



LUMPED LC COAXIAL

Bandpass Filter

ZX75BP-130-S+

50Ω 95 to 180 MHz SMA-Male to SMA-Female

KEY FEATURES

- Good Insertion Loss, 2.5dB Max.
- Stop Band Return Loss, 14dB Typ.
- Stop Band Rejection, 30dB Typ.



Generic photo used for illustration purposes only

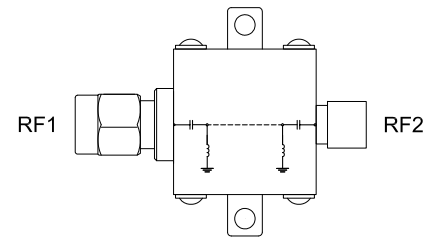
APPLICATIONS

- Aircraft Communication
- Harmonic Rejection

PRODUCT OVERVIEW

ZX75BP-130-S+ is a 50Ω bandpass filter in a connectorized package covering 95 to 180MHz. This offers good matching within the passband and high rejection in stopband.

FUNCTIONAL DIAGRAM



ELECTRICAL SPECIFICATIONS¹ AT +25°C

Parameter		F#	Frequency (MHz)	Min.	Typ.	Max.	Units
Passband	Center Frequency	Fc	—	—	138	—	MHz
	Insertion Loss	F1-F2	95 - 180	—	—	2.5	dB
	Return Loss	F1-F2	95 - 180	10	14	—	dB
Stop Band, Lower	Rejection	DC-F3	DC - 48	35	—	—	dB
		F3-F4	48 - 58	20	—	—	
Stop Band, Upper	Rejection	F5-F6	260 - 310	20	—	—	dB
		F6-F7	310 - 2500	35	—	—	
		F7-F8	2500 - 4000	—	30	—	

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

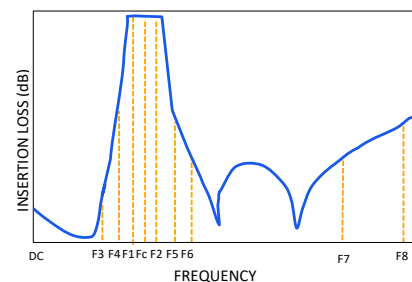
ABSOLUTE MAXIMUM RATINGS²

Parameter	Ratings
Operating Temperature	-40°C to + 85°C
Storage Temperature	-55°C to + 100°C
Input Power ³	0.25W 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





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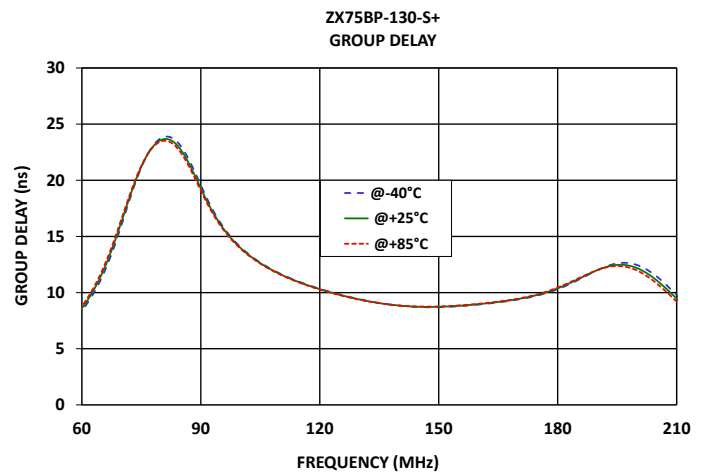
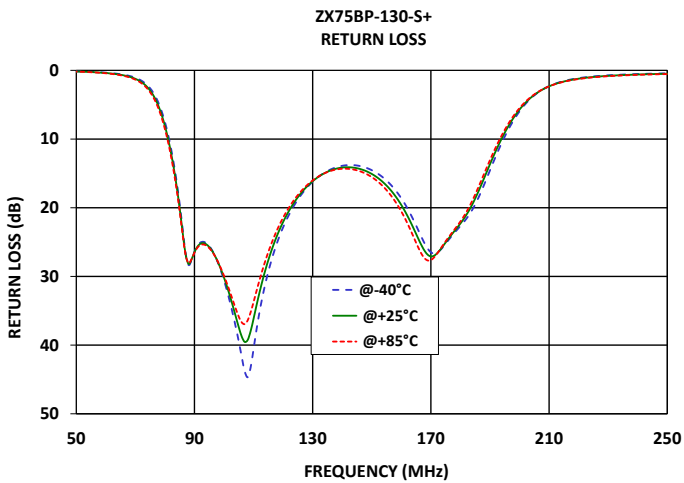
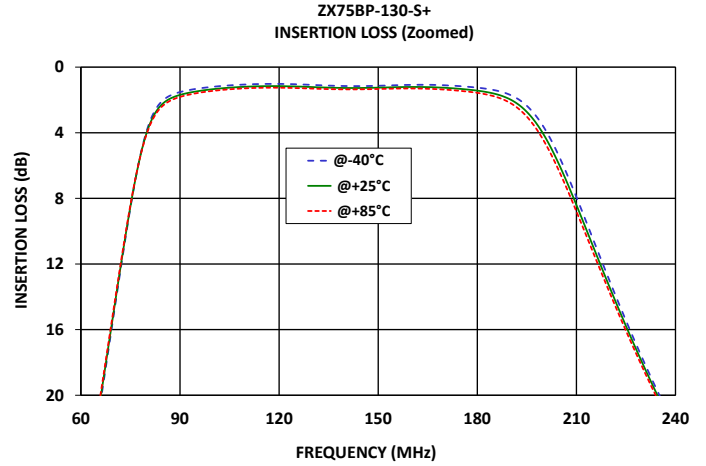
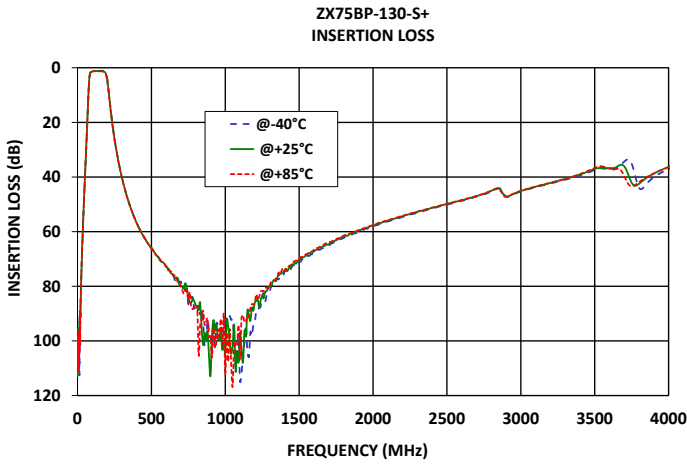
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ZX75BP-130-S+

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TYPICAL PERFORMANCE GRAPHS





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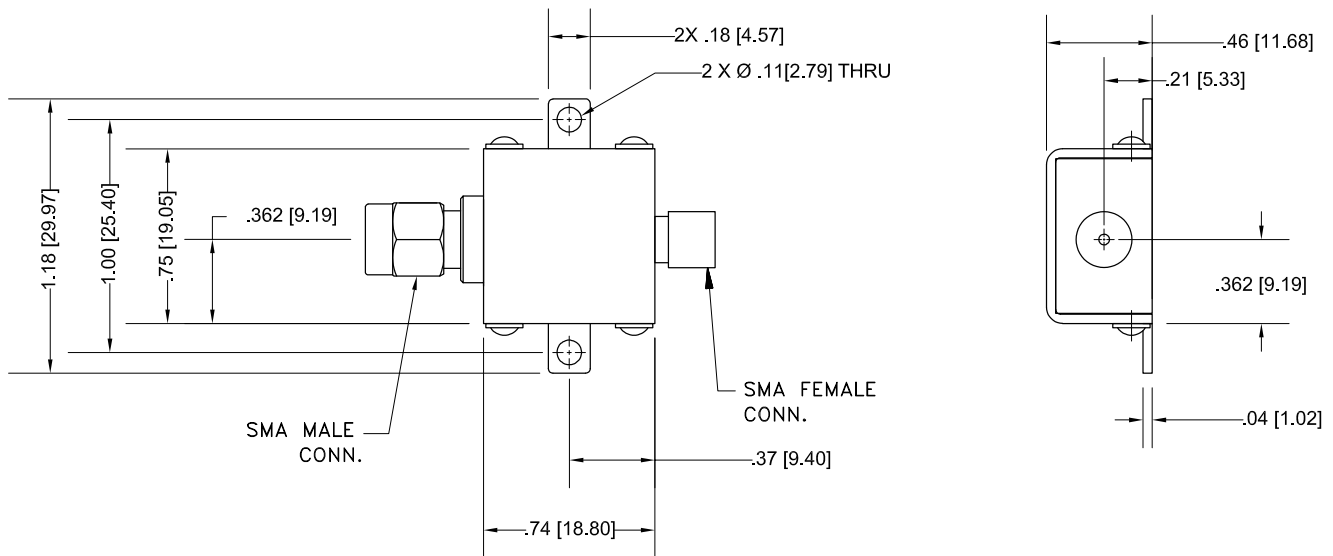
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50Ω 95 to 180 MHz SMA-Male to SMA-Female

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: 2PI. ± .03; 3PI. ± .015

Tolerance on hole size and interaxes dimensions to be ± .005.

PRODUCT MARKING*: ZX75BP-130-S+

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



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Mini-Circuits

50Ω 95 to 180 MHz SMA-Male to SMA-Female

ADDITIONAL INFORMATION IS AVAILABLE ON OUR DASHBOARD

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Performance Data & Graphs	<p>Data</p> <p>Graphs</p> <p>S-Parameter (S2P Files) Data Set (.zip file)</p>
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-130-S+

Typical Performance Data

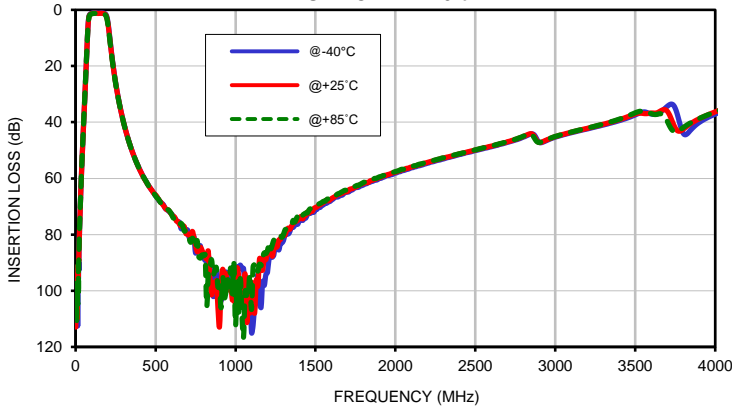
FREQ. (MHz)	INSERTION LOSS			INPUT RETURN LOSS			OUTPUT RETURN LOSS		
	(dB)			(dB)			(dB)		
	@-40°C	@+25°C	@+85°C	@-40°C	@+25°C	@+85°C	@-40°C	@+25°C	@+85°C
10	102.05	110.02	96.49	0.01	0.00	0.01	0.00	0.00	0.00
12	98.02	99.28	100.04	0.00	0.00	0.01	0.00	0.00	0.00
14	92.90	92.41	100.91	0.01	0.00	0.01	0.00	0.00	0.00
16	93.61	95.73	96.67	0.01	0.01	0.01	0.00	0.01	0.01
20	92.70	89.17	88.78	0.01	0.01	0.01	0.01	0.01	0.01
22	83.33	84.45	84.25	0.01	0.01	0.02	0.01	0.01	0.01
25	77.55	76.72	77.04	0.02	0.02	0.02	0.01	0.02	0.02
30	68.56	68.76	68.63	0.03	0.03	0.03	0.02	0.03	0.03
48	43.29	43.06	42.88	0.12	0.14	0.15	0.11	0.13	0.14
50	40.75	40.52	40.33	0.14	0.16	0.18	0.13	0.15	0.17
58	30.65	30.41	30.19	0.28	0.32	0.35	0.26	0.30	0.33
70	15.03	14.82	14.63	1.08	1.23	1.35	1.05	1.20	1.33
80	3.83	3.95	4.03	7.54	8.11	8.56	7.58	8.15	8.63
90	1.52	1.69	1.82	26.43	26.45	26.54	26.18	25.98	26.00
95	1.32	1.48	1.59	25.58	25.73	25.88	24.16	24.10	24.23
100	1.20	1.34	1.45	30.59	30.20	29.92	26.71	26.22	26.07
120	1.02	1.16	1.26	22.84	22.06	21.44	22.89	22.07	21.40
130	1.08	1.22	1.31	16.21	16.14	16.02	16.29	16.23	16.12
135	1.12	1.25	1.34	14.65	14.76	14.80	14.70	14.83	14.88
140	1.15	1.27	1.35	13.90	14.15	14.33	13.91	14.20	14.37
150	1.14	1.25	1.33	14.53	15.08	15.54	14.43	14.99	15.42
180	1.25	1.43	1.57	22.65	22.29	21.99	25.48	26.35	27.37
190	1.70	1.97	2.19	14.55	13.67	13.06	16.83	15.68	14.91
200	3.62	4.08	4.44	5.97	5.71	5.50	6.39	6.11	5.88
260	29.17	29.30	29.43	0.37	0.42	0.46	0.36	0.42	0.46
300	40.02	40.11	40.14	0.24	0.28	0.32	0.23	0.28	0.31
310	42.25	42.31	42.36	0.22	0.26	0.29	0.21	0.26	0.29
400	56.69	56.85	56.79	0.14	0.18	0.20	0.13	0.18	0.20
450	61.92	62.03	62.06	0.12	0.16	0.19	0.11	0.16	0.18
500	66.26	65.83	66.18	0.11	0.15	0.18	0.10	0.15	0.17
700	78.35	79.74	80.49	0.09	0.15	0.18	0.08	0.14	0.18
750	86.56	83.90	84.72	0.09	0.15	0.19	0.08	0.15	0.18
800	87.32	86.94	87.59	0.09	0.15	0.20	0.08	0.15	0.19
850	92.84	101.49	88.94	0.09	0.16	0.20	0.08	0.15	0.19
900	98.21	112.79	98.39	0.09	0.17	0.21	0.08	0.16	0.20
950	93.94	99.05	95.68	0.09	0.17	0.22	0.09	0.17	0.21
1000	92.75	104.43	112.36	0.09	0.17	0.23	0.09	0.17	0.21
1100	114.79	97.00	106.69	0.10	0.19	0.25	0.09	0.18	0.23
1200	93.44	85.92	85.74	0.11	0.20	0.27	0.10	0.19	0.24
1300	82.11	80.15	79.96	0.12	0.21	0.28	0.11	0.21	0.26
1400	74.86	74.23	73.78	0.14	0.23	0.30	0.11	0.22	0.27
1500	71.13	70.37	69.90	0.15	0.24	0.32	0.13	0.23	0.29
1600	67.75	67.19	66.57	0.16	0.26	0.33	0.13	0.25	0.31
1700	64.90	64.69	63.93	0.17	0.27	0.35	0.15	0.26	0.32
1800	62.34	61.86	61.47	0.18	0.29	0.37	0.16	0.28	0.34
1900	60.02	59.81	59.44	0.19	0.30	0.38	0.16	0.29	0.35
2000	58.12	57.79	57.57	0.20	0.31	0.39	0.17	0.30	0.37
2100	56.21	55.95	55.88	0.21	0.33	0.40	0.18	0.31	0.38
2200	54.61	54.32	54.25	0.22	0.34	0.42	0.19	0.32	0.39
2300	53.08	52.76	52.67	0.23	0.35	0.42	0.20	0.33	0.40
2400	51.51	51.26	51.23	0.24	0.36	0.44	0.20	0.34	0.41
2500	50.08	49.92	49.83	0.25	0.37	0.45	0.21	0.34	0.41
2600	48.73	48.51	48.45	0.29	0.41	0.49	0.22	0.35	0.42
2700	47.17	46.96	46.93	0.27	0.40	0.48	0.23	0.36	0.44
2800	45.30	45.07	44.98	0.28	0.40	0.49	0.23	0.37	0.44
2900	47.17	47.23	47.21	0.31	0.43	0.51	0.24	0.38	0.45
3000	45.31	45.14	45.05	0.29	0.41	0.50	0.23	0.37	0.45
3500	37.40	37.04	36.65	0.36	0.55	0.69	0.26	0.42	0.49
3800	43.94	42.50	41.92	1.11	0.83	0.81	0.25	0.40	0.48
4000	37.11	36.30	36.35	0.38	0.52	0.62	0.25	0.43	0.52

Typical Performance Data

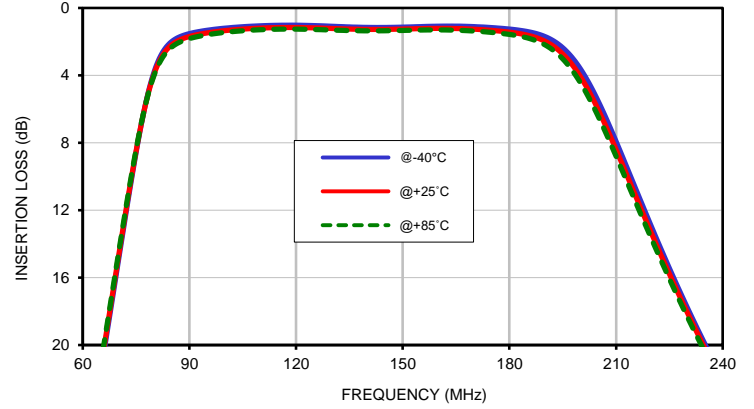
FREQ. (MHz)	GROUP DELAY		
	(nsec)		
	@-40°C	@+25°C	@+85°C
95	16.19	16.04	15.93
96	15.67	15.55	15.45
97	15.21	15.10	15.01
98	14.79	14.69	14.61
99	14.41	14.31	14.25
100	14.06	13.98	13.91
101	13.74	13.66	13.60
102	13.44	13.37	13.32
103	13.17	13.11	13.05
104	12.91	12.85	12.81
105	12.67	12.62	12.58
106	12.45	12.40	12.36
107	12.24	12.20	12.16
108	12.05	12.00	11.96
109	11.86	11.82	11.78
110	11.69	11.64	11.61
111	11.52	11.48	11.45
112	11.36	11.32	11.29
122	10.12	10.09	10.06
123	10.02	9.99	9.97
124	9.93	9.90	9.87
125	9.83	9.80	9.78
126	9.74	9.71	9.69
127	9.66	9.63	9.60
128	9.57	9.54	9.52
129	9.49	9.46	9.44
130	9.41	9.39	9.37
131	9.34	9.31	9.30
132	9.26	9.25	9.23
133	9.19	9.18	9.17
134	9.13	9.12	9.11
138	8.92	8.92	8.92
161	8.97	9.00	9.03
162	9.00	9.04	9.07
174	9.66	9.71	9.76
175	9.75	9.81	9.86
176	9.84	9.90	9.96
177	9.94	10.01	10.07
178	10.05	10.12	10.19
179	10.17	10.25	10.31
180	10.30	10.38	10.45

Typical Performance Curves

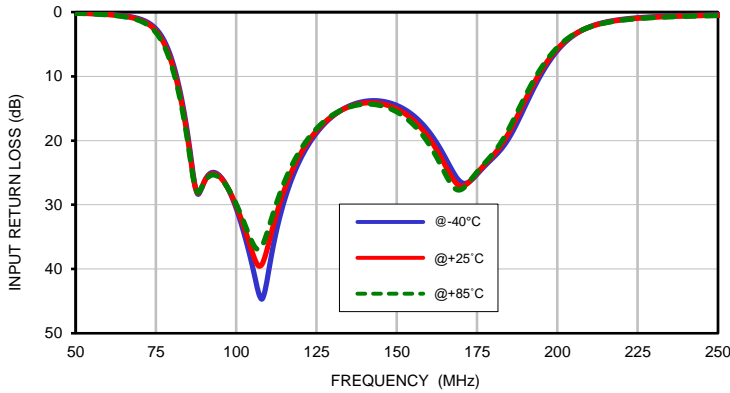
INSERTION LOSS vs. TEMPERATURE
INPUT POWER = 0 dBm



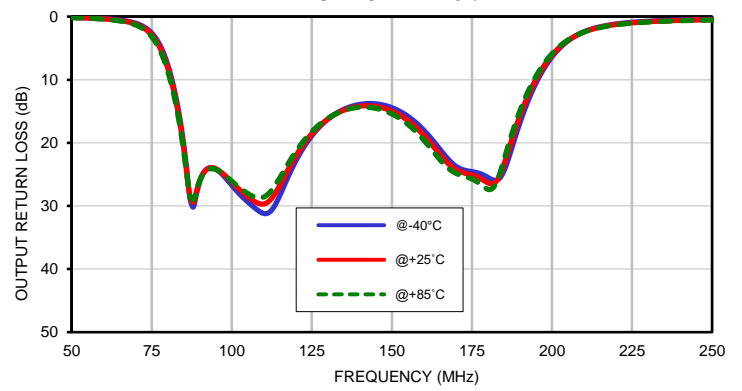
INSERTION LOSS vs. TEMPERATURE (Zoomed)
INPUT POWER = 0 dBm



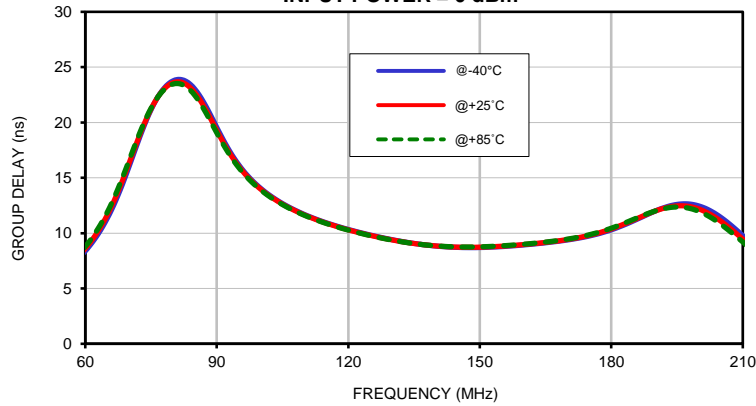
INPUT RETURN LOSS vs. TEMPERATURE
INPUT POWER = 0 dBm



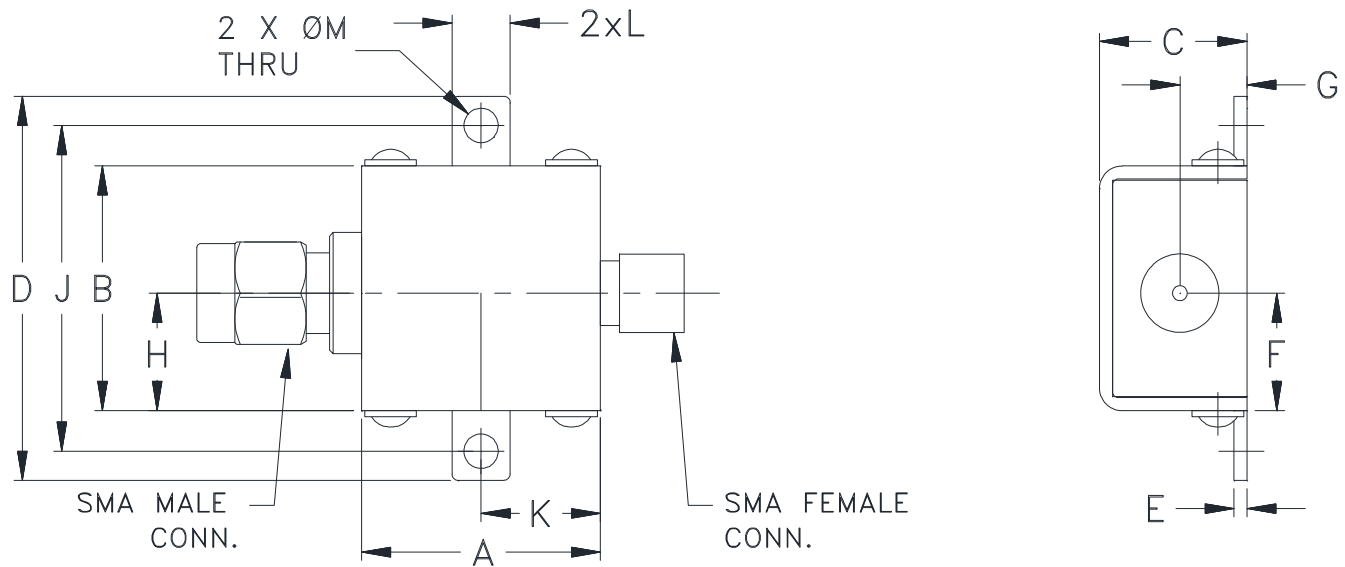
OUTPUT RETURN LOSS vs. TEMPERATURE
INPUT POWER = 0 dBm



GROUP DELAY vs. TEMPERATURE
INPUT POWER = 0 dBm



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. $\pm .03$; 3Pl. $\pm .015$

Tolerance on hole size and interaxes dimensions to be $\pm .005$.

Note:

1. Case material: Brass
2. Case finish: Gold
3. Cover: Nickel plated.

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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, Condition 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