Coaxial

Band Stop Filter

ZX75BS-100-S+

50Ω 90.365 to 109.635 MHz

CASE STYLE: KD1465

The Big Deal

- High rejection
- Stopband (90.365 to 109.635 MHz)
- Connectorized package

Product Overview

The ZX75BS-100-S+ is a band stop filter built in rugged and compact connectorized package. This filter offers good rejection in stopband. It has repeatable performance across lots and consistent performance across temperature. Useful in instrumentation system for industrial applications.

Key Features

Feature	Advantages
High rejection	ZX75BS-100-S+ enables the filter to attenuate spurious signals without compromising pass band signal.
Connectorized package	The connectorized package is easy to interface with other devices and well suited for test setups
Application	Can be used in broadcast and FM systems.

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Band Stop Filter

50Ω 90.365 to 109.635 MHz

ZX75BS-100-S+

CASE STYLE: KD1465

Connectors	Model
SMA-M\F	ZX75BS-100-S+

Features

- High rejection
- Fast roll-off
- Connectorized package

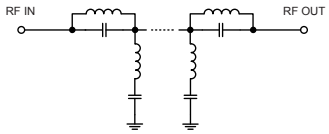
Applications

- FM radio
- Broadcast systems
- Lab use

Electrical Specifications at 25°C

Parameter		F#	Frequency (MHz)	Min.	Typ.	Max.	Unit
Pass Band, Lower	Insertion Loss	DC-F1	DC - 70	-	0.6	1.5	dB
	VSWR	DC-F1	DC - 70	-	1.2	1.6	:1
Stop Band	Rejection	F4-F5	90.365 - 109.635	30	46	-	dB
	VSWR	F4-F5	90.365 - 109.635	-	14	-	:1
Pass Band, Upper	Insertion Loss	F2-F3	146 - 1000	-	0.7	1.5	dB
	VSWR	F2-F3	146 - 1000	-	1.3	1.7	:1

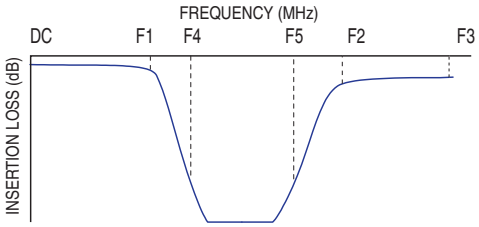
Functional Schematic



Maximum Ratings	
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power Input	250 mW max.

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

Typical Frequency Response

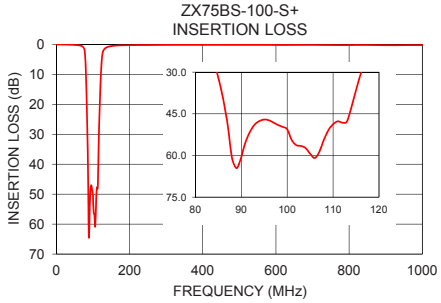


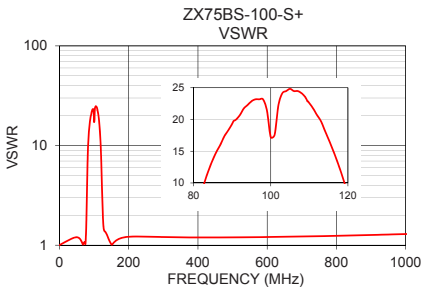
Typical Performance Data at 25°C

Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)
1.000	0.02	1.01
50.000	0.19	1.20
62.000	0.32	1.12
70.000	0.61	1.05
76.000	1.51	1.15
78.000	3.02	1.88
80.000	7.56	4.26
82.000	15.59	8.43
85.000	32.02	13.70
88.000	61.04	17.39
90.365	58.26	19.76
100.000	50.58	17.22
109.635	49.50	22.87
113.000	47.81	19.76
118.000	21.87	12.09
122.000	9.03	4.95
126.000	3.07	1.78
146.000	0.63	1.08
500.000	0.19	1.20
1000.000	0.26	1.29

+RoHS Compliant

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





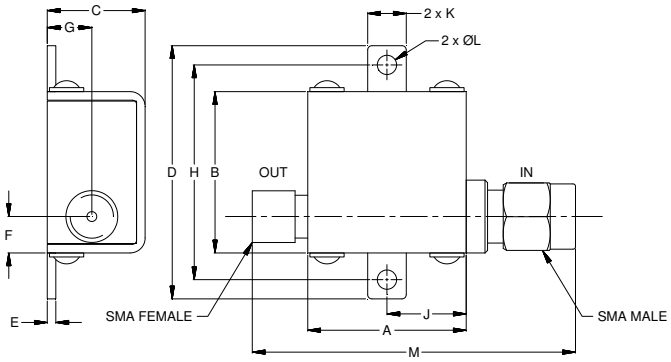
Notes

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**	**.17**	**.21**
18.80	19.05	11.68	29.97	1.02	4.32	5.33

H	J	K	L	M		Wt.
1.00	**.37**	**.18**	**.09**	**1.51**		grams
25.40	9.40	4.57	2.29	38.4		21.4

Notes
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Coaxial Band Stop Filter ZX75BS-100-S+

Typical Performance Data

FREQ. (MHz)	INSERTION LOSS (dB)			INPUT RETURN LOSS (dB)			OUTPUT RETURN LOSS (dB)		
	@-40°C	@+25°C	@+85°C	@-40°C	@+25°C	@+85°C	@-40°C	@+25°C	@+85°C
0.5	0.01	0.02	0.02	55.05	52.20	50.42	54.91	52.17	50.34
5.0	0.03	0.02	0.03	39.16	37.59	36.40	39.17	37.62	36.42
20.0	0.05	0.06	0.08	27.78	26.65	25.60	27.77	26.63	25.59
30.0	0.08	0.10	0.12	24.08	23.37	22.61	24.09	23.37	22.65
40.0	0.12	0.14	0.16	21.56	21.30	20.97	21.54	21.28	20.99
45.0	0.14	0.17	0.19	20.73	20.73	20.69	20.70	20.68	20.71
50.0	0.18	0.20	0.22	20.33	20.62	20.92	20.27	20.55	20.92
55.0	0.22	0.24	0.27	20.58	21.26	22.08	20.50	21.15	22.03
60.0	0.26	0.30	0.33	22.21	23.54	25.32	22.04	23.27	25.01
65.0	0.36	0.42	0.47	26.87	28.86	30.20	26.40	28.03	28.92
70.0	0.58	0.69	0.79	25.93	24.50	22.81	25.75	24.13	22.35
72.0	0.76	0.88	1.00	24.19	23.27	22.18	23.49	22.35	21.12
74.0	1.01	1.16	1.34	26.65	27.08	27.56	22.66	22.03	21.25
76.0	1.57	1.82	2.13	20.34	19.68	18.63	16.73	16.01	14.99
78.0	3.58	4.11	4.79	8.36	8.00	7.53	7.58	7.20	6.69
80.0	9.32	10.13	11.15	3.19	3.21	3.22	2.92	2.92	2.89
82.0	18.40	19.25	20.36	1.67	1.79	1.91	1.55	1.66	1.75
84.0	29.83	30.77	31.99	1.19	1.32	1.45	1.15	1.27	1.36
86.0	46.16	47.37	48.69	0.97	1.09	1.22	0.96	1.07	1.17
88.0	55.09	54.73	54.61	0.84	0.96	1.09	0.84	0.96	1.06
90.0	61.44	60.59	59.79	0.75	0.87	0.99	0.77	0.88	0.96
90.4	61.72	61.19	58.76	0.73	0.86	0.98	0.76	0.87	0.95
91.0	58.72	57.84	55.80	0.72	0.84	0.96	0.74	0.84	0.93
92.0	54.15	54.01	53.14	0.69	0.80	0.93	0.71	0.81	0.90
93.0	52.08	51.58	51.12	0.66	0.79	0.91	0.69	0.79	0.87
94.0	50.76	50.62	50.36	0.65	0.78	0.90	0.66	0.77	0.86
95.0	50.39	50.49	50.25	0.64	0.77	0.90	0.66	0.76	0.84
96.0	50.68	50.52	50.52	0.64	0.78	0.93	0.66	0.76	0.85
97.0	51.65	52.26	54.40	0.72	0.88	1.05	0.68	0.78	0.89
98.0	66.87	78.50	65.38	0.96	1.12	1.24	0.69	0.79	0.87
99.0	61.74	61.79	61.63	0.91	0.96	1.02	0.64	0.74	0.83
100.0	69.97	67.94	68.71	0.70	0.79	0.90	0.62	0.73	0.81
101.0	72.09	71.04	68.87	0.64	0.75	0.86	0.62	0.72	0.81
102.0	69.80	70.24	68.06	0.63	0.74	0.86	0.63	0.73	0.81
103.0	66.43	67.83	67.42	0.63	0.75	0.88	0.63	0.73	0.81
104.0	65.89	64.82	63.64	0.63	0.75	0.89	0.63	0.74	0.83
105.0	60.76	59.78	59.15	0.65	0.77	0.91	0.65	0.76	0.83
106.0	57.00	56.31	55.59	0.67	0.80	0.94	0.67	0.77	0.85
107.0	53.87	53.65	53.28	0.71	0.83	0.98	0.69	0.80	0.89
108.0	52.43	52.16	52.33	0.74	0.87	1.03	0.72	0.83	0.92
109.0	52.40	52.44	51.99	0.79	0.92	1.09	0.76	0.86	0.96
109.5	52.53	52.20	51.44	0.81	0.95	1.12	0.78	0.89	0.98
109.6	52.69	51.95	50.86	0.82	0.96	1.13	0.79	0.90	0.99
110.0	51.71	50.92	49.24	0.85	0.99	1.17	0.81	0.91	1.02
120.0	7.63	7.58	7.46	5.31	5.73	6.40	4.49	4.77	5.14
130.0	1.26	1.35	1.45	20.78	19.90	18.94	20.17	19.13	18.01
140.0	0.70	0.76	0.82	30.94	29.33	27.07	28.55	26.51	24.01
142.0	0.64	0.69	0.75	32.60	32.89	30.77	28.85	27.77	25.52
144.0	0.60	0.65	0.70	30.98	33.55	34.87	27.74	27.82	26.49
146.0	0.56	0.61	0.65	28.51	30.99	34.93	26.25	26.94	26.67
150.0	0.50	0.54	0.58	24.96	26.38	28.73	23.69	24.54	25.28
200.0	0.26	0.30	0.32	18.69	18.43	18.17	18.42	18.29	18.13
300.0	0.14	0.20	0.22	20.24	19.41	18.90	20.22	19.34	18.79
400.0	0.12	0.18	0.21	21.29	19.97	18.94	21.20	19.92	18.90
500.0	0.12	0.18	0.22	21.17	19.97	18.69	21.10	19.91	18.61
600.0	0.11	0.18	0.23	20.84	19.66	18.27	20.80	19.57	18.11
700.0	0.10	0.18	0.23	19.93	19.13	17.69	19.90	19.02	17.57
800.0	0.12	0.21	0.28	19.55	18.49	17.02	19.46	18.39	16.90
900.0	0.15	0.25	0.31	18.53	17.79	16.56	18.46	17.70	16.43
1000.0	0.19	0.30	0.36	17.83	17.14	16.04	17.67	17.02	15.90

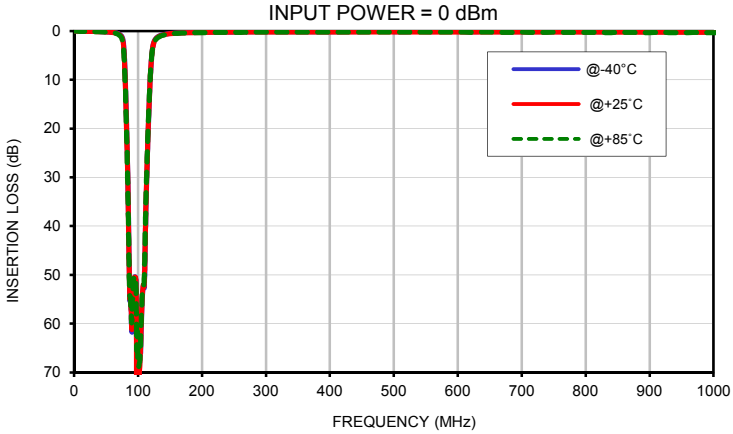
Typical Performance Data

FREQ. (MHz)	GROUP DELAY-1 (ns)		
	@-40°C	@+25°C	@+85°C
0.5	2.30	2.28	2.48
1.0	2.35	2.31	2.49
2.0	2.45	2.47	2.52
3.0	2.53	2.53	2.53
4.0	2.53	2.54	2.51
5.0	2.56	2.52	2.54
6.0	2.52	2.52	2.55
7.0	2.50	2.49	2.49
8.0	2.50	2.55	2.53
9.0	2.55	2.55	2.52
10.0	2.60	2.58	2.59
11.0	2.57	2.59	2.56
12.0	2.61	2.59	2.59
13.0	2.60	2.59	2.54
14.0	2.60	2.63	2.57
15.0	2.67	2.67	2.64
16.0	2.64	2.67	2.62
17.0	2.76	2.72	2.68
18.0	2.74	2.72	2.67
19.0	2.77	2.76	2.76
20.0	2.79	2.80	2.77
21.0	2.81	2.83	2.76
22.0	2.86	2.85	2.84
23.0	2.91	2.91	2.90
24.0	2.94	2.93	2.92
25.0	3.00	2.98	2.95
26.0	3.04	3.02	3.00
27.0	3.09	3.10	3.06
28.0	3.13	3.13	3.11
29.0	3.21	3.22	3.20
30.0	3.29	3.28	3.26
31.0	3.33	3.31	3.31
32.0	3.41	3.41	3.38
33.0	3.47	3.46	3.42
34.0	3.54	3.54	3.55
35.0	3.63	3.60	3.61
36.0	3.70	3.70	3.68
37.0	3.80	3.82	3.80
38.0	3.92	3.90	3.87
39.0	4.02	4.00	4.01
40.0	4.15	4.13	4.12
41.0	4.26	4.26	4.21
42.0	4.36	4.35	4.33
43.0	4.48	4.45	4.47
44.0	4.64	4.60	4.60
45.0	4.76	4.74	4.79
46.0	4.95	4.91	4.94
47.0	5.13	5.13	5.11
48.0	5.29	5.30	5.32
49.0	5.50	5.50	5.53
50.0	5.71	5.75	5.73
54.0	6.78	6.82	6.85
55.0	7.11	7.10	7.16
60.0	9.25	9.30	9.41
65.0	12.83	12.96	13.10
70.0	19.65	19.86	20.12

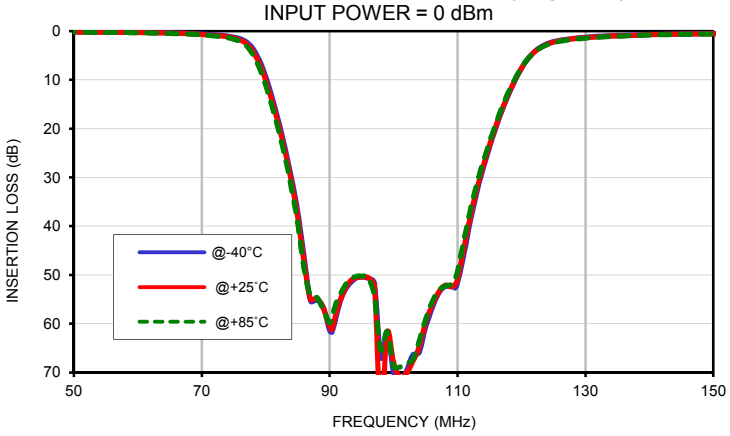
FREQ. (MHz)	GROUP DELAY-2 (ns)		
	@-40°C	@+25°C	@+85°C
146.0	6.29	6.25	6.15
150.0	5.26	5.21	5.14
160.0	3.61	3.57	3.54
170.0	2.67	2.64	2.58
180.0	2.09	2.05	2.02
190.0	1.69	1.67	1.63
200.0	1.42	1.38	1.35
210.0	1.19	1.17	1.15
220.0	1.04	1.02	0.98
230.0	0.94	0.91	0.87
240.0	0.83	0.82	0.80
242.0	0.82	0.79	0.77
250.0	0.75	0.73	0.69
260.0	0.68	0.65	0.63
270.0	0.63	0.59	0.57
280.0	0.60	0.58	0.56
290.0	0.56	0.52	0.51
300.0	0.50	0.48	0.47
310.0	0.46	0.44	0.43
320.0	0.46	0.43	0.40
330.0	0.44	0.43	0.40
340.0	0.42	0.39	0.38
350.0	0.39	0.38	0.35
400.0	0.34	0.31	0.28
450.0	0.29	0.26	0.24
500.0	0.26	0.24	0.22
510.0	0.26	0.24	0.20
520.0	0.25	0.24	0.21
530.0	0.25	0.23	0.21
540.0	0.25	0.23	0.21
550.0	0.25	0.23	0.21
560.0	0.24	0.21	0.19
570.0	0.24	0.21	0.19
580.0	0.24	0.22	0.20
590.0	0.24	0.22	0.20
600.0	0.24	0.21	0.20
610.0	0.23	0.21	0.19
620.0	0.23	0.21	0.18
630.0	0.23	0.21	0.18
640.0	0.23	0.21	0.18
650.0	0.23	0.21	0.19
660.0	0.22	0.20	0.18
670.0	0.21	0.19	0.17
680.0	0.21	0.19	0.17
690.0	0.22	0.20	0.17
700.0	0.22	0.20	0.18
710.0	0.22	0.20	0.18
720.0	0.21	0.19	0.16
730.0	0.20	0.18	0.16
740.0	0.21	0.18	0.16
750.0	0.22	0.20	0.18
800.0	0.21	0.19	0.16
850.0	0.20	0.18	0.15
900.0	0.19	0.17	0.14
950.0	0.18	0.16	0.14
1000.0	0.18	0.16	0.14

Typical Performance Curves

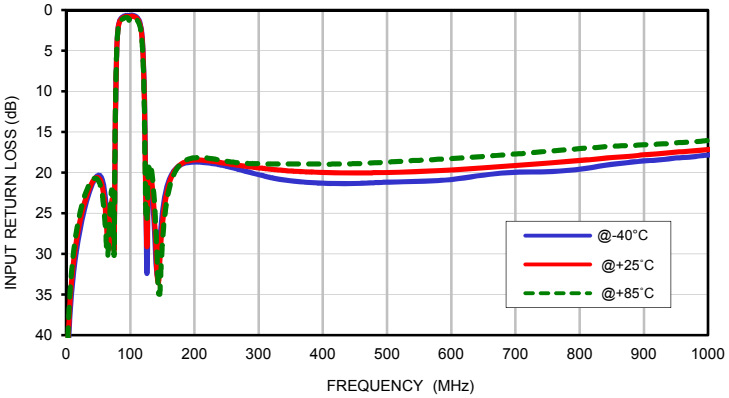
INSERTION LOSS vs. TEMPERATURE
INPUT POWER = 0 dBm



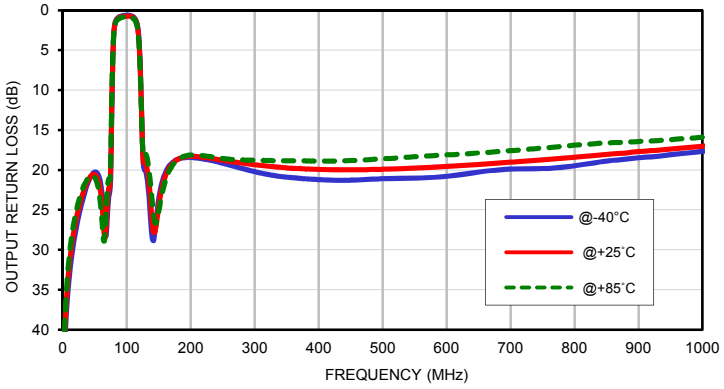
INSERTION LOSS vs. TEMPERATURE (Stop Band)
INPUT POWER = 0 dBm



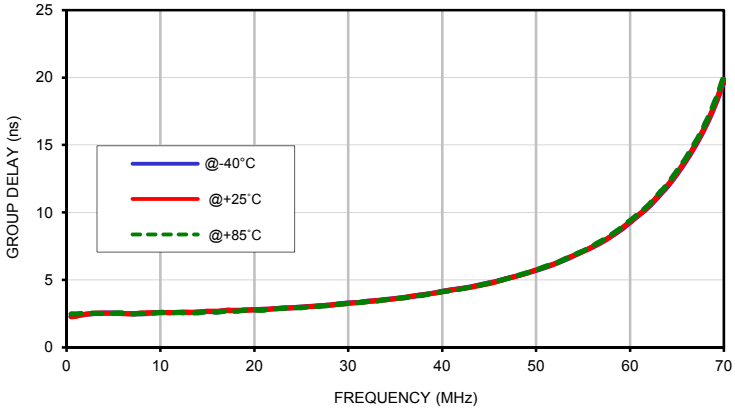
INPUT RETURN LOSS vs. TEMPERATURE
INPUT POWER = 0 dBm



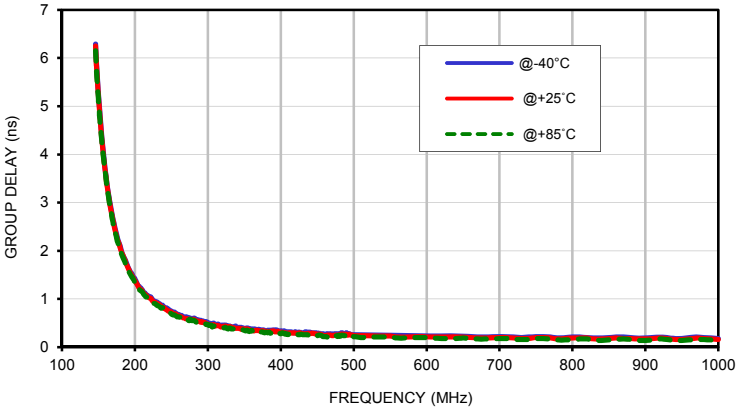
OUTPUT RETURN LOSS vs. TEMPERATURE
INPUT POWER = 0 dBm



GROUP DELAY-1 vs. TEMPERATURE
INPUT POWER = 0 dBm

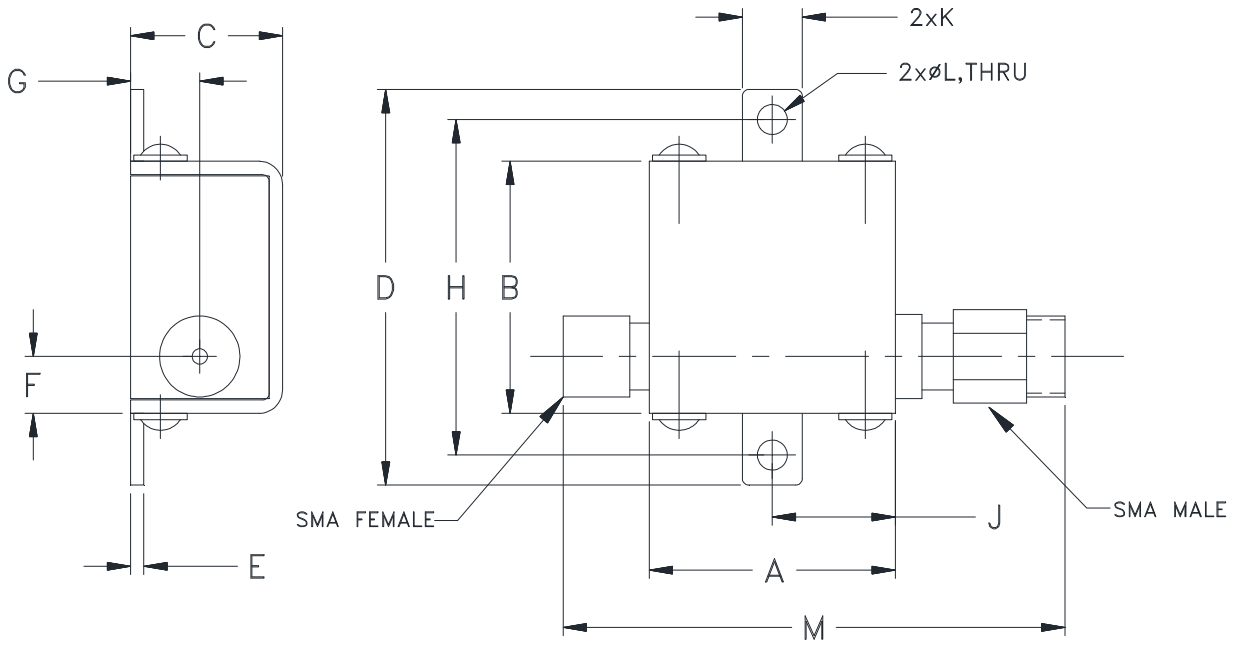


GROUP DELAY-2 vs. TEMPERATURE
INPUT POWER = 0 dBm



Case Style KD

Outline Dimensions KD1465



CASE #.	A	B	C	D	E	F	G	H	J	K	L	M	WT. GRAM
KD1465	0.74 (18.80)	.75 (19.05)	.46 (11.68)	1.18 (29.97)	.04 (1.02)	.17 (4.32)	.21 (5.33)	1.00 (25.40)	.37 (9.40)	.18 (4.57)	.09 (2.29)	1.51 (38.4)	21.4

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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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