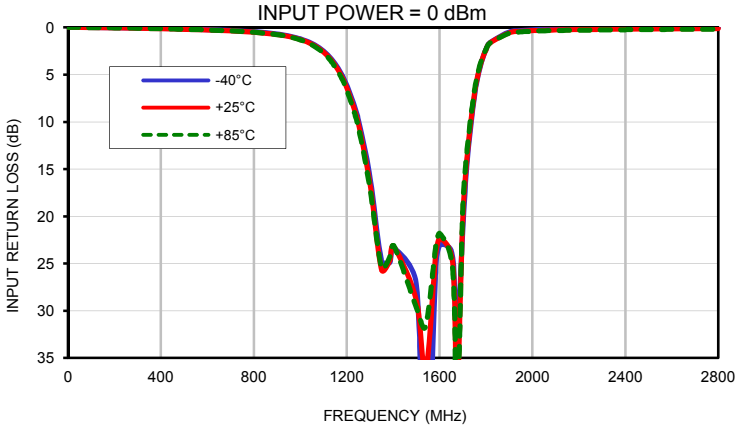
INSERTION LOSS vs. TEMPERATURE
INPUT POWER = 0 dBm



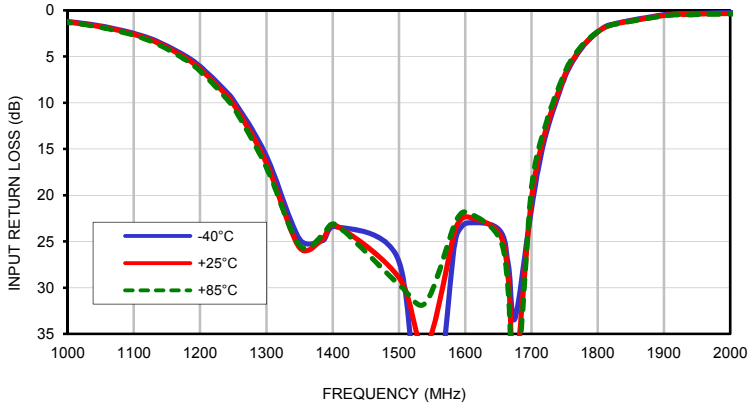
INSERTION LOSS vs. TEMPERATURE
INPUT POWER = 0 dBm



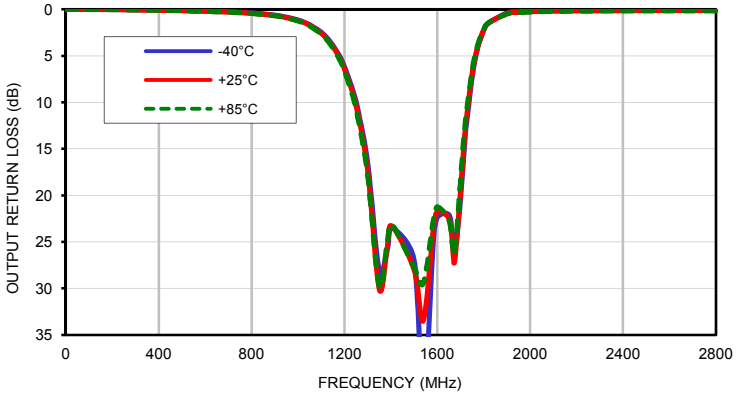
INPUT RETURN LOSS vs. TEMPERATURE
INPUT POWER = 0 dBm



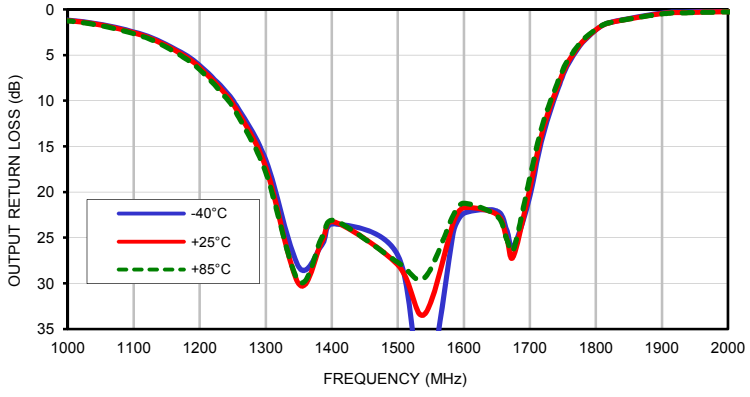
INPUT RETURN LOSS vs. TEMPERATURE
INPUT POWER = 0 dBm



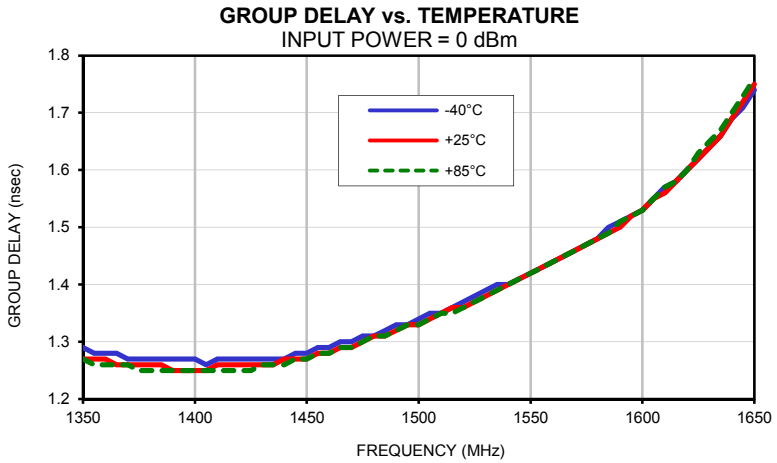
OUTPUT RETURN LOSS vs. TEMPERATURE
INPUT POWER = 0 dBm



OUTPUT RETURN LOSS vs. TEMPERATURE
INPUT POWER = 0 dBm



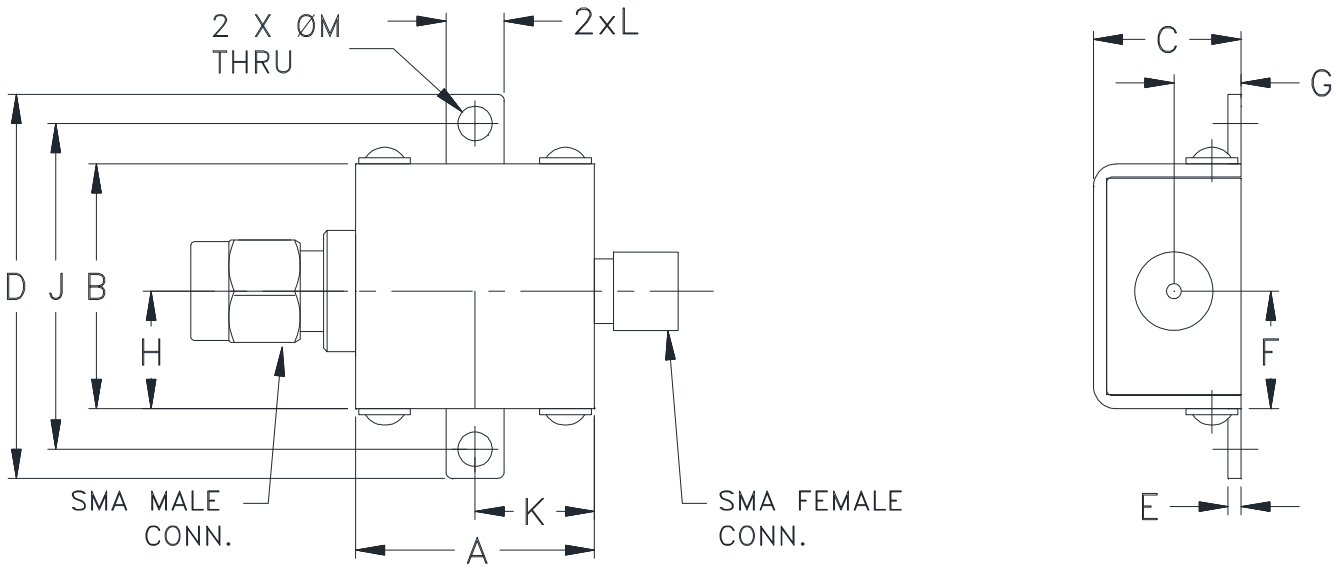
Typical Performance Curves



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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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