

Coaxial Bandpass Filter

ZX75BP-A70-S+

50Ω 62 to 78 MHz

The Big Deal

- Low insertion loss of typical 1dB
- Good Matching and good out of band rejection
- Connectorized package



CASE STYLE: HY1239

Product Overview

ZX75BP-A70-S+ is a low loss bandpass filter in a rugged connectorized package covering 62 to 78 MHz. This offers lower pass band insertion loss and good rejection. It has repeatable performance across lots and consistent performance across temperature.

Key Features

Feature	Advantages
Low insertion loss	Lower insertion loss result in better SNR in receiver front end and better power delivery to antenna in transmitter.
Good matching and good out of band rejection	This filter has good matching, which enables maximum power transform and better out of band rejection results in wide spur free band.
Connectorized package	Connectorized package is easy to interface with other devices and well suited for test setups.

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



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CASE STYLE: HY1239
Connectors Model
SMA-F ZX75BP-A70-S+

Features

- Low insertion loss of 1 dB typical
- Good matching and good out of band rejection.
- Connectorized package

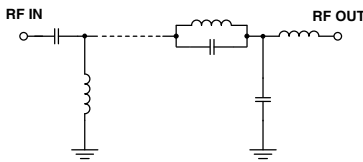
Electrical Specifications at 25°C

Parameter	F#	Frequency (MHz)	Min.	Typ.	Max.	Unit
Pass Band	Center Frequency	-	-	70	-	MHz
	Insertion Loss	F1-F2	62-78	-	1.0	dB
	VSWR	F1-F2	62-78	-	1.25	:1
Stop Band, Lower	Insertion Loss	DC-F3	1-11	50	62	dB
		F3-F4	11-29	25	33	dB
	VSWR	DC-F4	1 - 29	-	20	:1
Stop Band, Upper	Insertion Loss	F5-F6	110-250	25	32	dB
		F6-F7	250-3000	40	57	dB
		F7-F8	3000-3300	20	44	dB
	VSWR	F5-F8	110-3300	-	20	:1

Applications

- Wire-line broad band access
- IF signal processing
- Fixed satellite
- VHF Television

Functional Schematic



Maximum Ratings

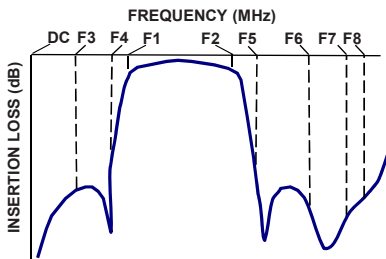
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power Input	1 W Max.

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

Typical Performance Data at 25°C

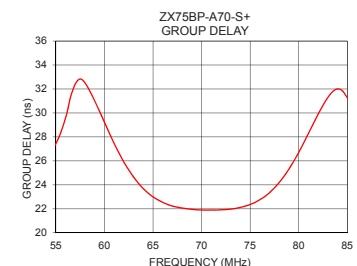
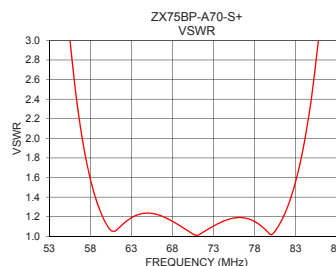
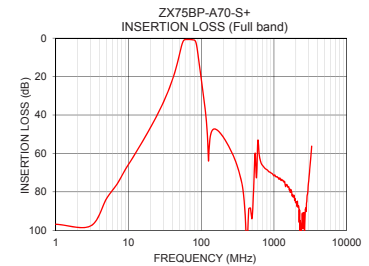
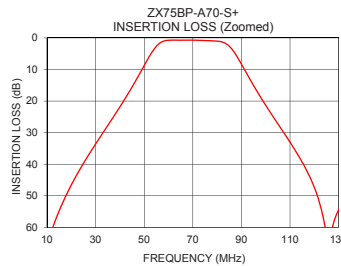
Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)	Frequency (MHz)	Group Delay (ns)
1	96.86	97.44	62.0	25.89
11	63.25	78.29	62.5	25.25
29	34.79	61.95	63.0	24.65
33	30.07	59.96	63.5	24.12
41	20.63	51.22	64.0	23.69
49	10.13	19.99	66.0	22.54
53	4.75	6.63	67.0	22.23
55	2.64	3.53	68.0	22.07
62	0.70	1.13	69.0	21.96
70	0.71	1.05	70.0	21.91
78	0.93	1.15	71.0	21.90
86	3.46	3.19	72.0	21.92
90	8.28	8.33	73.0	21.98
99	20.13	22.91	75.0	22.37
108	30.68	31.40	75.5	22.54
110	33.04	32.71	76.0	22.77
250	57.76	101.86	76.5	23.02
1000	71.65	182.89	77.0	23.35
3000	74.61	61.30	77.5	23.75
3300	56.25	57.17	78.0	24.21

Typical Frequency Response



+RoHS Compliant

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



Notes

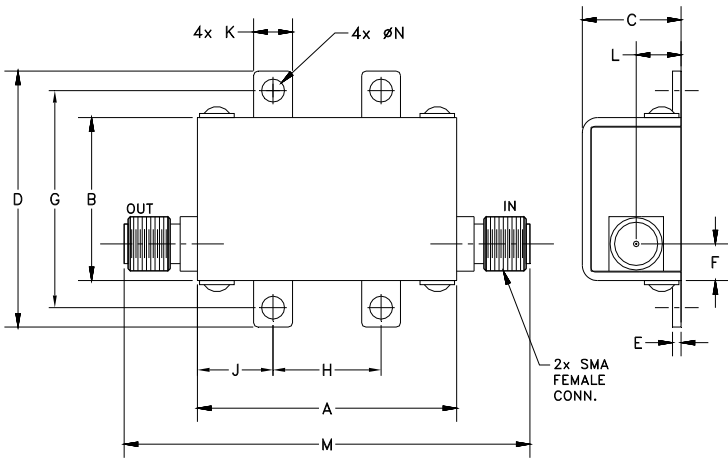
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Coaxial Connections

INPUT	SMA-FEMALE
OUTPUT	SMA-FEMALE

Outline Drawing



Outline Dimensions ($\frac{\text{inch}}{\text{mm}}$)

A	B	C	D	E	F	G
1.20	.75	.46	1.18	.04	.17	1.00
30.48	19.05	11.68	29.97	1.02	4.32	25.40
H	J	K	L	M	N	Wt.
.50	.35	.18	.21	1.88	.106	grams
12.70	8.89	4.57	5.28	47.75	2.69	35.0

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Typical Performance Data

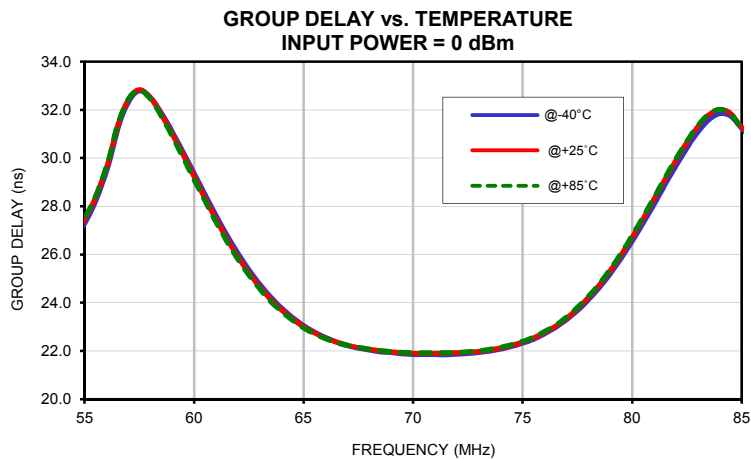
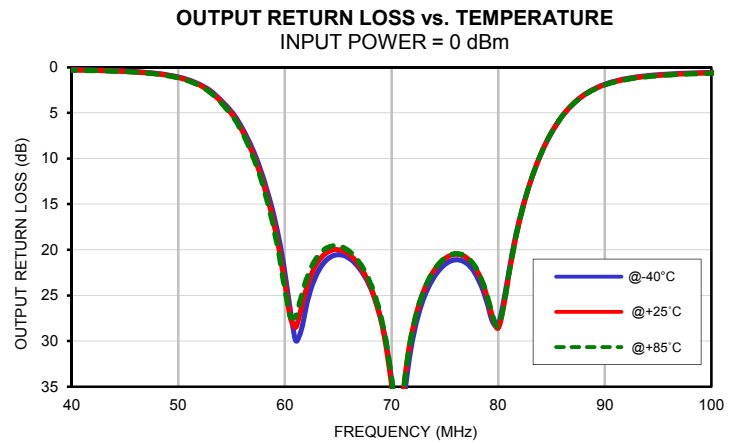
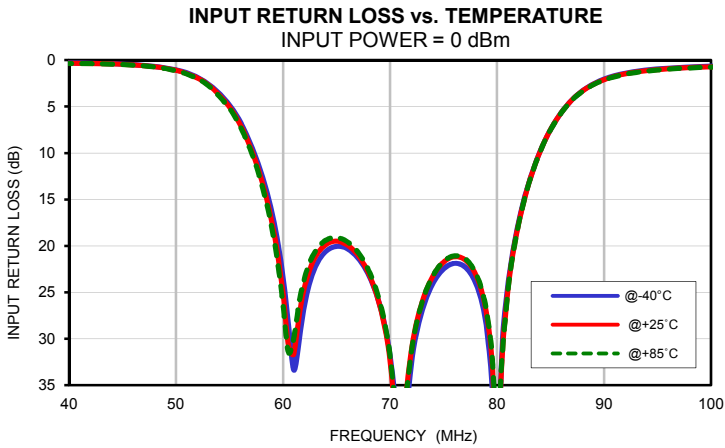
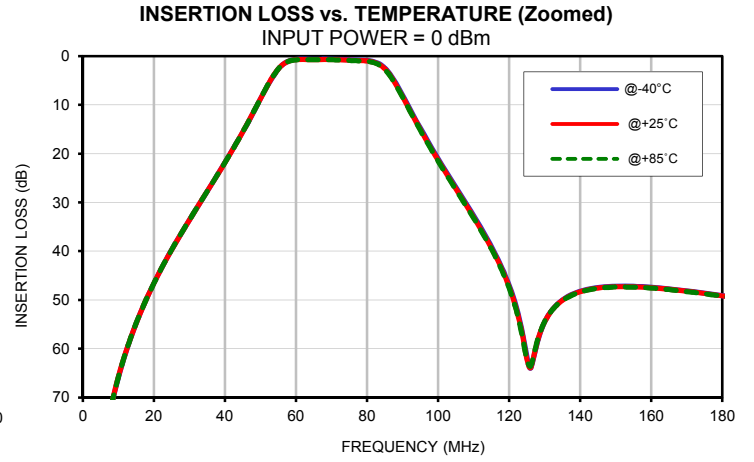
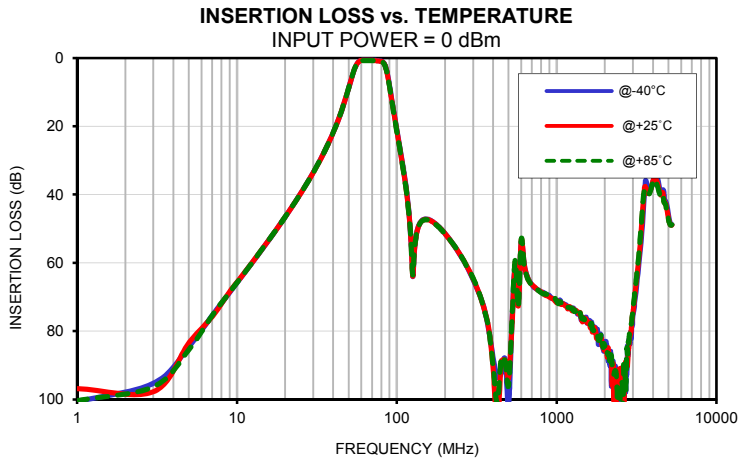
FREQ. (MHz)	INSERTION LOSS			INPUT RETURN LOSS			OUTPUT RETURN LOSS		
	(dB)			(dB)			(dB)		
	@-40°C	@+25°C	@+85°C	@-40°C	@+25°C	@+85°C	@-40°C	@+25°C	@+85°C
1	100.68	96.86	100.38	0.13	0.18	0.21	0.07	0.09	0.10
5	84.59	83.42	85.44	0.15	0.19	0.22	0.08	0.11	0.12
7	75.39	75.82	75.40	0.16	0.20	0.23	0.09	0.12	0.13
9	68.77	68.47	68.62	0.17	0.21	0.24	0.11	0.13	0.15
11	63.34	63.25	63.26	0.18	0.22	0.25	0.12	0.14	0.16
15	54.85	54.82	54.75	0.20	0.24	0.26	0.13	0.16	0.18
21	45.11	45.12	45.11	0.22	0.26	0.28	0.16	0.19	0.20
23	42.36	42.37	42.33	0.23	0.27	0.29	0.17	0.20	0.21
25	39.72	39.74	39.72	0.23	0.27	0.29	0.18	0.21	0.22
27	37.20	37.22	37.20	0.24	0.28	0.30	0.19	0.22	0.23
29	34.77	34.79	34.77	0.24	0.28	0.30	0.20	0.23	0.24
31	32.40	32.41	32.40	0.25	0.28	0.30	0.20	0.23	0.25
33	30.06	30.07	30.06	0.26	0.29	0.31	0.21	0.25	0.26
35	27.73	27.74	27.73	0.26	0.29	0.31	0.22	0.26	0.28
41	20.62	20.63	20.61	0.31	0.34	0.36	0.29	0.32	0.34
43	18.14	18.14	18.13	0.35	0.38	0.40	0.33	0.37	0.39
45	15.58	15.57	15.55	0.42	0.45	0.47	0.42	0.45	0.48
49	10.17	10.13	10.11	0.83	0.87	0.90	0.84	0.89	0.92
53	4.80	4.75	4.73	2.53	2.64	2.72	2.56	2.68	2.76
55	2.68	2.64	2.64	4.83	5.06	5.20	4.86	5.08	5.23
60	0.68	0.73	0.78	23.23	25.17	26.38	22.52	23.77	24.37
62	0.63	0.70	0.75	26.39	24.48	23.49	26.21	24.30	23.29
65	0.65	0.71	0.76	20.04	19.48	19.10	20.54	19.98	19.57
70	0.64	0.71	0.76	31.77	32.34	31.80	34.23	34.85	34.07
75	0.75	0.84	0.89	22.48	21.75	21.68	21.59	20.95	20.90
78	0.83	0.93	0.99	23.98	23.07	22.92	22.90	22.25	22.14
80	0.92	1.01	1.08	43.94	41.19	39.29	28.30	28.57	28.37
83	1.43	1.55	1.64	13.10	13.15	13.18	12.61	12.62	12.62
86	3.26	3.46	3.57	5.63	5.63	5.66	5.37	5.35	5.37
90	7.99	8.28	8.43	2.05	2.10	2.14	1.87	1.90	1.94
95	14.75	15.07	15.23	0.95	1.02	1.06	0.82	0.88	0.92
100	21.02	21.35	21.51	0.66	0.72	0.76	0.56	0.62	0.66
105	26.89	27.21	27.38	0.54	0.60	0.63	0.47	0.53	0.56
108	30.37	30.68	30.86	0.50	0.55	0.58	0.44	0.49	0.52
110	32.72	33.04	33.22	0.48	0.53	0.56	0.42	0.48	0.51
150	47.18	47.26	47.34	0.28	0.32	0.34	0.30	0.35	0.37
200	51.40	51.39	51.47	0.18	0.23	0.24	0.23	0.27	0.29
250	57.84	57.76	57.60	0.13	0.17	0.18	0.18	0.23	0.24
300	64.85	64.59	64.43	0.10	0.14	0.15	0.15	0.19	0.21
500	101.70	93.72	95.93	0.05	0.09	0.10	0.08	0.13	0.14
750	67.65	67.75	67.70	0.03	0.08	0.10	0.05	0.11	0.13
1000	71.02	71.65	71.31	0.02	0.09	0.11	0.04	0.12	0.14
1200	73.15	72.79	73.08	0.04	0.12	0.14	0.05	0.13	0.16
1400	74.95	74.58	74.61	0.04	0.13	0.15	0.04	0.14	0.18
1600	76.84	77.43	77.76	0.05	0.15	0.18	0.06	0.17	0.20
1800	79.55	81.51	81.16	0.05	0.17	0.20	0.06	0.18	0.22
2000	85.47	85.72	84.28	0.07	0.19	0.23	0.07	0.21	0.25
2100	88.83	84.86	86.86	0.07	0.19	0.23	0.07	0.21	0.26
2200	96.15	87.97	87.32	0.07	0.21	0.25	0.08	0.22	0.27
2300	92.56	94.97	91.97	0.08	0.22	0.26	0.09	0.24	0.29
2400	100.15	99.26	100.10	0.09	0.23	0.28	0.09	0.24	0.30
2500	99.95	99.07	95.96	0.09	0.24	0.28	0.10	0.25	0.31
2600	100.74	91.15	105.74	0.10	0.25	0.29	0.12	0.26	0.33
2700	97.89	88.99	97.75	0.11	0.26	0.31	0.12	0.27	0.34
2800	87.16	85.77	83.23	0.11	0.26	0.32	0.12	0.28	0.35
2900	80.27	80.82	78.41	0.12	0.28	0.33	0.12	0.29	0.35
3000	75.19	74.61	73.51	0.12	0.28	0.33	0.13	0.30	0.36
3100	70.14	68.33	67.39	0.12	0.29	0.34	0.14	0.31	0.37
3200	64.31	62.65	61.62	0.13	0.30	0.35	0.13	0.31	0.37
3300	58.45	56.25	55.07	0.13	0.30	0.36	0.14	0.33	0.39



Typical Performance Data

FREQ. (MHz)	GROUP DELAY		
	(nsec)		
	@-40°C	@+25°C	@+85°C
62.0	26.05	25.89	25.81
62.5	25.38	25.25	25.16
63.0	24.76	24.65	24.57
63.5	24.23	24.12	24.05
64.0	23.78	23.69	23.64
64.5	23.38	23.31	23.27
65.0	23.05	23.00	22.96
65.5	22.78	22.75	22.71
66.0	22.56	22.54	22.51
66.5	22.37	22.37	22.34
67.0	22.23	22.23	22.22
67.5	22.12	22.14	22.13
68.0	22.04	22.07	22.07
68.5	21.96	22.00	22.01
69.0	21.93	21.96	21.97
69.5	21.88	21.92	21.94
70.0	21.86	21.91	21.92
70.5	21.85	21.89	21.92
71.0	21.85	21.90	21.92
71.5	21.84	21.90	21.92
72.0	21.87	21.92	21.94
72.5	21.90	21.94	21.96
73.0	21.94	21.98	22.00
73.5	21.99	22.04	22.06
74.0	22.07	22.12	22.15
74.5	22.18	22.23	22.26
75.0	22.32	22.37	22.40
75.5	22.49	22.54	22.57
76.0	22.72	22.77	22.80
76.5	22.97	23.02	23.06
77.0	23.29	23.35	23.40
77.5	23.67	23.75	23.80
78.0	24.11	24.21	24.25

Typical Performance Curves

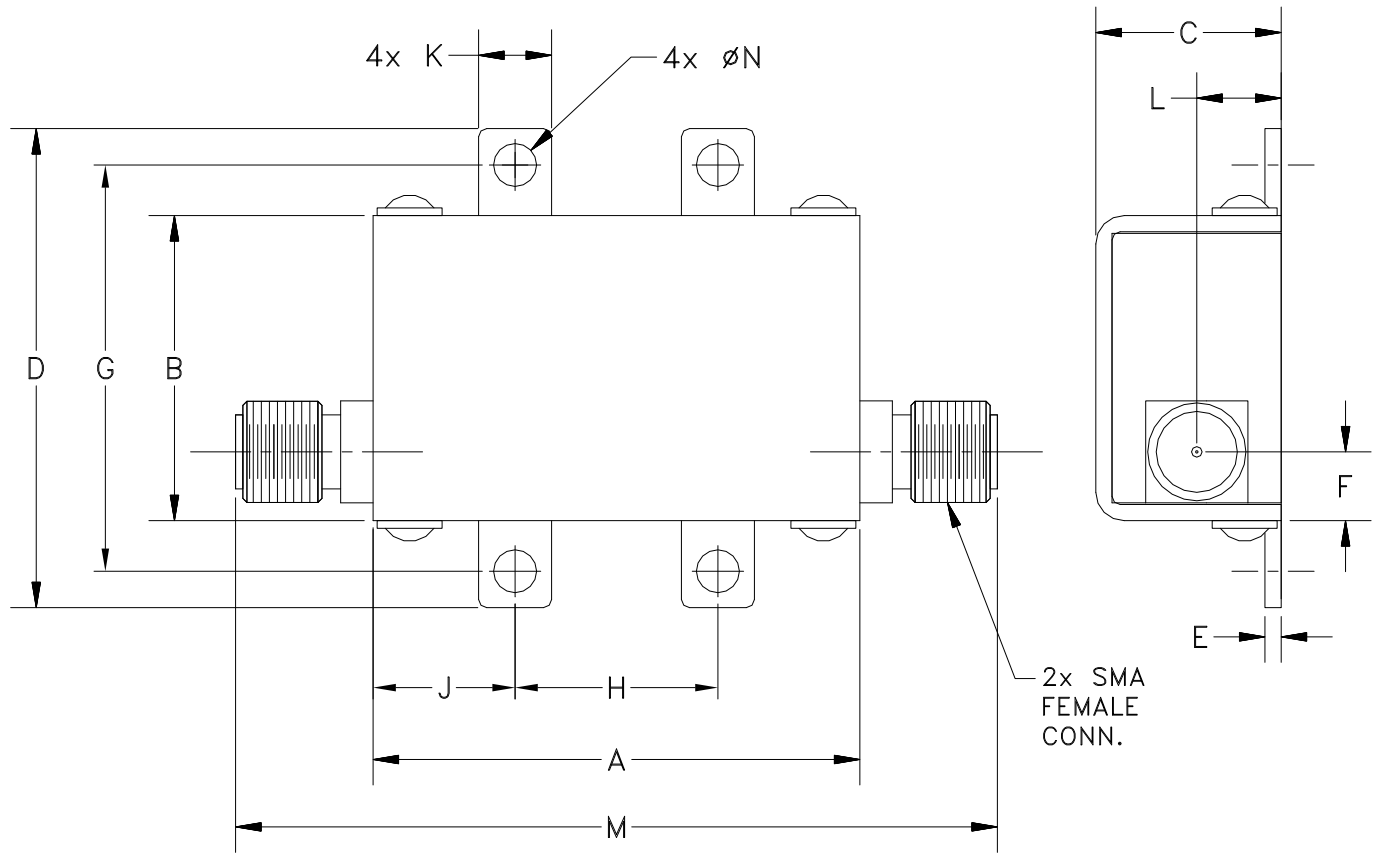


Case Style

HY

Outline Dimensions

HY1239



CASE #.	A	B	C	D	E	F	G	H	J	K	L	M	N	WT GRAMS
HY1239	1.20 (30.48)	.75 (19.05)	.46 (11.68)	1.18 (29.97)	.04 (1.02)	.17 (4.32)	1.00 (25.40)	.50 (12.70)	.35 (8.89)	.18 (4.57)	.21 (5.28)	1.88 (47.75)	.106 (2.69)	35.0

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: Nickel plate

Mini-Circuits®

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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