Coaxial

High Pass Filter

ZX75HP-110-S+

50Ω 185 to 2500 MHz

Generic photo used for illustration purposes only

CASE STYLE: KE1467

The Big Deal

- Low insertion loss
- High rejection
- Connectorized package

Product Overview

ZX75HP-110-S+ is a High pass filter in a rugged connectorized package covering 185 to 2500 MHz. This filter will find its application in TV Broadcast, point-to-point military radio and cordless telephones. It has repeatable performance across production lots and consistent performance across temperature.

Key Features

Feature	Advantages
Low insertion loss	Can be used in high performance applications.
Good rejection	This enables the filter to attenuate spurious signals and reject harmonics for broad band frequency.
Connectorized package	The connectorized package is easy to interface with other devices and well suited for test setups.

Notes
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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

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ZX75HP-110-S+

50Ω 185 to 2500 MHz

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CASE STYLE: KE1467

Connectors	Model
SMA-M\F	ZX75HP-110-S+

Features

- Wide band, 185 MHz to 2500 MHz
- High rejection
- Connectorized package

Applications

- TV Broadcast
- Point-to-point military radio
- Cordless telephones

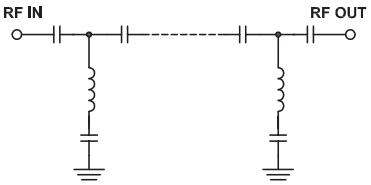
Electrical Specifications at 25°C

Parameter		F#	Frequency (MHz)	Min.	Typ.	Max.	Unit
Stop Band	Rejection Loss	DC-F1	DC-77	20	30	-	dB
	VSWR	DC-F1	DC-77	-	20	-	:1
Pass Band	Insertion Loss	F2-F3	185-2500	-	0.5	1.2	dB
	VSWR	F2-F3	185-2500	-	1.4	-	:1

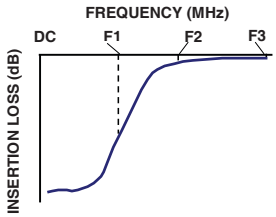
Maximum Ratings	
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power Input	0.5 W.

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

Functional Schematic

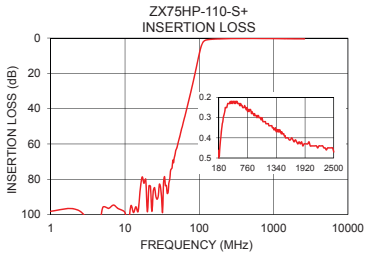


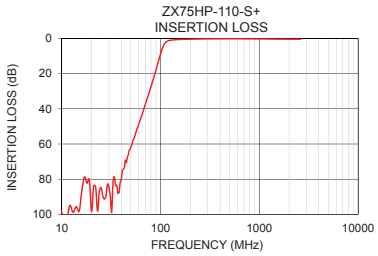
Typical Frequency Response

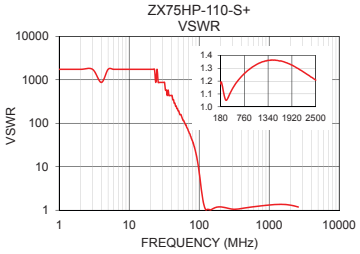


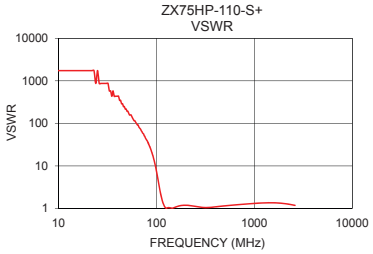
Typical Performance Data at 25°C

Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)
1	98.14	1737.18
4	119.12	868.59
16	86.02	1737.18
34	78.51	579.06
48	63.93	217.15
59	50.19	115.81
72	35.51	59.91
77	30.37	45.72
90	17.73	20.22
99	9.60	8.47
105	5.27	4.07
110	2.95	2.29
118	1.45	1.26
141	0.76	1.03
160	0.59	1.10
185	0.48	1.19
350	0.24	1.06
1180	0.33	1.35
1875	0.44	1.33
2500	0.47	1.21









+RoHS Compliant

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

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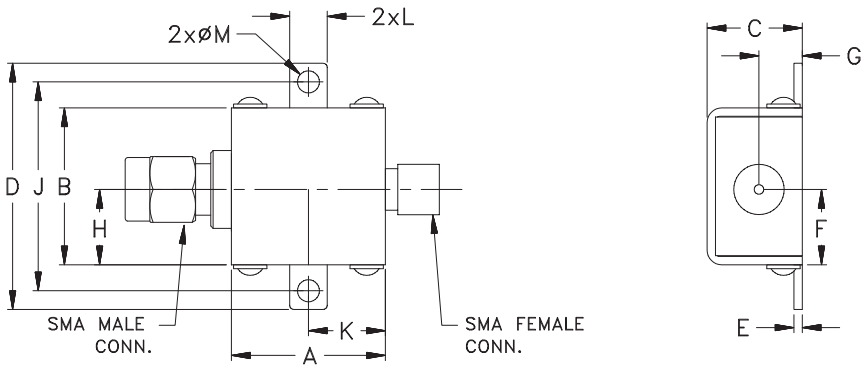
Coaxial Connections

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

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High Pass Filter ZX75HP-110-S+

Typical Performance Data

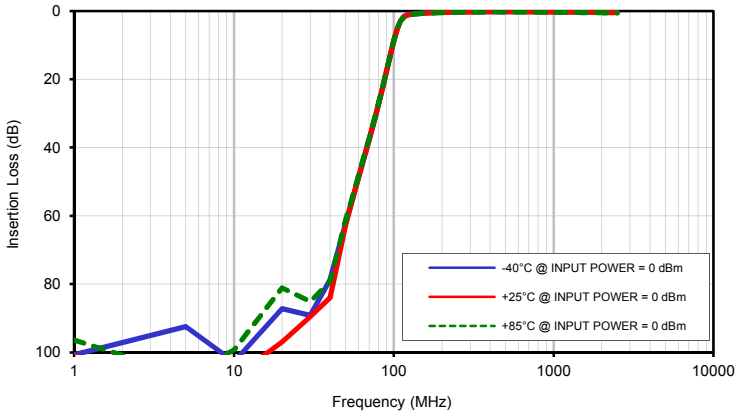
FREQ.	INSERTION LOSS			INPUT RETURN LOSS			OUTPUT RETURN LOSS		
(MHz)	(dB)			(dB)			(dB)		
	@-40°C	@+25°C	@+85°C	@-40°C	@+25°C	@+85°C	@-40°C	@+25°C	@+85°C
1	100.68	101.05	96.35	0.00	0.00	0.00	0.00	0.00	0.00
5	92.45	107.49	106.68	0.00	0.00	0.00	0.01	0.00	0.01
10	102.78	107.37	99.27	0.00	0.00	0.00	0.00	0.00	-0.01
20	87.24	96.91	81.07	0.01	0.01	0.01	0.01	0.01	0.01
30	89.15	89.52	85.09	0.01	0.02	0.02	0.02	0.02	0.03
40	78.70	84.03	79.22	0.04	0.04	0.05	0.04	0.04	0.05
50	62.11	62.44	61.02	0.07	0.09	0.09	0.08	0.09	0.10
60	49.18	48.95	48.44	0.12	0.15	0.16	0.13	0.15	0.16
70	37.79	37.61	37.40	0.20	0.24	0.27	0.22	0.26	0.29
77	30.53	30.34	30.15	0.30	0.35	0.39	0.33	0.38	0.42
80	27.50	27.35	27.15	0.36	0.41	0.46	0.38	0.44	0.49
85	22.64	22.51	22.33	0.50	0.57	0.63	0.52	0.60	0.66
90	17.81	17.73	17.58	0.72	0.82	0.90	0.76	0.86	0.94
95	13.08	13.06	12.96	1.16	1.29	1.40	1.21	1.33	1.46
100	8.73	8.78	8.75	2.08	2.25	2.41	2.14	2.32	2.49
105	5.15	5.26	5.30	4.03	4.26	4.49	4.12	4.36	4.59
110	2.80	2.94	3.03	7.70	7.98	8.28	7.83	8.14	8.43
115	1.65	1.80	1.90	13.37	13.80	14.22	13.59	14.06	14.47
120	1.16	1.29	1.38	21.38	22.34	23.21	21.74	22.93	23.82
125	0.95	1.06	1.14	34.99	38.61	38.28	34.52	41.79	53.78
130	0.82	0.93	1.01	38.84	32.79	30.03	37.35	33.63	31.11
135	0.75	0.84	0.91	34.01	30.42	28.29	36.17	32.47	29.97
140	0.68	0.77	0.83	32.94	30.71	28.90	39.30	36.06	32.53
145	0.63	0.71	0.77	30.91	30.67	29.91	36.17	41.52	39.18
150	0.58	0.66	0.72	28.36	29.04	29.57	30.97	34.27	38.85
160	0.52	0.59	0.65	24.65	25.11	25.96	25.51	26.43	27.87
170	0.47	0.54	0.58	22.82	22.76	23.20	23.15	23.21	23.82
180	0.43	0.50	0.54	22.16	21.61	21.67	22.21	21.74	21.88
185	0.41	0.48	0.52	22.10	21.34	21.23	22.04	21.37	21.30
200	0.40	0.46	0.49	22.77	21.39	20.74	22.34	21.13	20.60
220	0.34	0.40	0.43	24.65	22.53	21.24	23.65	21.96	20.86
240	0.30	0.36	0.39	27.34	24.62	22.65	25.63	23.71	22.09
280	0.25	0.30	0.33	35.28	32.08	28.19	29.78	28.51	26.39
300	0.23	0.27	0.30	42.08	40.10	33.27	31.78	31.07	29.39
320	0.22	0.26	0.29	64.92	47.96	43.54	33.26	32.20	32.04
340	0.20	0.25	0.27	42.46	36.34	38.08	33.88	31.44	31.92
360	0.19	0.24	0.26	36.92	31.91	31.75	33.43	29.84	29.71
380	0.18	0.23	0.25	33.61	29.30	28.40	32.13	28.25	27.52
400	0.18	0.23	0.25	31.11	27.47	26.23	30.48	26.89	25.75
500	0.17	0.22	0.26	24.55	22.97	21.35	24.48	22.86	21.24
600	0.17	0.23	0.28	22.13	20.91	19.42	22.01	20.78	19.31
700	0.18	0.25	0.30	20.83	19.59	18.10	20.69	19.46	17.99
800	0.19	0.26	0.32	19.67	18.67	17.15	19.50	18.52	17.05
900	0.20	0.29	0.36	19.03	17.97	16.58	18.80	17.79	16.46
1000	0.21	0.31	0.37	18.79	17.43	16.18	18.57	17.26	16.08
1100	0.22	0.32	0.40	18.56	17.03	15.93	18.31	16.84	15.83
1200	0.23	0.34	0.41	18.15	16.72	15.74	17.92	16.54	15.63
1300	0.24	0.36	0.43	17.79	16.52	15.63	17.62	16.39	15.55
1400	0.25	0.37	0.44	17.65	16.38	15.59	17.54	16.27	15.53
1500	0.26	0.39	0.47	17.55	16.33	15.61	17.47	16.26	15.57
1600	0.27	0.41	0.49	17.45	16.37	15.70	17.43	16.37	15.70
1700	0.29	0.41	0.50	17.41	16.48	15.85	17.45	16.49	15.86
1800	0.29	0.41	0.51	17.58	16.67	16.09	17.62	16.72	16.12
1900	0.30	0.43	0.53	17.90	16.97	16.38	17.97	17.04	16.44
2000	0.29	0.43	0.53	18.31	17.36	16.81	18.41	17.42	16.83
2100	0.30	0.44	0.54	18.82	17.83	17.35	18.95	17.91	17.33
2200	0.29	0.44	0.53	19.44	18.46	18.05	19.49	18.45	17.92
2300	0.29	0.45	0.55	20.22	19.17	18.93	20.19	19.07	18.66
2400	0.30	0.45	0.56	21.08	20.07	20.04	20.87	19.75	19.53
2500	0.30	0.46	0.57	22.00	21.09	21.36	21.48	20.52	20.50

Typical Performance Data

FREQ. (MHz)	GROUP DELAY (nS)		
	@-40°C	@+25°C	@+85°C
185	3.41	3.41	3.36
186	3.33	3.32	3.31
187	3.34	3.34	3.32
188	3.61	3.60	3.60
189	3.53	3.51	3.50
190	3.41	3.39	3.40
200	3.28	3.25	3.25
210	3.04	3.01	3.01
220	2.50	2.49	2.47
230	2.28	2.27	2.25
240	2.10	2.08	2.07
250	1.94	1.92	1.91
260	1.79	1.78	1.77
270	1.67	1.66	1.65
280	1.56	1.55	1.55
290	1.46	1.46	1.45
300	1.38	1.37	1.36
310	1.30	1.30	1.29
320	1.23	1.23	1.22
330	1.17	1.16	1.16
340	1.12	1.11	1.10
350	1.06	1.06	1.05
360	1.02	1.01	1.00
370	0.97	0.97	0.96
380	0.94	0.93	0.92
390	0.90	0.89	0.89
400	0.87	0.86	0.85
410	0.84	0.83	0.82
420	0.81	0.80	0.79
430	0.78	0.77	0.77
440	0.76	0.75	0.74
450	0.73	0.72	0.72
460	0.71	0.71	0.70
470	0.69	0.68	0.68
480	0.67	0.66	0.66
500	0.64	0.63	0.63
520	0.61	0.60	0.59
540	0.58	0.57	0.57
560	0.56	0.55	0.54
580	0.54	0.53	0.52
600	0.52	0.51	0.50
700	0.45	0.44	0.43
800	0.40	0.39	0.39
900	0.37	0.36	0.35
1000	0.35	0.34	0.33
1100	0.33	0.32	0.31
1200	0.31	0.30	0.30
1300	0.31	0.30	0.29
1400	0.30	0.29	0.28
1500	0.29	0.29	0.28
1600	0.29	0.28	0.28
1700	0.28	0.27	0.27
1800	0.28	0.27	0.27
1900	0.28	0.27	0.26
2000	0.28	0.27	0.26
2100	0.28	0.27	0.26
2200	0.28	0.27	0.26
2300	0.27	0.27	0.26
2400	0.27	0.27	0.26
2500	0.28	0.27	0.26

Typical Performance Curves

Insertion Loss vs. Temperature



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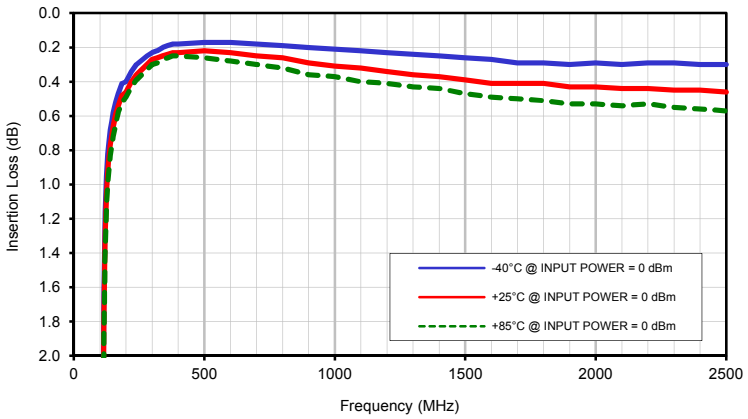
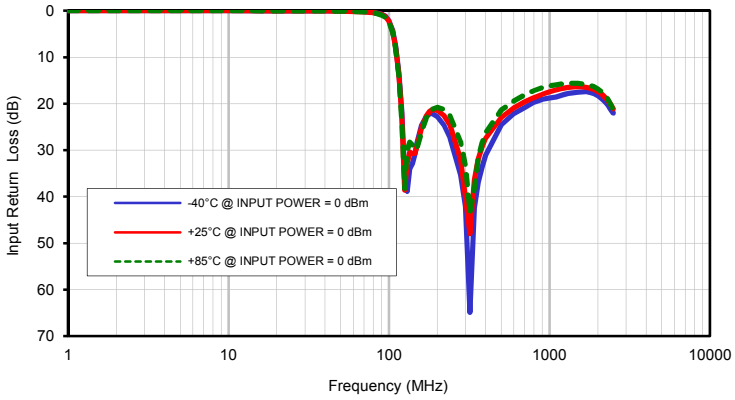
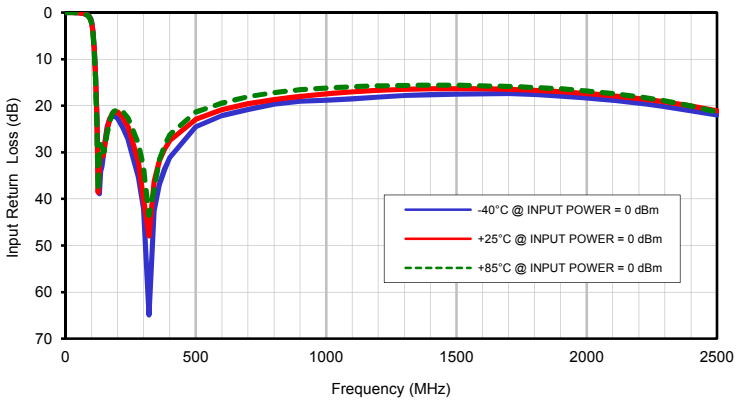


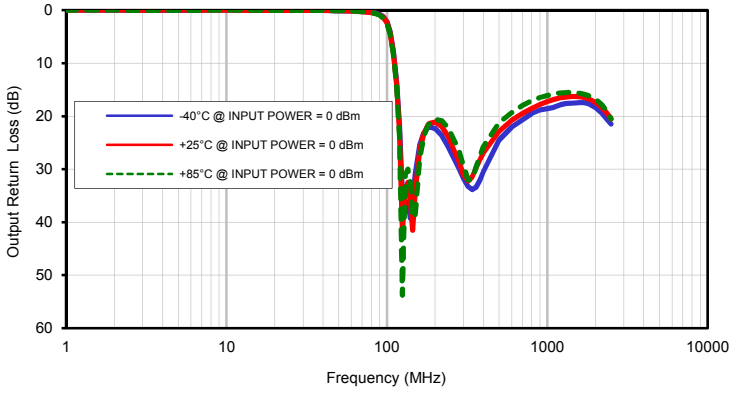
Input Return Loss vs. Temperature



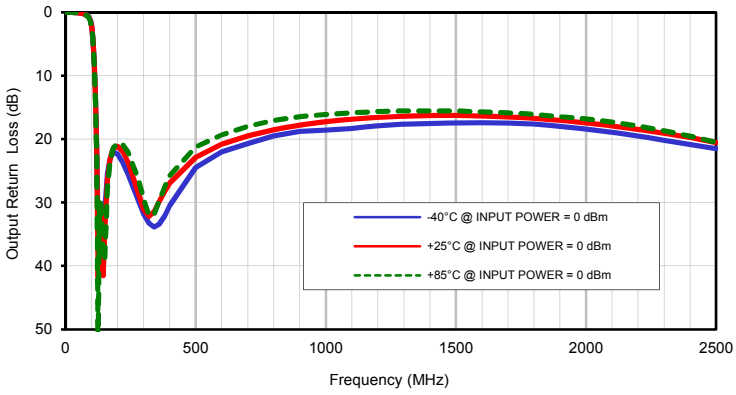
Input Return Loss vs. Temperature



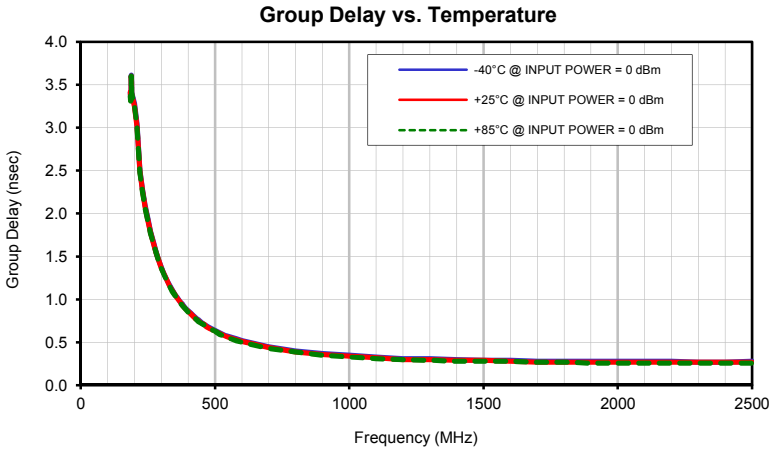
Output Return Loss vs. Temperature



Output Return Loss vs. Temperature



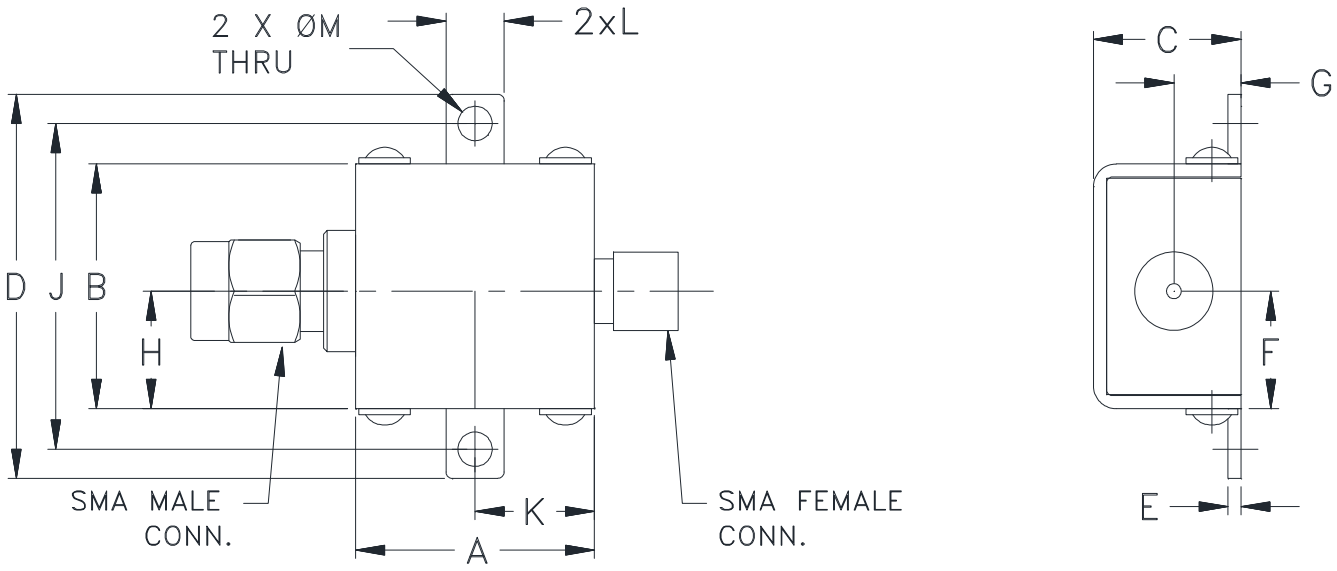
Typical Performance Curves



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.

Mini-Circuits®
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Mini-Circuits

Environmental Specifications **ENV28T5**

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	-40° to 85°C	Individual Model Data Sheet
Storage Temperature	-55° to 100° C Ambient Environment	Individual Model Data Sheet
Barometric Pressure	100,000 Feet	MIL-STD-202, Method 105, Condition D
Humidity	90% RH, 65°C Units may require bake-out after humidity to restore full performance.	MIL-STD-202, Method 103
Thermal Shock	-65° to 125°C, 5 cycles	MIL-STD-202, Method 107, Condition B
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	100g, 6ms sawtooth, 3 shocks each direction 3 axes (total 18)	MIL-STD-202, Method 213, Condition I

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