DC Pass, High Power
Bi-Directional Coupler SYBD-ED12832/4

Important Note

This model has been designed, built and tested in our engineering department. Performance data represents model capability.
At present it is a non-catalog model. On request, we can supply a final specification sheet, part number and price/delivery information.

Please click "Back", and then click "Contact Us" for Applications support.

CASE STYLE : JB1233

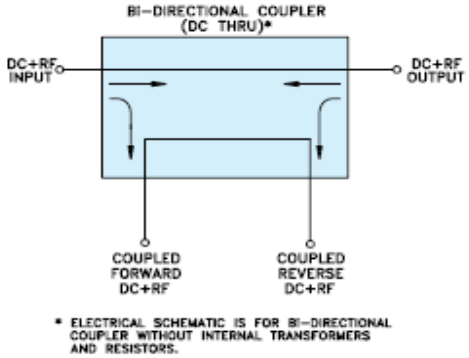
ELECTRICAL SPECIFICATIONS 50Ω @ +25°C					
Parameter		**Min.**	**Typ.**	**Max.**	**Units**
Frequency		960		1400	MHz
Coupling	**Nominal**		23.7±0.8		dB
	Flatness		±1.9		dB
Mainline Loss **	**960-1400 MHz**		0.08		dB
Directivity	**960-1400 MHz**		20		dB
VSWR	**960-1400 MHz**		1.15		(:1)
RF Power Input	**960-1400 MHz**			50	W

Note: ** Mainline loss includes theoretical coupled power loss of 0.0186dB at 23.7dB coupling.

MAXIMUM RATINGS	
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
DC Current	2A

PIN CONNECTIONS	
INPUT	1
OUTPUT	2
COUPLED FORWARD	4
COUPLED REVERSE	3
GROUND	5

Electrical Schematic



* ELECTRICAL SCHEMATIC IS FOR BI-DIRECTIONAL COUPLER WITHOUT INTERNAL TRANSFORMERS AND RESISTORS.

Bi-Directional Coupler SYBD-ED12832/4

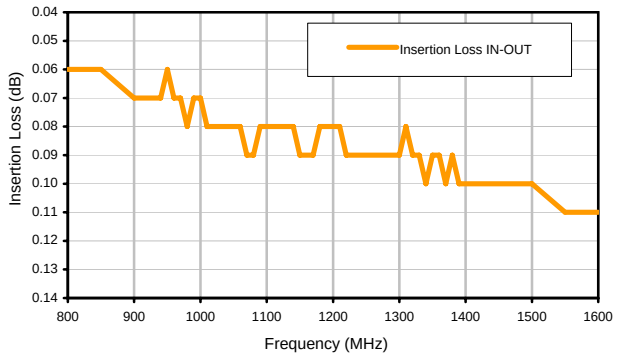
Typical Performance Data

FREQ. (MHz)	INSERTION LOSS (dB)	COUPLING (dB)		DIRECTIVITY (dB)		RETURN LOSS (dB)			
	IN-OUT	IN-FWD	OUT-REV	IN-REV	OUT-FWD	IN	OUT	FWD	REV
800.0	0.06	27.01	27.01	26.12	23.70	26.58	26.58	24.21	24.39
850.0	0.06	26.50	26.50	25.68	23.17	26.16	26.06	23.58	23.77
900.0	0.07	26.04	26.03	25.04	22.44	25.49	25.42	23.06	23.25
940.0	0.07	25.69	25.68	24.73	22.08	25.12	25.00	22.71	22.83
950.0	0.06	25.59	25.58	24.69	22.04	25.07	24.95	22.64	22.77
960.0	0.07	25.50	25.50	24.64	21.92	24.99	24.88	22.59	22.72
970.0	0.07	25.42	25.42	24.54	21.80	24.90	24.80	22.52	22.65
980.0	0.08	25.34	25.33	24.42	21.64	24.80	24.69	22.45	22.57
990.0	0.07	25.25	25.25	24.31	21.50	24.70	24.57	22.38	22.49
1000.0	0.07	25.17	25.17	24.21	21.38	24.60	24.48	22.33	22.43
1010.0	0.08	25.09	25.09	24.08	21.25	24.52	24.39	22.28	22.37
1020.0	0.08	25.01	25.01	23.94	21.10	24.41	24.29	22.21	22.29
1030.0	0.08	24.93	24.93	23.86	20.98	24.32	24.18	22.13	22.22
1040.0	0.08	24.85	24.85	23.82	20.88	24.25	24.10	22.06	22.16
1050.0	0.08	24.78	24.78	23.71	20.81	24.20	24.07	22.01	22.12
1060.0	0.08	24.70	24.70	23.60	20.75	24.16	24.05	21.98	22.07
1070.0	0.09	24.62	24.62	23.55	20.68	24.11	24.03	21.93	22.03
1080.0	0.09	24.55	24.54	23.44	20.58	24.06	23.96	21.88	21.97
1090.0	0.08	24.47	24.46	23.35	20.49	23.99	23.91	21.85	21.91
1100.0	0.08	24.39	24.39	23.32	20.40	23.97	23.88	21.83	21.89
1110.0	0.08	24.32	24.32	23.22	20.30	23.93	23.83	21.83	21.87
1120.0	0.08	24.25	24.24	23.17	20.19	23.87	23.77	21.83	21.87
1130.0	0.08	24.18	24.17	23.08	20.10	23.80	23.69	21.83	21.86
1140.0	0.08	24.10	24.10	23.03	20.05	23.75	23.65	21.83	21.87
1150.0	0.09	24.03	24.03	22.96	19.96	23.73	23.63	21.86	21.88
1160.0	0.09	23.97	23.96	22.89	19.87	23.72	23.59	21.87	21.90
1170.0	0.09	23.90	23.90	22.79	19.78	23.66	23.58	21.88	21.88
1180.0	0.08	23.82	23.82	22.74	19.68	23.63	23.56	21.87	21.88
1190.0	0.08	23.76	23.75	22.64	19.62	23.60	23.53	21.86	21.85
1200.0	0.08	23.69	23.68	22.53	19.51	23.59	23.52	21.87	21.85
1210.0	0.08	23.62	23.62	22.48	19.42	23.58	23.52	21.88	21.85
1220.0	0.09	23.56	23.55	22.38	19.32	23.56	23.49	21.89	21.85
1230.0	0.09	23.48	23.48	22.29	19.24	23.52	23.47	21.90	21.86
1240.0	0.09	23.42	23.42	22.17	19.12	23.50	23.45	21.94	21.91
1250.0	0.09	23.36	23.35	22.09	19.05	23.51	23.46	21.99	21.96
1260.0	0.09	23.30	23.29	22.03	18.98	23.51	23.49	22.06	22.03
1270.0	0.09	23.24	23.24	21.91	18.88	23.52	23.50	22.12	22.10
1280.0	0.09	23.18	23.17	21.81	18.84	23.53	23.52	22.18	22.17
1290.0	0.09	23.11	23.10	21.75	18.77	23.56	23.55	22.24	22.25
1300.0	0.09	23.05	23.04	21.71	18.74	23.61	23.59	22.31	22.29
1310.0	0.08	22.99	22.98	21.68	18.68	23.64	23.62	22.37	22.34
1320.0	0.09	22.93	22.92	21.65	18.63	23.67	23.66	22.42	22.39
1330.0	0.09	22.87	22.86	21.54	18.53	23.70	23.69	22.47	22.42
1340.0	0.10	22.80	22.80	21.46	18.48	23.71	23.71	22.53	22.49
1350.0	0.09	22.75	22.75	21.35	18.38	23.76	23.76	22.60	22.57
1360.0	0.09	22.69	22.69	21.26	18.31	23.80	23.81	22.73	22.66
1370.0	0.10	22.64	22.63	21.20	18.25	23.85	23.86	22.85	22.78
1380.0	0.09	22.57	22.56	21.15	18.19	23.91	23.90	22.97	22.92
1390.0	0.10	22.53	22.52	21.07	18.12	23.97	23.96	23.10	23.04
1400.0	0.10	22.47	22.46	21.02	18.07	24.04	24.02	23.22	23.17
1450.0	0.10	22.20	22.20	20.65	17.64	24.47	24.38	23.69	23.65
1500.0	0.10	21.93	21.93	20.48	17.50	25.06	24.90	24.61	24.57
1550.0	0.11	21.68	21.69	20.29	17.27	25.71	25.59	25.56	25.65
1600.0	0.11	21.45	21.45	20.00	17.01	26.59	26.55	26.85	26.86

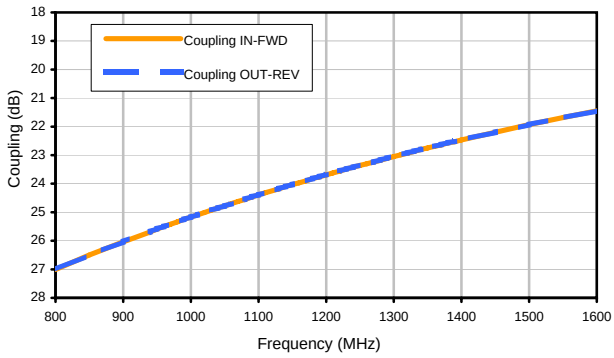
Bi-Directional Coupler SYBD-ED12832/4

Typical Performance Curves

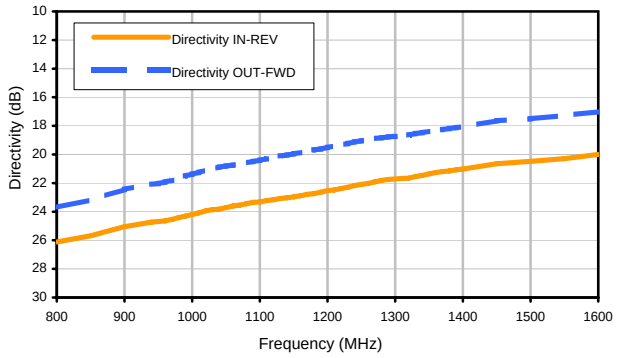
Insertion Loss



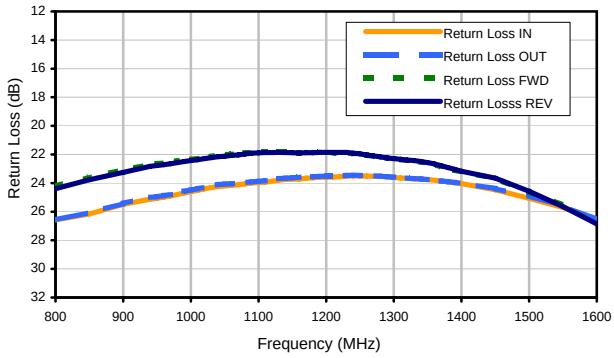
Coupling



Directivity



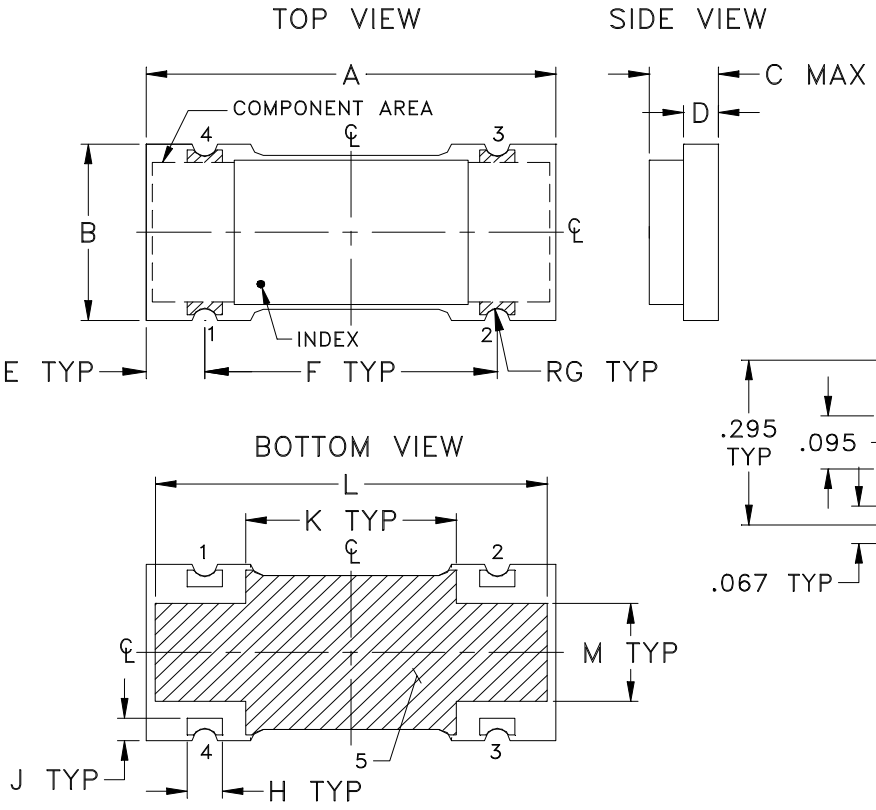
Return Loss



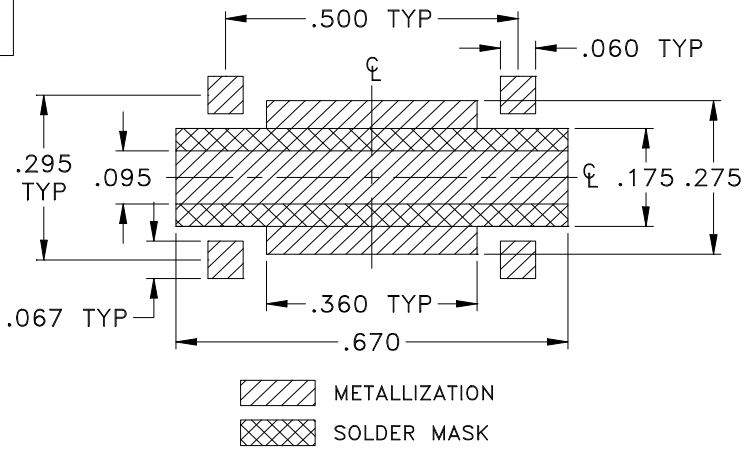
Case Style JB

JB1233

Outline Dimensions



PCB Land Pattern



Suggested Layout,
Tolerance to be within ±.002

CASE #.	A	B	C	D	E	F	G	H	J	K	L	M	WT, GRAM
JB1233	.70 (17.78)	.32 (8.13)	.13 (3.30)	.060 (1.52)	.100 (2.54)	.500 (12.70)	.022 (0.56)	.060 (1.52)	.040 (1.02)	.360 (9.14)	.670 (17.02)	.175 (4.45)	0.68

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

Notes:

1. Open style, Base material: Printed wiring laminate.
2. Termination finish: 3-5 µ inch (.08-.13 microns) Gold over 120-240 µ inch (3.05-6.10 microns) Nickel plate.
   All models, (+) suffix.

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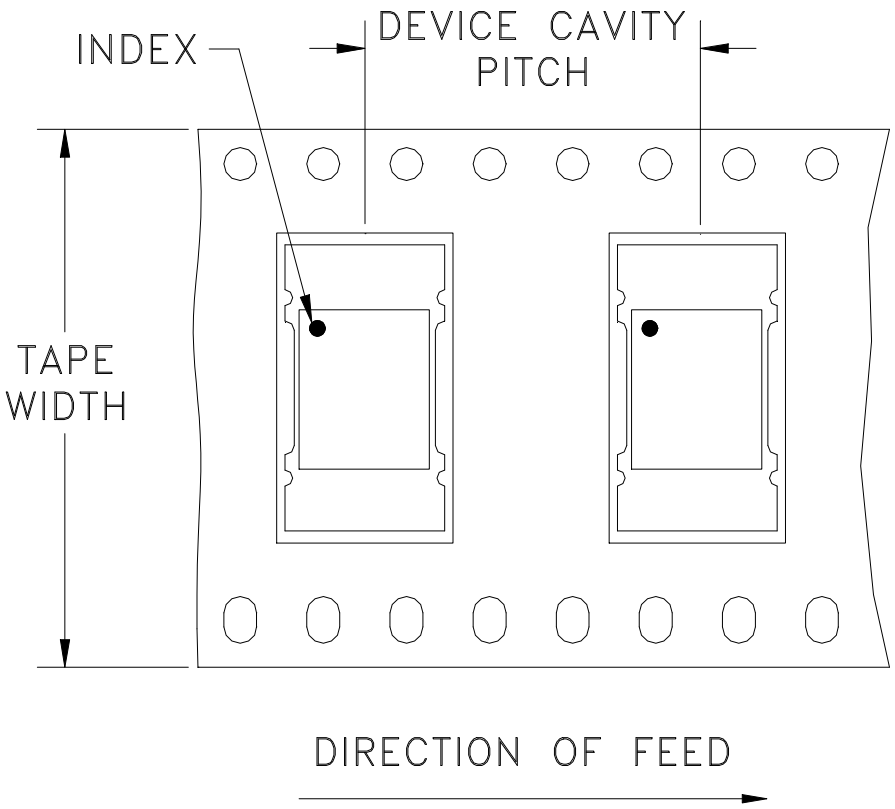
Tape & Reel Packaging TR-F84

DEVICE ORIENTATION IN T&R



Tape Width, mm	Device Cavity Pitch, mm	Reel Size, inches	Devices per Reel
32	12	13	500

Mini-Circuits carrier tape materials provide protection from ESD (Electro-Static Discharge) during handling and transportation. Tapes are static dissipative and comply with industry standards EIA-481/EIA-541.

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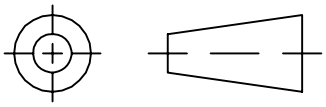
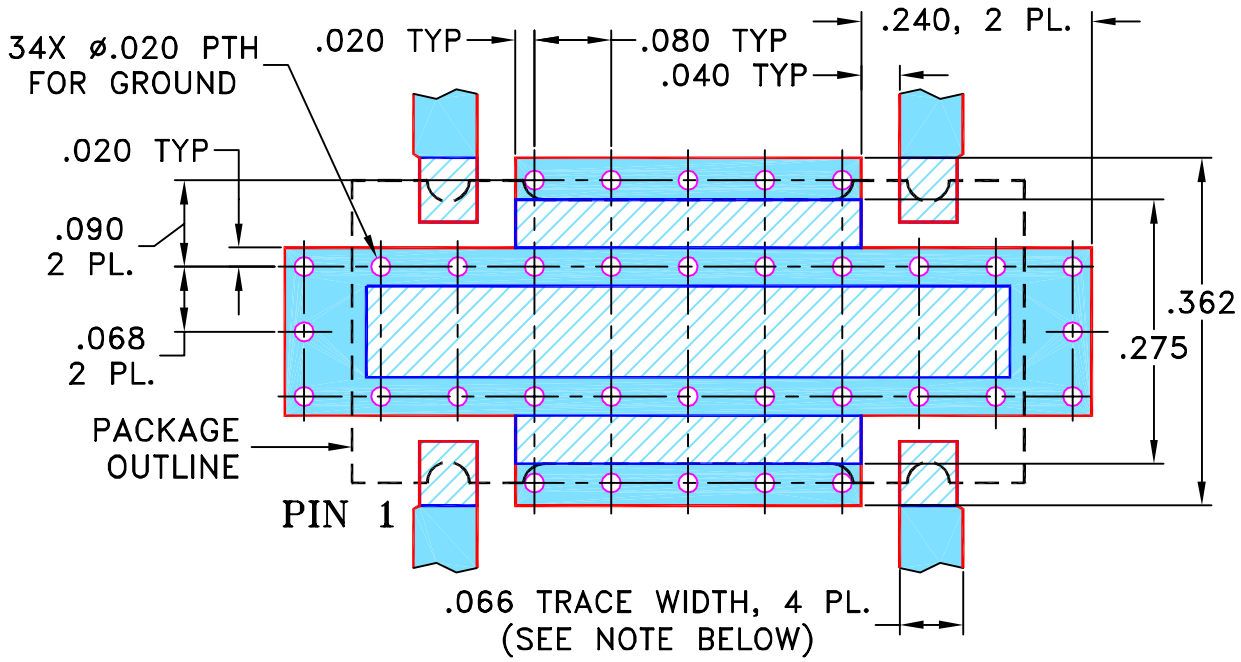
THIRD ANGLE PROJECTION



REVISIONS

REV	ECN No.	DESCRIPTION	DATE	DR	AUTH
OR	M109017	NEW RELEASE	12/29/06	MMG	WP

SUGGESTED MOUNTING CONFIGURATION FOR JB1233 CASE STYLE, "rw" PIN CONNECTION



NOTES:
1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .030" ± .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	MMG	12/21/06
TOLERANCES ON:	CHECKED	AV	12/29/06
2 PL DECIMALS ±	APPROVED	WP	12/29/06
3 PL DECIMALS ± .005			
ANGLES ±			
FRACTIONS ±			

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

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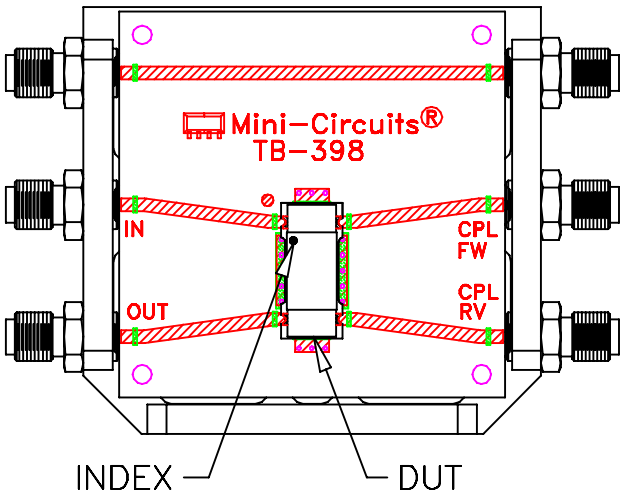
PL, rw, JB1233, SYBD, TB-398

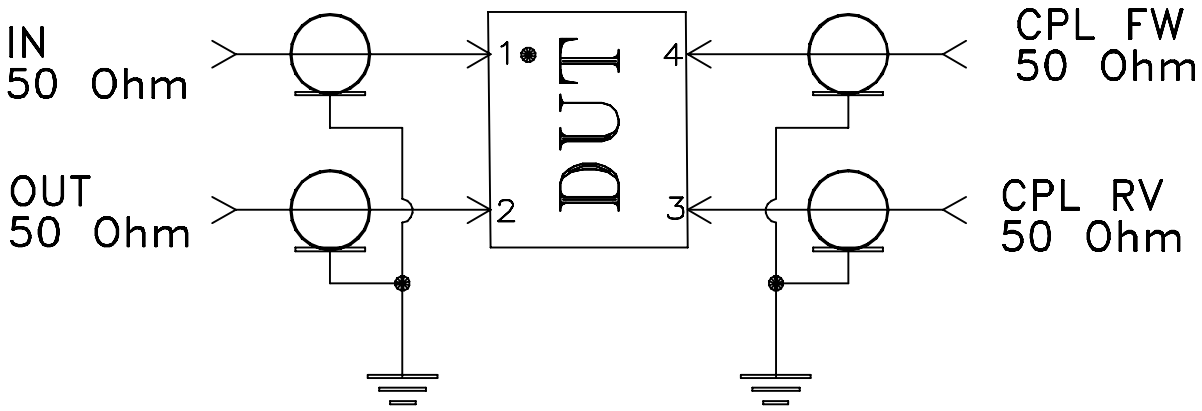
SIZE	CODE IDENT	DRAWING NO:	REV:
A	15542	98-PL-260	OR

FILE:	SCALE:	SHEET:
98PL260	5:1	1 OF 1

Evaluation Board and Circuit



TB-398



Schematic Diagram

Notes:

1. SMA Female connectors.
2. PCB Material: Rogers RO4350 or equivalent, Dielectric Constant=3.5, Thickness=.030 inch.

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Environmental Specifications ENV02T1

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