Coaxial

Bandpass Filter

ZX75BP-1135-S+

50Ω 900 to 1370 MHz

Generic photo used for illustration purposes only

CASE STYLE: HY1239

The Big Deal

- Low insertion loss of typical 0.6 dB
- Good matching and good out of band rejection
- Connectorized package
- High power handling, 10 W

Product Overview

ZX75BP-1135-S+ is a low loss band pass filter in a rugged connectorized package covering 900-1370 MHz. The high power handling capability of this filter finds it application in high power transmitters. The filter also offers lower passband insertion loss and good stopband rejection until 5600 MHz. In addition, 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.

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CASE STYLE: HY1239

Connectors	Model
SMA-F\F	ZX75BP-1135-S+

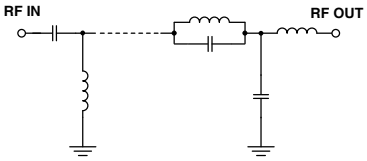
Features

- Low insertion loss of typical 0.6 dB
- Good matching and good out of band rejection
- Connectorized package

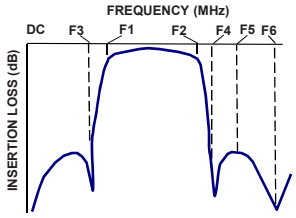
Applications

- Defence / Military
- L-Band applications
- Radio astronomy
- Wireless medical telemetry

Functional Schematic



Typical Frequency Response



+RoHS Compliant

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

Electrical Specifications at 25°C

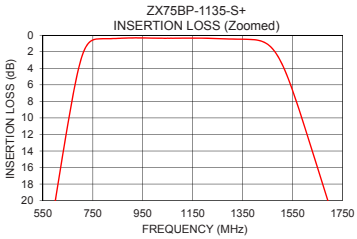
Parameter		F#	Frequency (MHz)	Min.	Typ.	Max.	Unit
Pass Band	Center Frequency	-	-	-	1135	-	MHz
	Insertion Loss	F1-F2	900 - 1370	-	0.6	1.2	dB
	VSWR	F1-F2	900 - 1370	-	1.35	1.5	:1
Stop Band, Lower	Insertion Loss	DC-F3	DC - 500	40	45	-	dB
	VSWR	DC-F3	DC - 500	-	28	-	:1
Stop Band, Upper	Insertion Loss	F4-F5	2000 - 2800	40	50	-	dB
		F5-F6	2800 - 5600	-	40	-	dB
	VSWR	F4-F6	2000 - 5600	-	28	-	:1

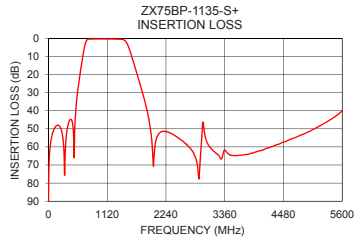
Maximum Ratings	
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power Input	10 W max. @ 25°C

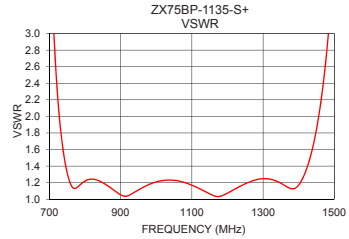
RF power derate linearly to 5 W @ 85°C
Permanent damage may occur if any of these limits are exceeded.

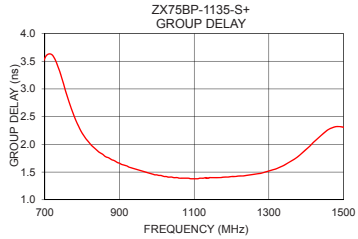
Typical Performance Data at 25°C

Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)	Frequency (MHz)	Group Delay (nsec)
1	90.92	434.30	900	1.66
105	50.27	1737.18	930	1.58
380	47.04	347.44	960	1.52
500	50.91	157.93	990	1.46
550	30.79	115.81	1020	1.42
595	20.96	72.39	1050	1.40
700	3.19	4.43	1080	1.39
900	0.33	1.05	1110	1.38
1135	0.35	1.10	1135	1.39
1370	0.50	1.14	1170	1.40
1500	3.02	3.94	1200	1.42
1700	20.85	30.49	1230	1.43
1800	30.82	37.77	1260	1.46
2000	70.72	52.65	1290	1.50
2500	55.52	78.97	1320	1.56
2800	65.71	69.49	1330	1.59
3000	55.68	59.91	1340	1.62
4000	62.36	45.72	1350	1.66
5000	51.08	38.61	1360	1.70
5600	40.11	44.55	1370	1.74









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.
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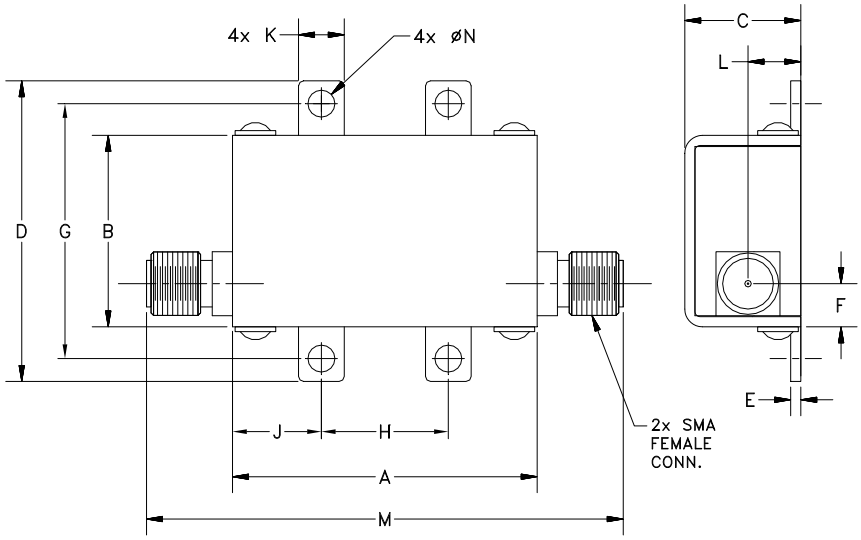
Coaxial Connections

PORT - 1	SMA-FEMALE
PORT - 2	SMA-FEMALE

Outline Drawing



Outline Dimensions (inch / 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

Note: Please refer to case style drawing for details

Coaxial Band Pass Filter ZX75BP-1135-S+

Typical Performance Data

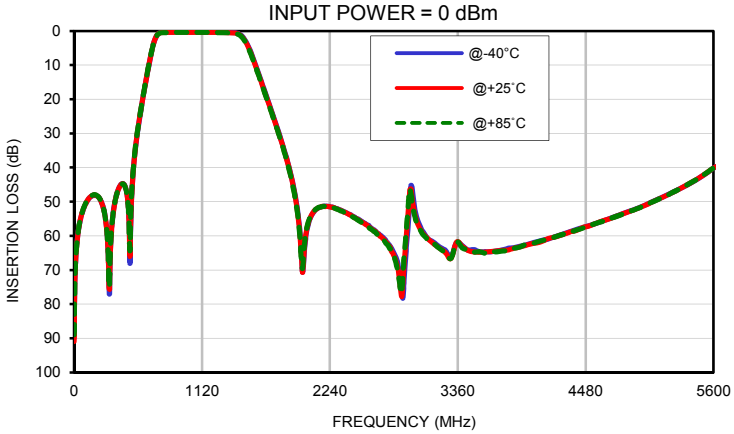
FREQ.	INSERTION LOSS			INPUT RETURN LOSS			OUTPUT RETURN LOSS		
(MHz)	(dB)			(dB)			(dB)		
	@-40°C	@+25°C	@+85°C	@-40°C	@+25°C	@+85°C	@-40°C	@+25°C	@+85°C
1	87.65	90.92	89.01	0.04	0.04	0.04	0.04	0.04	0.04
10	69.49	69.33	69.57	0.00	0.00	0.00	0.00	0.00	0.00
100	50.67	50.60	50.49	0.00	0.00	0.01	0.01	0.02	0.02
200	48.29	48.28	48.21	0.00	0.01	0.02	0.06	0.08	0.09
300	66.54	66.89	67.16	0.01	0.03	0.04	0.16	0.18	0.19
380	47.04	47.04	47.06	0.03	0.05	0.06	0.20	0.23	0.25
500	51.54	50.91	50.34	0.08	0.11	0.12	0.19	0.23	0.25
550	30.93	30.79	30.63	0.12	0.15	0.17	0.18	0.22	0.25
595	21.06	20.96	20.85	0.20	0.24	0.26	0.23	0.28	0.31
700	3.21	3.19	3.17	3.78	3.99	4.13	3.80	4.02	4.17
820	0.36	0.42	0.46	19.15	19.31	19.18	18.50	18.66	18.59
850	0.32	0.38	0.42	20.53	20.87	20.81	19.47	19.78	19.78
900	0.27	0.33	0.37	30.94	31.70	32.78	27.22	27.59	28.23
920	0.26	0.32	0.36	33.96	33.96	35.98	30.84	30.79	32.16
940	0.26	0.33	0.36	27.47	27.61	27.88	27.72	27.78	28.25
960	0.27	0.33	0.37	23.67	23.92	23.95	24.07	24.30	24.41
1000	0.29	0.35	0.39	20.19	20.48	20.44	20.35	20.63	20.65
1100	0.29	0.36	0.40	22.04	22.16	22.12	21.30	21.49	21.60
1120	0.29	0.35	0.39	24.13	24.27	24.27	22.98	23.21	23.44
1135	0.28	0.35	0.39	26.39	26.63	26.73	24.72	25.07	25.48
1200	0.29	0.36	0.41	28.67	29.01	30.00	27.85	28.15	29.40
1300	0.38	0.46	0.51	18.91	19.14	19.33	19.07	19.30	19.51
1370	0.41	0.50	0.56	23.06	23.53	23.56	24.43	25.44	26.11
1500	2.78	3.02	3.22	4.58	4.51	4.41	4.62	4.51	4.38
1600	10.92	11.24	11.49	0.93	1.00	1.04	0.74	0.79	0.81
1700	20.58	20.85	21.07	0.49	0.57	0.62	0.24	0.30	0.34
1800	30.53	30.82	31.05	0.38	0.46	0.51	0.13	0.20	0.24
2000	70.57	70.72	69.55	0.24	0.33	0.39	0.08	0.15	0.19
2500	55.36	55.52	55.73	0.12	0.22	0.29	0.04	0.12	0.17
2800	65.08	65.71	65.74	0.15	0.25	0.32	0.04	0.12	0.18
2900	67.90	64.11	62.21	0.18	0.29	0.36	0.04	0.12	0.18
3000	54.57	55.68	56.13	0.19	0.29	0.36	0.04	0.13	0.18
3100	60.86	60.94	61.17	0.19	0.29	0.35	0.04	0.13	0.19
3200	63.27	63.60	63.70	0.20	0.30	0.36	0.04	0.13	0.19
3300	66.09	66.65	66.62	0.22	0.32	0.38	0.05	0.14	0.20
3400	62.90	63.06	63.58	0.24	0.34	0.39	0.05	0.14	0.20
3500	64.03	64.73	64.80	0.25	0.35	0.40	0.05	0.14	0.20
3600	64.64	64.75	65.07	0.26	0.36	0.42	0.06	0.15	0.21
3700	64.40	64.47	64.69	0.26	0.36	0.42	0.06	0.15	0.21
3800	63.68	64.17	64.33	0.27	0.37	0.43	0.07	0.16	0.22
3900	63.12	63.29	63.32	0.27	0.38	0.44	0.08	0.17	0.23
4000	62.24	62.36	62.42	0.26	0.38	0.45	0.08	0.17	0.22
4100	61.34	61.62	61.38	0.26	0.38	0.45	0.09	0.18	0.24
4200	60.35	60.44	60.48	0.25	0.38	0.46	0.09	0.18	0.24
4300	59.32	59.42	59.41	0.25	0.38	0.46	0.09	0.18	0.24
4400	58.06	58.41	58.32	0.24	0.38	0.46	0.10	0.19	0.24
4500	57.10	57.22	57.14	0.24	0.38	0.48	0.11	0.20	0.25
4600	56.02	55.92	56.06	0.23	0.38	0.48	0.10	0.19	0.25
4700	54.79	54.88	54.86	0.23	0.38	0.49	0.11	0.20	0.25
4800	53.61	53.61	53.69	0.24	0.39	0.50	0.11	0.21	0.26
4900	52.38	52.44	52.43	0.26	0.42	0.54	0.11	0.20	0.25
5000	51.01	51.08	51.07	0.30	0.45	0.57	0.12	0.21	0.26
5100	49.46	49.52	49.59	0.29	0.44	0.56	0.12	0.21	0.26
5200	47.92	48.00	48.02	0.23	0.39	0.51	0.13	0.22	0.27
5300	46.35	46.31	46.33	0.21	0.37	0.50	0.13	0.22	0.26
5400	44.50	44.48	44.49	0.21	0.38	0.50	0.13	0.23	0.27
5450	43.57	43.53	43.48	0.20	0.37	0.50	0.14	0.23	0.27
5500	42.49	42.48	42.44	0.20	0.37	0.50	0.14	0.23	0.28
5550	41.40	41.37	41.29	0.21	0.38	0.51	0.14	0.24	0.28
5600	40.13	40.11	40.10	0.21	0.39	0.52	0.15	0.24	0.28

Typical Performance Data

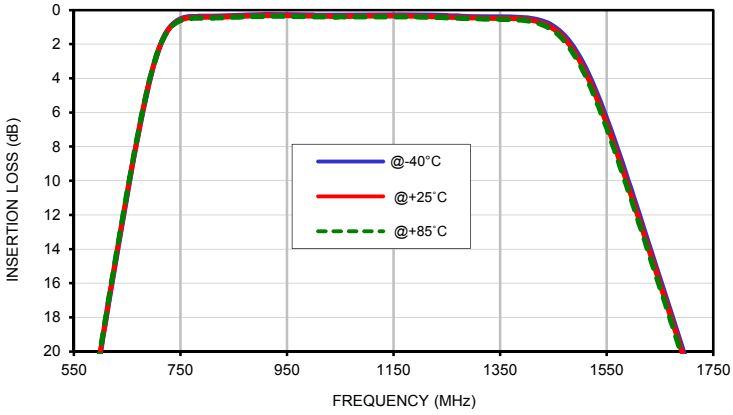
FREQ. (MHz)	GROUP DELAY (nsec)		
	@-40°C	@+25°C	@+85°C
900	1.67	1.66	1.65
910	1.64	1.63	1.63
920	1.62	1.61	1.60
930	1.59	1.58	1.58
940	1.57	1.56	1.55
950	1.55	1.54	1.53
960	1.53	1.52	1.51
970	1.51	1.50	1.49
980	1.49	1.48	1.47
990	1.47	1.46	1.46
1000	1.46	1.45	1.44
1010	1.44	1.44	1.43
1020	1.43	1.42	1.42
1030	1.42	1.41	1.41
1040	1.41	1.41	1.40
1050	1.41	1.40	1.39
1060	1.40	1.39	1.39
1070	1.40	1.39	1.39
1080	1.40	1.39	1.38
1090	1.39	1.38	1.38
1100	1.39	1.38	1.38
1110	1.39	1.38	1.38
1120	1.40	1.39	1.39
1135	1.40	1.39	1.39
1140	1.40	1.40	1.39
1150	1.40	1.40	1.39
1160	1.40	1.40	1.39
1170	1.41	1.40	1.39
1180	1.41	1.41	1.40
1190	1.42	1.41	1.41
1200	1.42	1.42	1.41
1210	1.43	1.42	1.42
1220	1.43	1.43	1.42
1230	1.44	1.43	1.43
1240	1.45	1.44	1.44
1250	1.46	1.45	1.45
1260	1.47	1.46	1.46
1270	1.48	1.47	1.47
1280	1.49	1.48	1.48
1300	1.52	1.52	1.52
1370	1.74	1.74	1.75

Typical Performance Curves

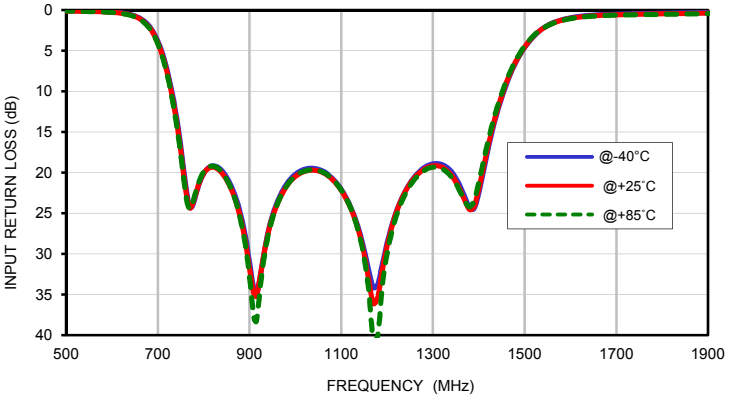
INSERTION LOSS vs. TEMPERATURE
INPUT POWER = 0 dBm



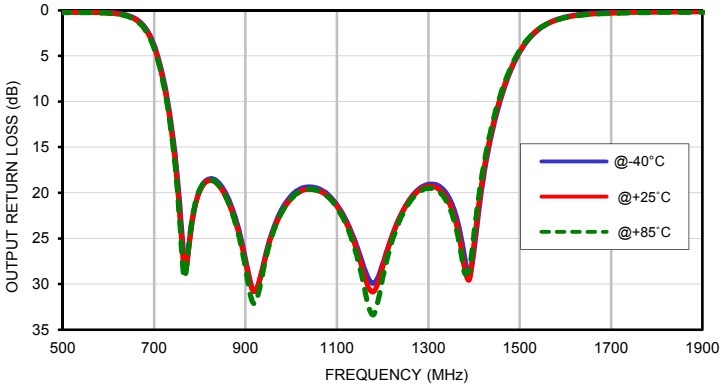
INSERTION LOSS vs. TEMPERATURE (Zoomed)
INPUT POWER = 0 dBm



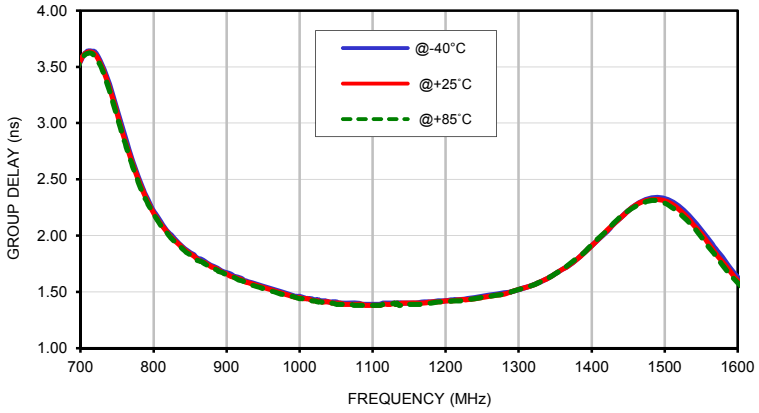
INPUT RETURN LOSS vs. TEMPERATURE
INPUT POWER = 0 dBm



OUTPUT RETURN LOSS vs. TEMPERATURE
INPUT POWER = 0 dBm



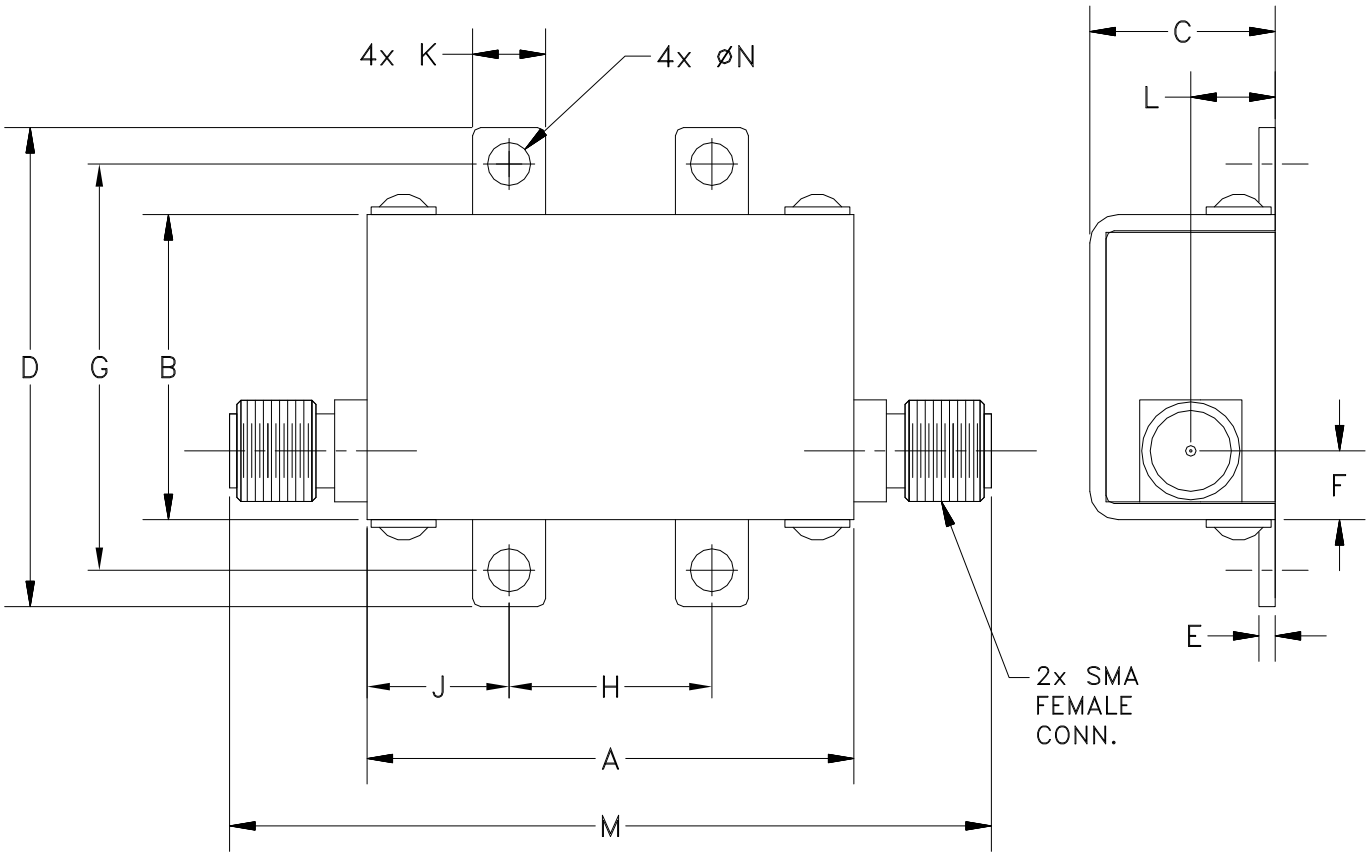
GROUP DELAY vs. TEMPERATURE
INPUT POWER = 0 dBm



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. ± .03; 3Pl. ± .015
Tolerance on hole size and interaxes dimensions to be ± .005.

Note:

1. Case material: Brass
2. Case finish: Nickel plate

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Environmental Specifications ENV46

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, Condintion 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