

Surface Mount High Pass Filter

50Ω 290 to 1200 MHz

SCHF-300



Generic photo used for illustration purposes only
CASE STYLE: YY161

Maximum Ratings

Operating Temperature -40°C to 85°C

Storage Temperature -55°C to 100°C

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

Pin Connections

RF IN	1
OUTPUT	8
GROUND	2,3,4,5,6,7

Features

- wideband, 290 to 1200 MHz passband
- low pass insertion loss
- custom models available

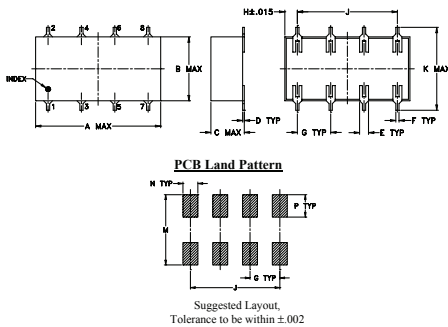
Applications

- UHF
- cellular
- defense communication
- lab use

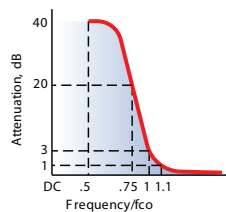
High Pass Filter Electrical Specifications

STOP BAND (MHz)	f _{co} , MHz Nom. (loss 3 dB) Typ.	PASSBAND (MHz)	VSWR (:1)		POWER INPUT (W)
			Stopband Typ.	Passband Typ.	
DC-145 (loss > 40 dB)	145-190 (loss > 20 dB)	245	290-1200 (loss < 1 dB)	18 1.5	0.5

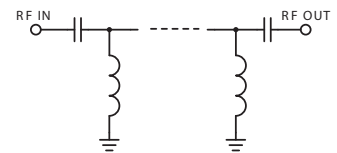
Outline Drawing



typical frequency response



electrical schematic



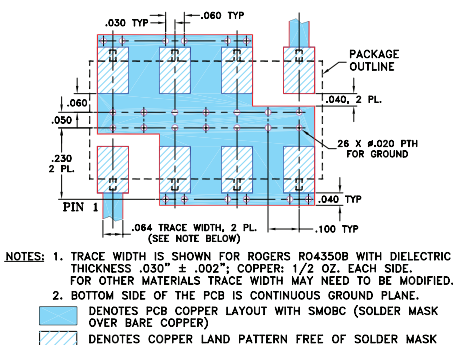
Typical Performance Data

Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)
10.00	55.73	9492.78
41.80	45.00	1438.06
57.60	44.22	1420.42
73.50	45.29	773.80
89.40	49.98	533.86
105.30	66.87	406.64
121.10	47.40	238.30
145.00	42.79	140.87
153.60	45.49	121.03
170.80	40.59	81.16
188.00	25.63	53.52
192.00	23.24	47.57
196.00	21.01	41.77
200.00	18.94	37.22
245.00	3.21	3.92
290.00	0.51	1.25
483.80	0.26	1.21
722.50	0.24	1.14
961.30	0.26	1.11
1200.00	0.33	1.28

Outline Dimensions (inch)

A	B	C	D	E	F	G
0.75	0.38	0.28	0.01	0.05	0.02	0.2
19.05	9.65	7.11	0.25	1.27	0.51	5.08
H	J	K	M	N	P	wt
0.075	0.6	0.45	0.47	0.1	0.15	grams
1.91	15.24	11.43	11.94	2.54	3.81	1.60

Demo Board MCL P/N: TB-187+ Suggested PCB Layout (PL-049)



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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REV. A
SCHF-300
EDR-3083
RAV
200811

Surface Mount High Pass Filter

SCHF-300

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
10	55.91	56.00	55.92	0.00	0.01	0.01	0.00	0.01	0.01
20	50.25	50.35	50.41	0.00	0.00	0.00	0.00	0.00	0.00
30	47.24	47.40	47.18	0.00	0.00	0.00	0.01	0.00	0.00
40	45.59	45.51	45.51	0.00	0.00	0.00	0.00	0.00	0.00
50	44.65	44.65	44.49	0.01	0.00	0.00	0.01	0.01	0.01
60	44.47	44.44	44.35	0.00	0.00	0.01	0.00	0.00	0.01
70	44.98	44.91	44.84	0.01	0.00	0.01	0.00	0.00	0.00
80	46.60	46.54	46.47	0.00	0.01	0.01	0.00	0.01	0.01
90	49.76	49.62	49.73	0.01	0.02	0.02	0.01	0.01	0.02
100	56.61	57.18	57.21	0.01	0.02	0.03	0.02	0.02	0.03
110	61.64	61.47	60.42	0.01	0.03	0.04	0.02	0.03	0.03
120	50.21	49.90	49.73	0.02	0.04	0.04	0.02	0.03	0.04
130	45.67	45.67	45.59	0.03	0.04	0.05	0.03	0.05	0.06
140	44.00	43.94	43.92	0.05	0.06	0.07	0.05	0.06	0.07
150	44.84	44.99	45.03	0.06	0.08	0.09	0.06	0.07	0.09
160	53.59	54.13	54.92	0.07	0.09	0.10	0.06	0.09	0.10
170	43.52	43.13	42.54	0.09	0.11	0.12	0.08	0.10	0.12
180	32.79	32.63	32.36	0.11	0.14	0.16	0.11	0.13	0.15
188	27.07	26.99	26.82	0.15	0.18	0.20	0.15	0.17	0.19
192	24.60	24.56	24.41	0.17	0.21	0.23	0.17	0.20	0.21
196	22.34	22.30	22.21	0.20	0.24	0.26	0.20	0.22	0.25
200	20.24	20.23	20.13	0.23	0.28	0.30	0.23	0.26	0.28
210	15.48	15.48	15.46	0.37	0.42	0.45	0.36	0.39	0.42
220	11.38	11.39	11.38	0.65	0.71	0.75	0.64	0.68	0.72
230	7.90	7.91	7.91	1.22	1.30	1.34	1.20	1.26	1.32
240	5.10	5.09	5.10	2.25	2.38	2.45	2.23	2.34	2.41
245	3.97	3.96	3.96	3.01	3.17	3.27	2.97	3.12	3.21
250	3.04	3.02	3.02	3.94	4.14	4.26	3.91	4.09	4.22
260	1.71	1.70	1.70	6.26	6.59	6.82	6.23	6.54	6.77
270	0.97	0.97	0.97	9.05	9.55	9.96	9.03	9.51	9.92
280	0.60	0.61	0.62	12.09	12.77	13.46	12.07	12.77	13.43
290	0.41	0.43	0.45	15.18	16.05	17.11	15.19	16.08	17.14
300	0.30	0.34	0.35	18.16	19.17	20.69	18.19	19.23	20.80
350	0.15	0.21	0.23	26.47	26.17	27.63	27.22	26.77	28.37
400	0.13	0.19	0.21	25.04	23.43	23.44	25.53	23.76	23.57
450	0.12	0.18	0.20	22.76	21.44	20.83	23.05	21.65	20.93
500	0.13	0.18	0.21	21.44	20.70	19.89	21.52	20.79	19.90
550	0.12	0.17	0.21	21.07	20.79	19.94	21.05	20.83	19.93
600	0.11	0.15	0.19	21.13	21.35	20.37	21.06	21.32	20.27
700	0.06	0.11	0.15	22.61	23.46	21.97	22.27	23.05	21.59
800	0.05	0.10	0.14	25.87	27.01	24.67	24.87	25.66	23.75
900	0.05	0.10	0.15	32.09	32.40	28.95	28.34	28.17	26.47
1000	0.07	0.13	0.17	38.40	39.05	34.50	30.13	28.89	28.17
1200	0.08	0.15	0.19	26.25	28.43	29.34	24.54	25.94	26.25
1500	0.14	0.22	0.27	20.23	21.45	22.76	20.13	21.26	22.12
2000	0.26	0.34	0.39	15.12	15.84	17.61	15.29	16.03	17.62
2500	0.13	0.22	0.34	12.35	14.31	15.87	12.35	14.28	15.62
3000	0.13	0.30	0.49	20.14	24.91	33.68	18.58	20.57	20.88
3500	0.70	1.01	1.33	10.36	9.82	9.45	10.64	9.92	9.48
4000	3.29	3.50	3.60	3.55	3.55	3.68	3.53	3.47	3.61
4500	6.74	6.87	6.98	1.95	2.19	2.47	1.83	1.93	2.01
5000	10.97	10.69	10.40	1.16	1.31	1.48	1.68	1.61	1.65
5500	12.07	12.23	12.26	1.09	1.33	1.50	0.49	0.76	1.03
6000	12.13	12.02	11.87	1.09	1.49	1.73	0.29	0.66	1.06

REV. X2

SCHF-300

101102

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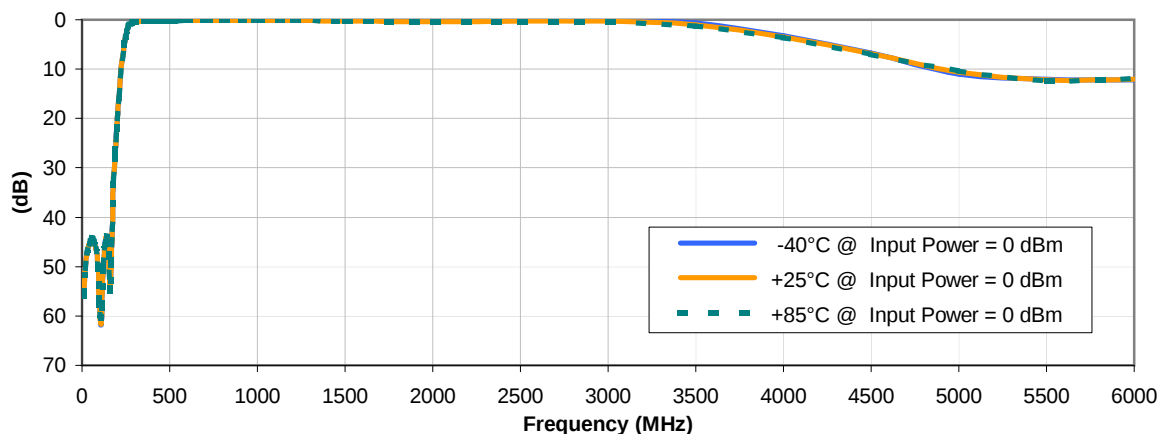


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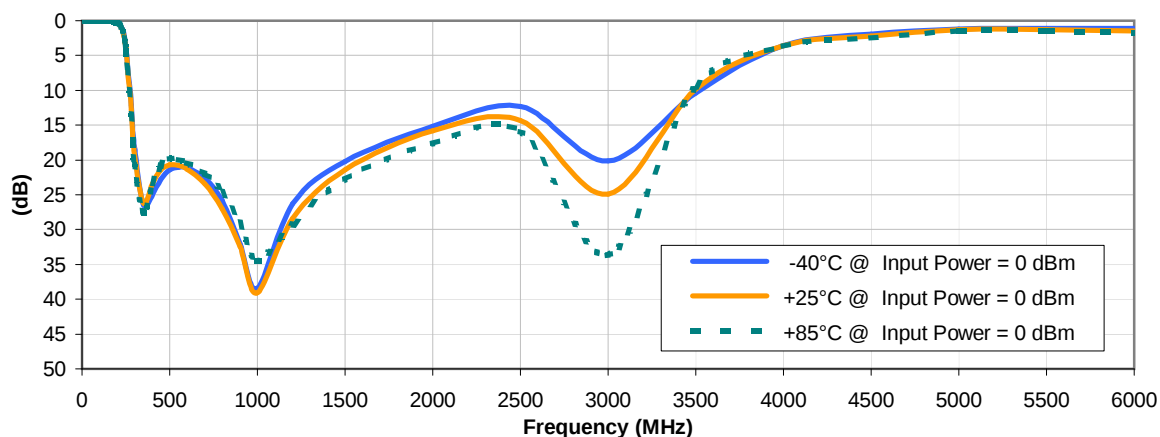


Typical Performance Curves

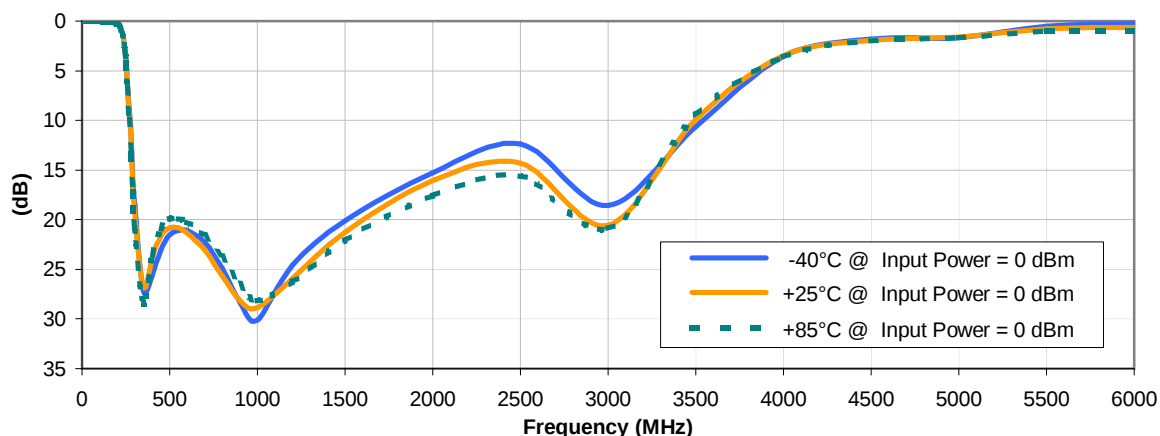
INSERTION LOSS vs. TEMPERATURE



INPUT RETURN LOSS vs. TEMPERATURE

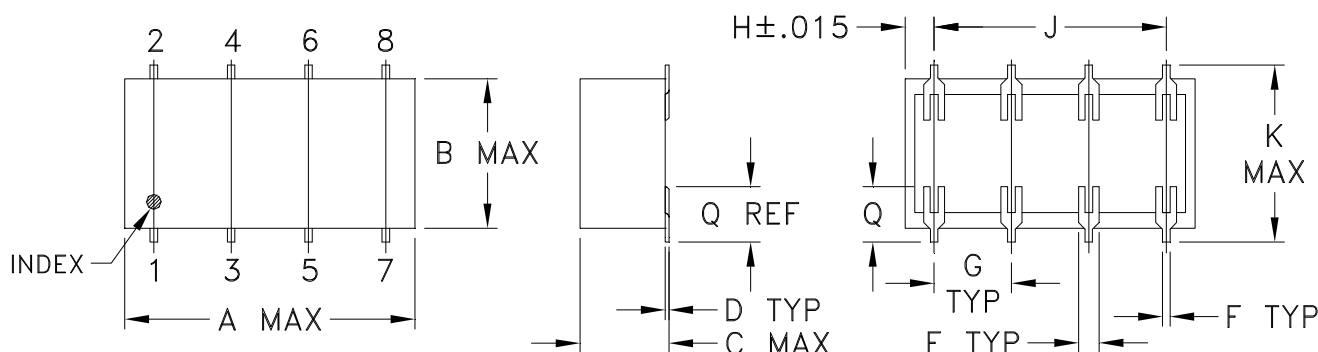


OUTPUT RETURN LOSS vs. TEMPERATURE

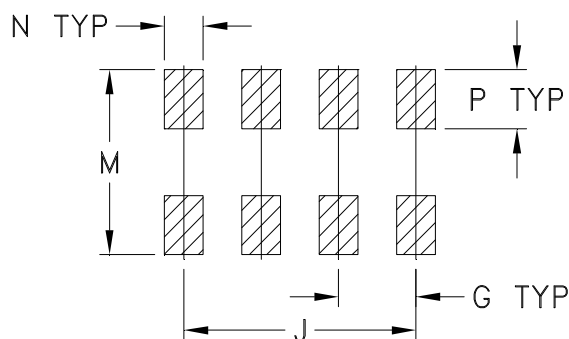


Outline Dimensions

YY101
YY109
YY161



PCB Land Pattern



Suggested Layout
Tolerance to be within $\pm.002$

CASE#	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	WT. GRAM S
YY101*			.20 (5.08)							.450 (11.43)	--	.470 (11.94)				1.6
YY109*	.75 (19.05)	.38 (9.65)	.20 (5.08)	.010 (0.25)	.050 (1.27)	.020 (0.51)	.200 (5.08)	.075 (1.91)	.600 (15.24)	.720 (18.29)	--	.740 (18.80)	.100 (2.54)	.150 (3.81)	.148 (3.76)	1.6
YY161			.28 (7.11)							.450 (11.43)	--	.470 (11.94)				1.6

Dimensions are in inches (mm). Tolerances: 2 Pl. $\pm .01$; 3 Pl. $\pm .005$

Notes:

- Case material: Plastic.
- Termination finish:
For RoHS Case Styles: Tin plate over Nickel plate.
For RoHS-5 Case Styles: Tin-Lead plate.
- Special Tolerances: Termination thickness $\pm .003$ inch.
- * Denotes: For SCM mixers, long termination version (case YY109) is available upon request, consult factory. To order short termination version (case YY101) add -NL suffix.



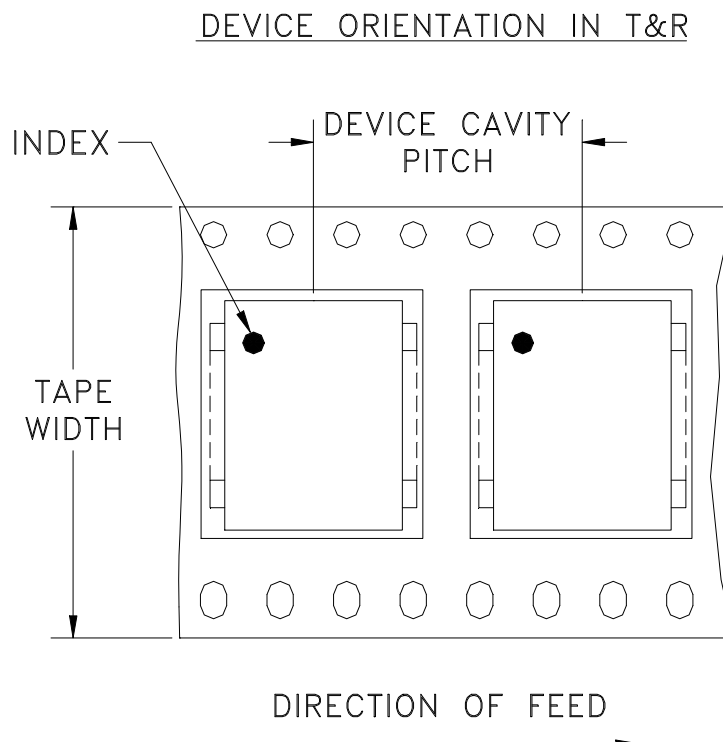
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32	16	13	500

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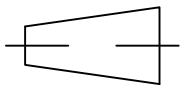


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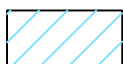
REV	ECN No.	DESCRIPTION	DATE	DR	AUTH
OR	M81561	NEW RELEASE	09/11/02	GF	ABD
A	M101145	ADDED YY101 CASE STYLE & NOTE 2	10/07/05	MMG	ABD
B	M102713	ADDED "...WITH SMOBC"	01/16/06	GT	IL
C	M165986	TB-187+ (WAS TB-187)	02/01/18	ITG	IL

NOTES: 1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .030" $\pm$.002"; COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.

2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.



DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)



DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

UNLESS OTHERWISE SPECIFIED	INITIALS		DATE
DIMENSIONS ARE IN INCHES	DRAWN	GF	08/12/02
TOLERANCES ON:	CHECKED	AV	09/11/02
2 PL DECIMALS ±	APPROVED	ABD	09/11/02
3 PL DECIMALS ± .005			
ANGLES ±			
FRACTIONS ±			



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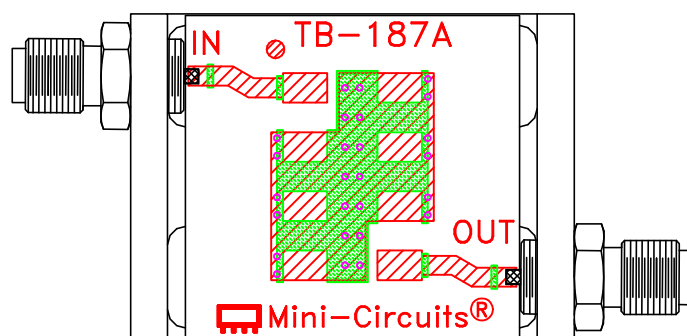
PL, cr, YY101/YY161, SCLF, TB-187+

SIZE A	CODE IDENT 15542	DRAWING NO: 98-PL-049		REV: C
FILE: 98PL049		SCALE: 5:1	SHEET: 1 OF 1	

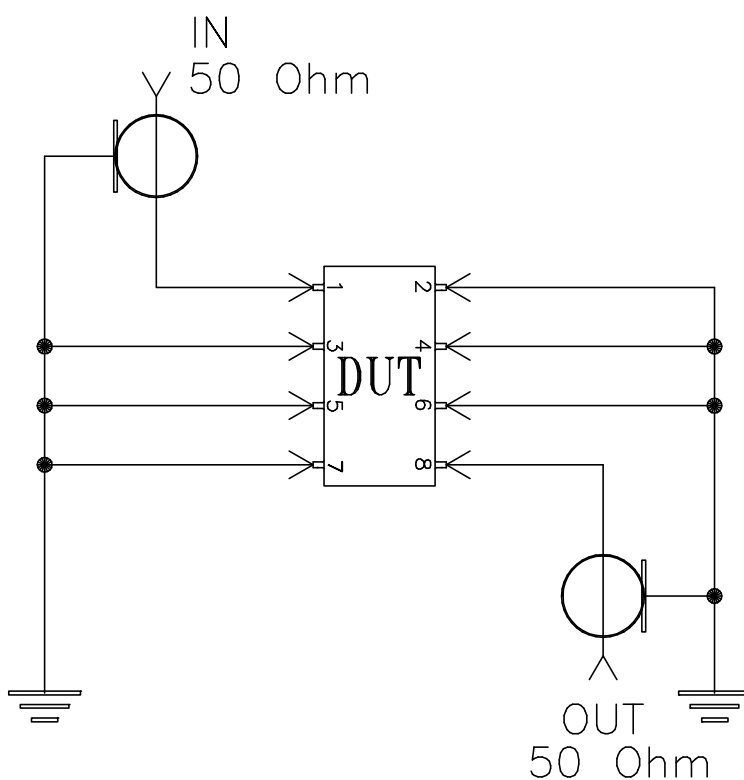
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ASHEETA1.DWG REV:A DATE:01/12/95

Evaluation Board and Circuit



TB-187+



Schematic Diagram

Notes:

1. SMA Female connectors.
2. PCB Material: Rogers R04350 or equivalent,
Dielectric Constant=3.5, Thickness=.030 inch.

 **Mini-Circuits®**



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 Ambient Environment	Individual Model Data Sheet
Storage Temperature	-55° to 100° C Ambient Environment	Individual Model Data Sheet
Humidity	90 to 95% RH, 240 hours, 50°C	MIL-STD-202, Method 103, Condition A, Except 50°C and end-point electrical test done within 12 hours
Thermal Shock	-55° to 100°C, 100 cycles	MIL-STD-202, Method 107, Condition A-3, except +100°C
Solder Reflow Heat	Sn-Pb Eutetic Process: 225°C peak Pb-Free Process 245° - 250°C peak	J-STD-020, Table 4-1, 4-2 and 5-2, Figure 5-1
Solderability	10X Magnification	J-STD-002, 95% Coverage
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, 11 ms, 1/2-sine, 18 shocks: 3 each direction, each of 3 axes	MIL-STD-202, Method 213, Condition A
Marking Resistance to Solvents	Isopropyl alcohol + mineral spirits at 25°C; terpene defluxer at 25°C; distilled water + proylene glycol monomethyl ether + monoethanolamine at 63°C to 70°C	MIL-STD-202, Method 215