



LUMPED LC COAXIAL

# Bandpass Filter

## ZX75BP-160-S+

50Ω 120 to 210 MHz SMA-Male to SMA-Female

### KEY FEATURES

- Insertion Loss, 2dB Typ.
- Stop Band Return Loss, 17dB Typ.
- Stop Band Rejection, 30dB Typ.

### APPLICATIONS

- Sattelite Communication
- VHF Communication

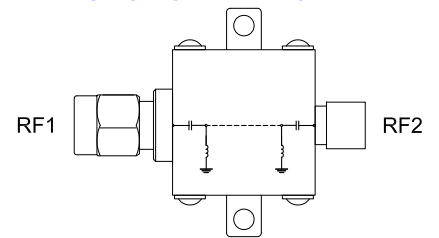
### PRODUCT OVERVIEW

ZX75BP-160-S+ is a 50Ω bandpass filter in a connectorized package covering 120 to 210MHz. This offers good matching within the passband and high rejection in stopband.



Generic photo used for illustration purposes only

### FUNCTIONAL DIAGRAM



### ELECTRICAL SPECIFICATIONS<sup>1</sup> AT +25°C

Parameter	F#	Frequency (MHz)	Min.	Typ.	Max.	Units
Passband	Center Frequency	Fc	—	165	—	MHz
	Insertion Loss	F1-F2	—	2.0	3	dB
	Return Loss	F1-F2	120 - 210	12.7	17.4	dB
Stop Band, Lower	Rejection	DC-F3	DC - 70	—	—	dB
		F3-F4	70 - 85	20	—	
Stop Band, Upper	Rejection	F5-F6	280 - 340	20	—	dB
		F6-F7	340 - 2000	35	—	
		F7-F8	2000 - 4000	—	30	

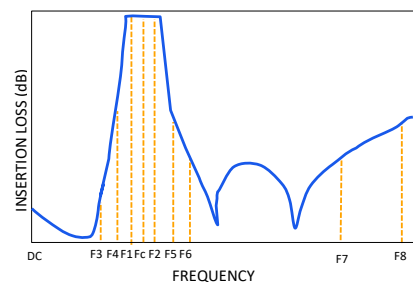
1. This filter is bi-directional RF1 and RF2 ports may be interchanged, see S-Parameters for actual performance.

### ABSOLUTE MAXIMUM RATINGS<sup>2</sup>

Parameter	Ratings
Operating Temperature	-40°C to + 85°C
Storage Temperature	-55°C to + 100°C
Input Power <sup>3</sup>	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





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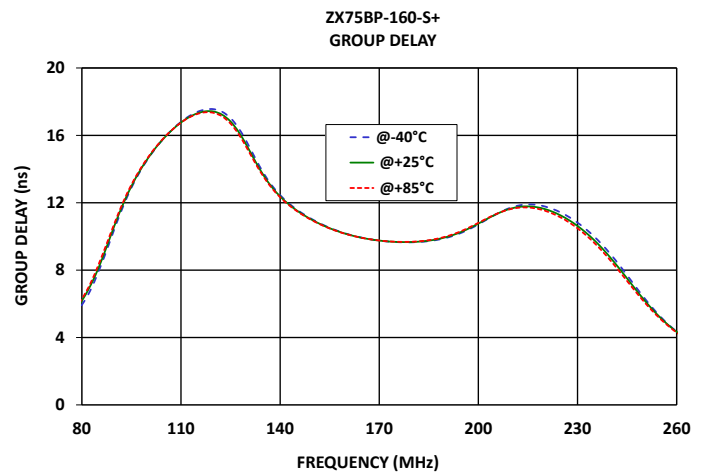
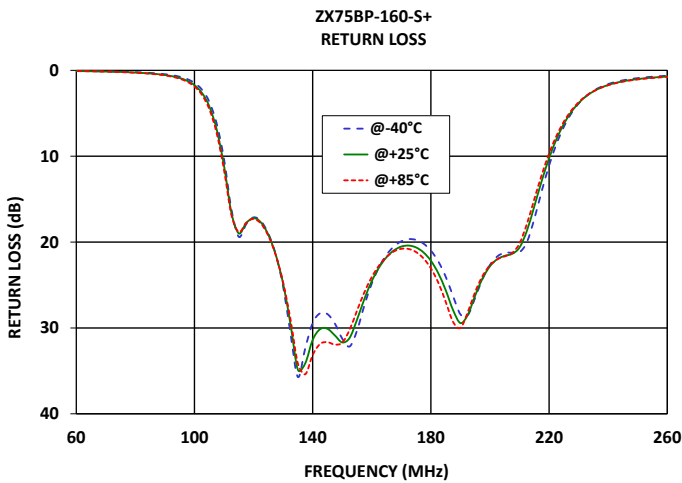
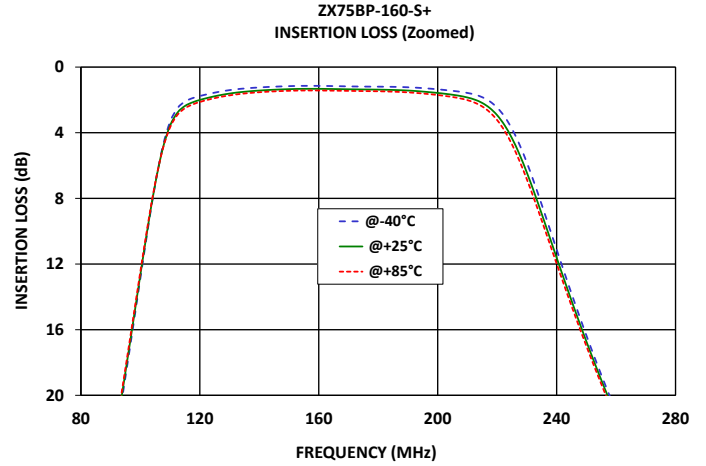
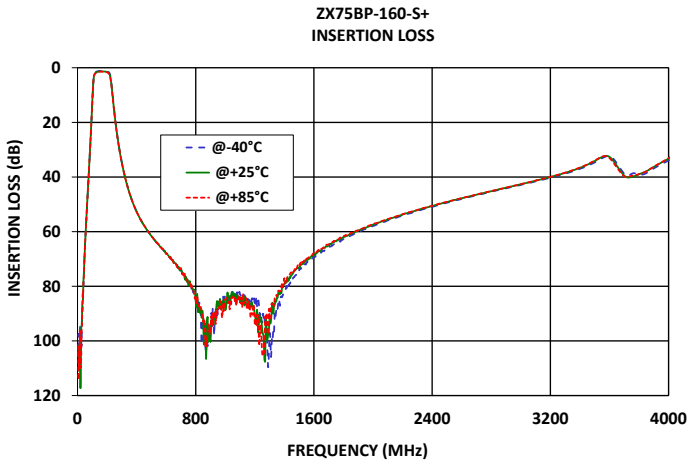
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## ZX75BP-160-S+

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50Ω 120 to 210 MHz SMA-Male to SMA-Female

### TYPICAL PERFORMANCE GRAPHS





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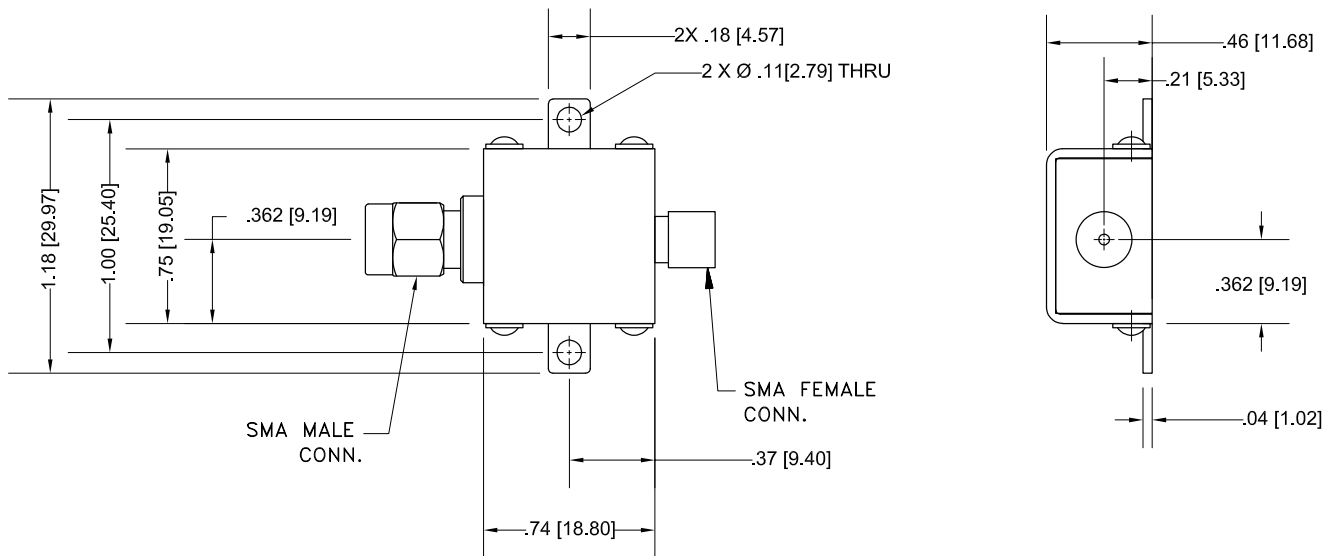
Mini-Circuits

50Ω 120 to 210 MHz SMA-Male to SMA-Female

### CONNECTOR DESCRIPTION

Function	Marking on Unit	Connector
RF1 <sup>1</sup>	1	SMA Male
RF2 <sup>1</sup>	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-160-S+

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



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# Bandpass Filter

## ZX75BP-160-S+

Mini-Circuits

50Ω 120 to 210 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](http://www.minicircuits.com/terms/viewterm.html)



# Coaxial Band Pass Filter

# ZX75BP-160-S+

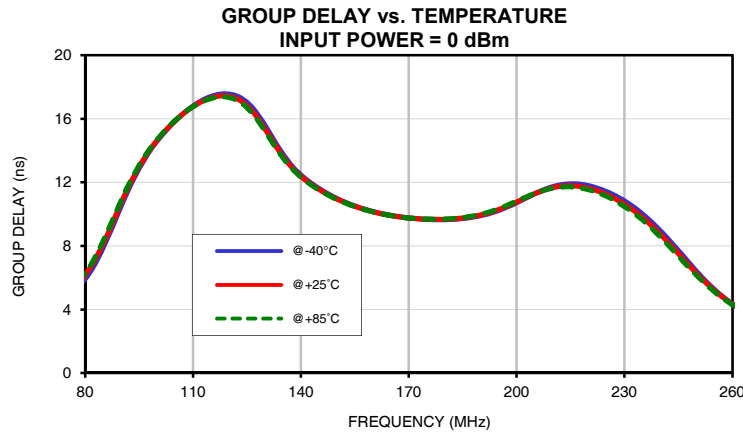
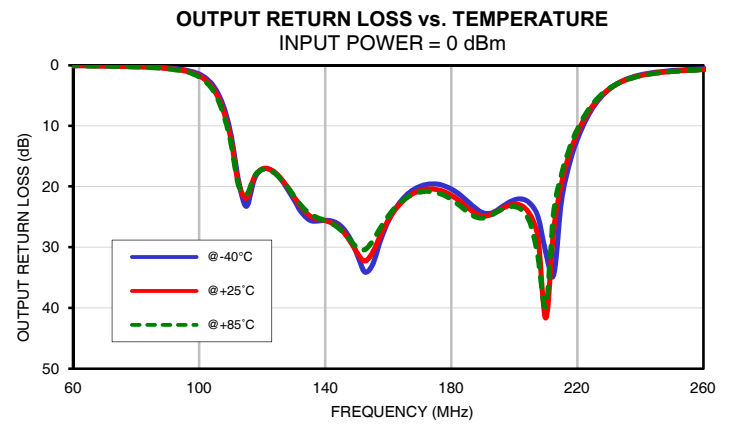
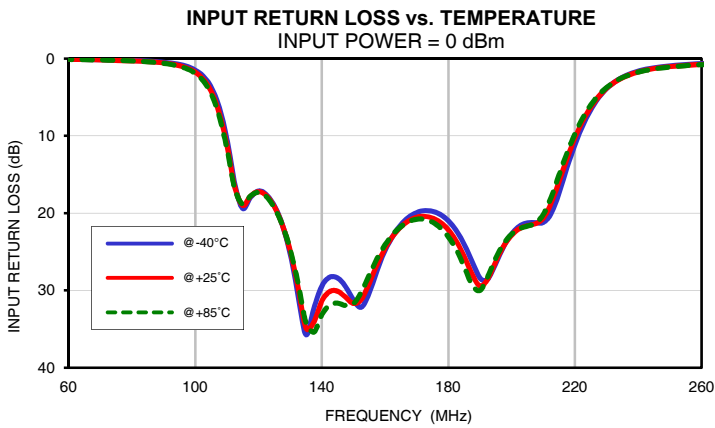
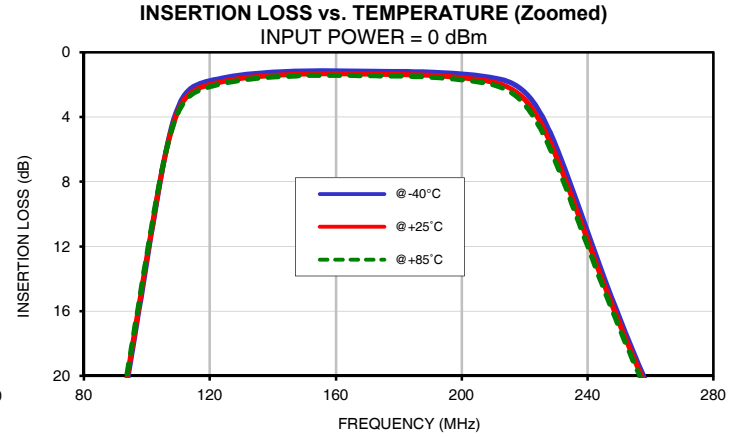
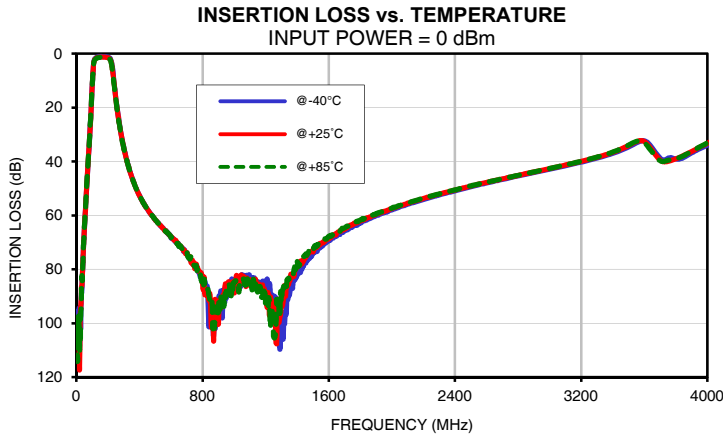
## Typical Performance Data

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	101.07	102.46	102.05	0.00	0.00	0.00	0.00	0.00	0.00
15	100.39	102.88	96.31	0.00	0.00	0.00	0.00	0.00	0.00
20	109.64	117.32	109.91	0.00	0.00	0.01	0.00	0.00	0.01
25	99.64	95.51	106.08	0.00	0.01	0.01	0.00	0.01	0.01
30	92.20	92.01	94.78	0.01	0.01	0.01	0.01	0.01	0.01
35	88.04	86.13	82.37	0.01	0.02	0.02	0.01	0.02	0.02
40	79.95	77.95	78.25	0.02	0.02	0.02	0.02	0.02	0.02
45	72.44	72.87	71.48	0.03	0.03	0.03	0.02	0.03	0.03
50	65.82	65.97	65.70	0.03	0.04	0.05	0.03	0.04	0.05
55	60.59	60.45	60.20	0.05	0.06	0.06	0.04	0.05	0.06
60	55.33	55.16	54.97	0.06	0.08	0.08	0.06	0.07	0.08
65	50.24	49.96	49.77	0.08	0.10	0.11	0.08	0.10	0.11
70	45.18	44.91	44.72	0.11	0.14	0.15	0.10	0.13	0.14
75	40.19	39.90	39.69	0.15	0.19	0.20	0.14	0.18	0.19
80	35.13	34.84	34.60	0.21	0.26	0.28	0.19	0.24	0.27
85	29.95	29.64	29.40	0.30	0.36	0.39	0.28	0.35	0.38
90	24.56	24.24	23.99	0.45	0.55	0.59	0.43	0.52	0.58
95	18.86	18.56	18.32	0.74	0.89	0.98	0.73	0.88	0.97
100	12.87	12.65	12.46	1.46	1.73	1.88	1.46	1.73	1.91
105	7.12	7.11	7.05	3.66	4.18	4.51	3.76	4.30	4.67
110	3.33	3.56	3.67	10.36	11.12	11.61	11.13	12.01	12.61
120	1.76	2.00	2.13	17.13	17.21	17.31	17.15	17.12	17.20
130	1.40	1.61	1.72	25.18	24.85	24.70	22.11	21.60	21.49
150	1.16	1.35	1.44	31.25	31.69	31.71	30.94	30.79	30.00
160	1.15	1.33	1.43	24.82	24.54	24.07	25.72	25.54	24.87
180	1.19	1.37	1.47	20.99	22.18	23.06	20.40	21.44	22.10
200	1.35	1.58	1.70	22.66	22.82	22.70	22.20	22.91	23.28
205	1.45	1.69	1.82	21.24	21.60	21.66	22.78	24.64	25.95
210	1.58	1.85	2.01	21.18	20.63	20.15	30.84	41.66	39.75
225	3.77	4.34	4.71	6.57	6.24	5.97	6.95	6.60	6.31
250	16.34	16.71	16.99	0.90	1.02	1.06	0.88	0.99	1.04
260	20.98	21.25	21.47	0.63	0.73	0.77	0.60	0.70	0.74
280	28.62	28.79	28.92	0.40	0.48	0.51	0.37	0.45	0.49
300	34.68	34.79	34.87	0.30	0.37	0.40	0.28	0.35	0.38
340	43.72	43.79	43.81	0.21	0.26	0.29	0.19	0.25	0.28
400	52.69	52.71	52.67	0.14	0.20	0.22	0.13	0.19	0.22
500	61.73	61.62	61.54	0.10	0.16	0.18	0.10	0.16	0.18
600	68.36	67.97	68.23	0.09	0.15	0.18	0.08	0.15	0.18
1000	83.86	88.68	84.90	0.09	0.18	0.23	0.08	0.18	0.22
1200	87.31	90.31	94.19	0.10	0.21	0.27	0.09	0.20	0.25
1300	97.20	91.84	92.36	0.12	0.23	0.28	0.10	0.22	0.27
1400	81.71	79.09	77.04	0.12	0.24	0.30	0.11	0.23	0.28
1500	74.19	73.55	71.72	0.14	0.26	0.32	0.11	0.24	0.30
1600	69.38	68.70	67.84	0.15	0.27	0.34	0.12	0.26	0.31
1700	65.78	64.91	64.64	0.16	0.28	0.35	0.13	0.27	0.33
1800	62.72	62.00	61.75	0.17	0.30	0.37	0.15	0.28	0.35
1900	60.13	59.64	59.58	0.19	0.31	0.38	0.15	0.29	0.36
2000	57.91	57.44	57.27	0.20	0.32	0.39	0.16	0.30	0.37
2100	55.88	55.44	55.31	0.21	0.34	0.41	0.17	0.31	0.38
2200	54.13	53.78	53.60	0.22	0.35	0.42	0.18	0.32	0.39
2300	52.40	52.15	52.04	0.23	0.36	0.43	0.18	0.33	0.39
2400	50.93	50.65	50.56	0.24	0.37	0.44	0.19	0.34	0.41
2500	49.43	49.15	49.10	0.25	0.38	0.45	0.19	0.34	0.41
2700	46.67	46.47	46.44	0.26	0.39	0.46	0.20	0.35	0.42
2900	44.14	43.91	43.89	0.27	0.41	0.48	0.20	0.36	0.43
3100	41.61	41.35	41.32	0.28	0.42	0.50	0.21	0.36	0.43
3300	38.79	38.47	38.40	0.30	0.44	0.53	0.21	0.37	0.44
3500	34.67	34.15	33.97	0.35	0.53	0.63	0.24	0.40	0.48
3700	38.78	39.48	39.74	0.48	0.63	0.71	0.60	0.82	0.93
4000	33.95	33.29	33.12	0.41	0.63	0.75	0.22	0.40	0.48

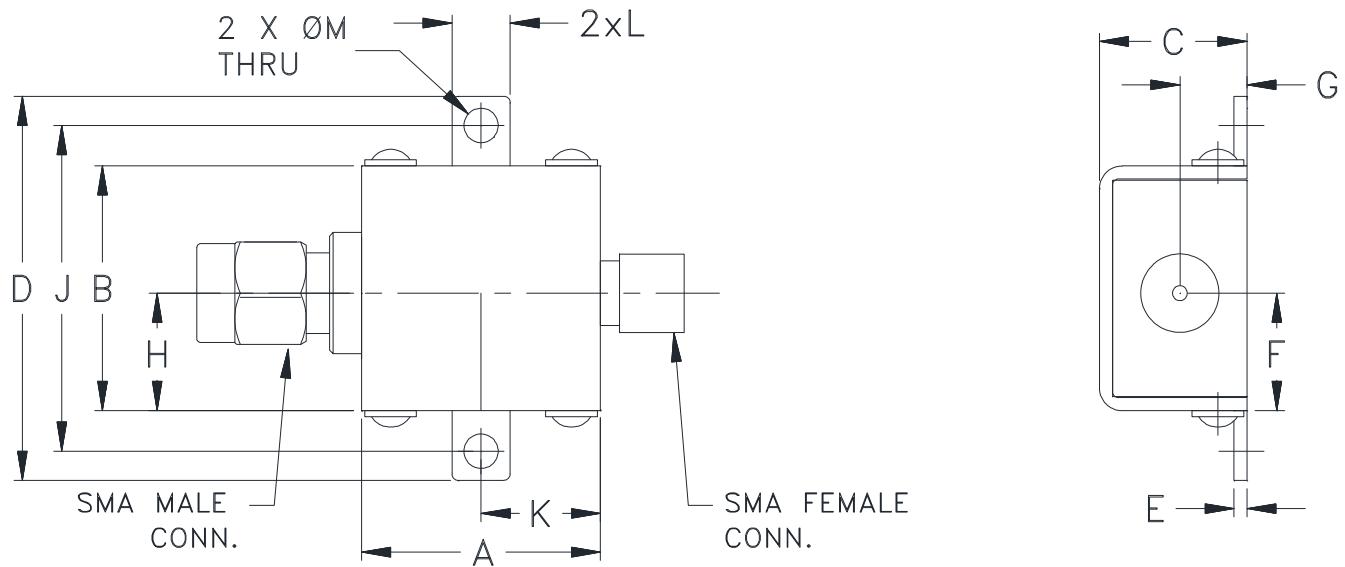
## Typical Performance Data

FREQ.  (MHz)	GROUP DELAY		
	(nsec)		
	@-40°C	@+25°C	@+85°C
120	17.55	17.41	17.33
123	17.39	17.22	17.12
125	17.02	16.82	16.70
128	16.41	16.19	16.05
130	15.57	15.36	15.22
133	14.63	14.45	14.34
135	13.75	13.62	13.54
138	13.03	12.93	12.86
140	12.45	12.37	12.32
143	11.99	11.93	11.88
145	11.60	11.55	11.51
148	11.27	11.23	11.20
150	10.98	10.95	10.92
153	10.73	10.70	10.68
155	10.51	10.49	10.47
158	10.32	10.30	10.29
160	10.16	10.15	10.14
163	10.02	10.02	10.01
165	9.91	9.91	9.91
168	9.82	9.82	9.82
170	9.75	9.75	9.76
173	9.70	9.71	9.71
175	9.67	9.68	9.69
178	9.65	9.66	9.68
180	9.65	9.67	9.69
183	9.68	9.70	9.72
185	9.72	9.75	9.78
188	9.80	9.83	9.87
190	9.90	9.95	9.98
193	10.04	10.10	10.14
195	10.23	10.28	10.33
198	10.46	10.51	10.56
200	10.72	10.76	10.81
203	11.00	11.03	11.06
205	11.28	11.28	11.30
208	11.53	11.50	11.49
210	11.72	11.66	11.64

## Typical Performance Curves



### 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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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, 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