Engineering Development Model

Power Splitter/Combiner ADP-ED12390A/2

2 Way-0°

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 : CD636

ELECTRICAL SPECIFICATIONS 75Ω @ +25°C					
Parameter		**Min.**	**Typ.**	**Max.**	**Units**
Frequency		2		1500	MHz
Isolation	**2-20 MHz**		32		dB
	20-750 MHz		27		dB
	750-1500 MHz		19		dB
Insertion Loss Above 3.0 dB	**2-20 MHz**		0.20		dB
	20-750 MHz		0.30		dB
	750-1500 MHz		0.75		dB
Phase Unbalance	**2-20 MHz**		0.05		deg.
	20-750 MHz		0.25		deg.
	750-1500 MHz		0.45		deg.
Amplitude Unbalance	**2-20 MHz**		0.01		dB
	20-750 MHz		0.05		dB
	750-1500 MHz		0.20		dB
VSWR	**SUM Port**		1.20		(:1)
	OUT Ports		1.20		(:1)

MAXIMUM RATINGS	
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C

PIN CONNECTIONS	
SUM PORT	1
PORT 1	3
PORT 2	4
GROUND	6
NOT USED	2,5

Functional Diagram

2 Way-0° Power Splitter/Combiner ADP-ED12390A/2

Typical Performance Data

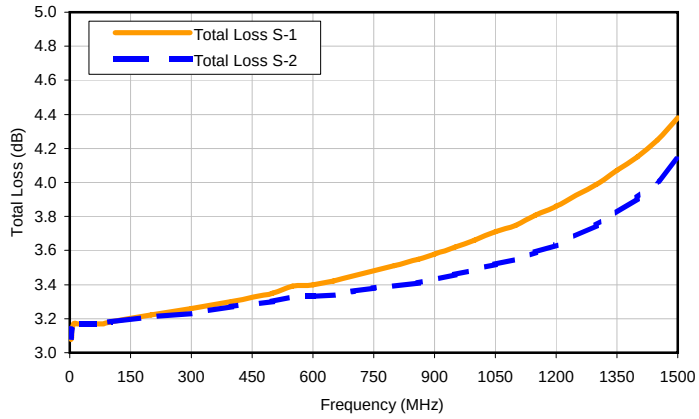
FREQUENCY (MHz)	TOTAL LOSS[1] (dB)		AMPLITUDE UNBALANCE (dB)	ISOLATION (dB)	PHASE UNBALANCE (Deg)	FREQUENCY (MHz)	VSWR (:1)		
	S-1	S-2		1-2			S	1	2
2.0	3.14	3.14	0.01	29.36	0.05	2.0	1.37	1.37	1.37
3.0	3.08	3.09	0.01	31.05	0.05	3.0	1.22	1.25	1.24
4.0	3.10	3.10	0.00	32.35	0.04	4.0	1.15	1.19	1.18
5.0	3.12	3.13	0.01	33.58	0.04	5.0	1.11	1.16	1.15
10.0	3.17	3.17	0.01	36.09	0.00	10.0	1.05	1.11	1.10
20.0	3.17	3.17	0.00	35.52	0.00	20.0	1.02	1.10	1.09
30.0	3.17	3.17	0.00	34.98	0.00	30.0	1.01	1.09	1.09
40.0	3.17	3.17	0.00	34.81	0.01	40.0	1.00	1.09	1.09
50.0	3.17	3.17	0.00	34.69	0.02	50.0	1.00	1.09	1.09
60.0	3.17	3.17	0.00	34.63	0.02	60.0	1.01	1.09	1.08
80.0	3.17	3.17	0.00	34.77	0.04	80.0	1.02	1.09	1.08
100.0	3.18	3.18	0.00	34.99	0.04	100.0	1.03	1.09	1.08
200.0	3.22	3.21	0.01	37.20	0.14	200.0	1.07	1.12	1.10
300.0	3.26	3.23	0.02	39.03	0.23	300.0	1.10	1.15	1.13
400.0	3.30	3.27	0.03	35.63	0.31	400.0	1.13	1.17	1.15
500.0	3.35	3.30	0.05	30.91	0.40	500.0	1.14	1.19	1.17
550.0	3.39	3.33	0.06	28.98	0.44	550.0	1.15	1.19	1.17
600.0	3.40	3.33	0.07	27.30	0.37	600.0	1.15	1.20	1.17
650.0	3.42	3.34	0.08	25.99	0.40	650.0	1.15	1.20	1.18
700.0	3.45	3.36	0.09	24.73	0.40	700.0	1.16	1.20	1.18
750.0	3.48	3.38	0.10	23.62	0.47	750.0	1.16	1.19	1.18
800.0	3.51	3.39	0.12	22.61	0.43	800.0	1.16	1.19	1.18
860.0	3.55	3.41	0.14	21.55	0.47	860.0	1.17	1.18	1.17
900.0	3.58	3.43	0.15	20.94	0.40	900.0	1.17	1.17	1.17
950.0	3.62	3.46	0.16	20.20	0.39	950.0	1.18	1.17	1.16
1000.0	3.66	3.49	0.17	19.59	0.33	1000.0	1.19	1.16	1.15
1050.0	3.71	3.52	0.19	19.05	0.34	1050.0	1.20	1.15	1.15
1100.0	3.75	3.55	0.20	18.62	0.18	1100.0	1.21	1.15	1.14
1150.0	3.81	3.59	0.21	18.26	0.11	1150.0	1.22	1.14	1.13
1200.0	3.86	3.63	0.23	17.94	0.03	1200.0	1.24	1.14	1.12
1300.0	3.99	3.75	0.24	17.58	0.26	1300.0	1.25	1.14	1.12
1350.0	4.07	3.82	0.25	17.46	0.42	1350.0	1.26	1.14	1.12
1400.0	4.15	3.91	0.25	17.35	0.65	1400.0	1.26	1.14	1.12
1450.0	4.25	4.01	0.24	17.19	0.84	1450.0	1.27	1.15	1.12
1500.0	4.38	4.13	0.24	16.94	1.04	1500.0	1.27	1.16	1.13

[1]Total Loss = Insertion Loss + 3dB Splitter Loss

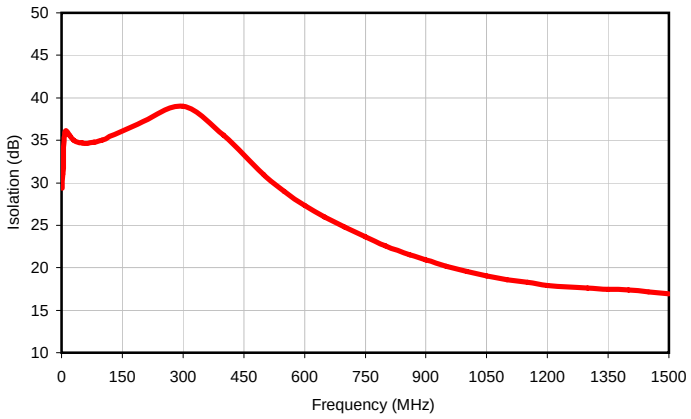
2 Way-0° Power Splitter/Combiner ADP-ED12390A/2

Typical Performance Curves

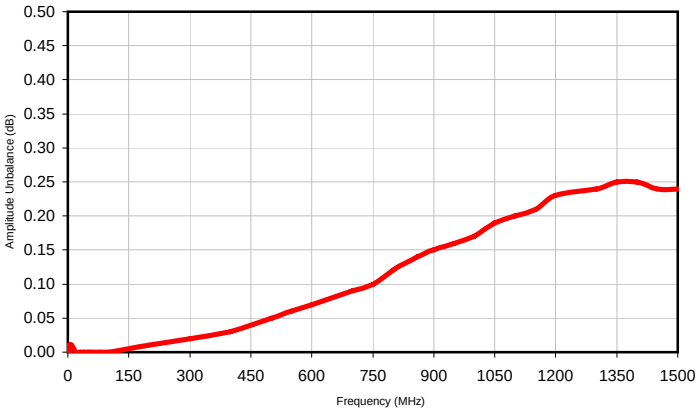
Total Loss



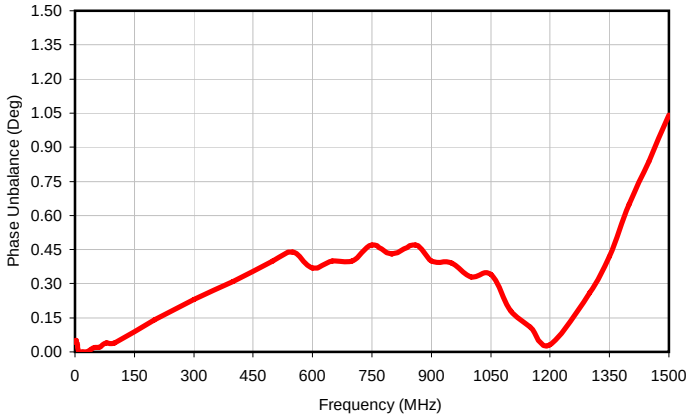
Isolation



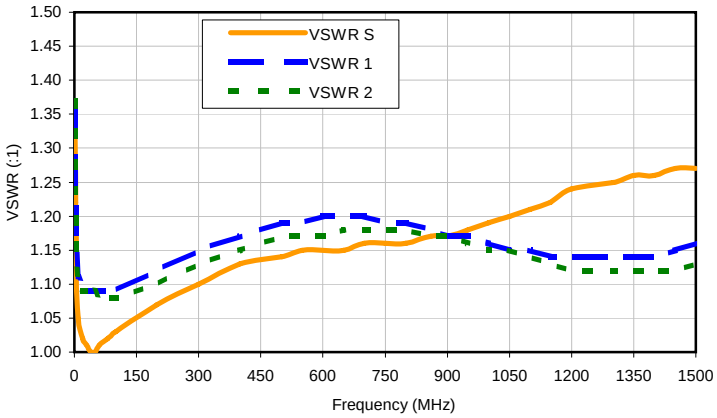
Amplitude Unbalance



Phase Unbalance



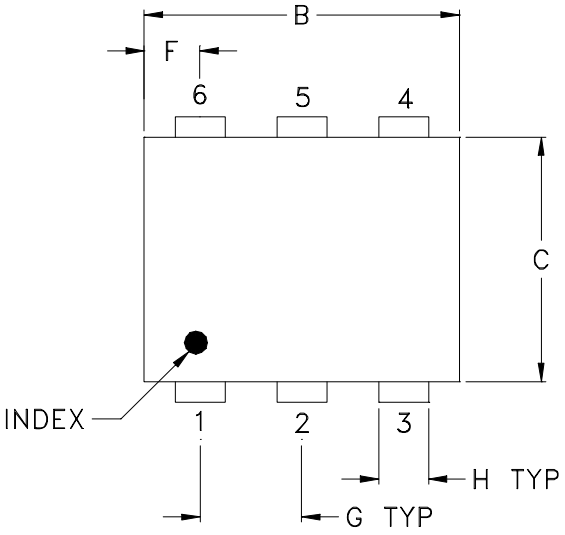
VSWR

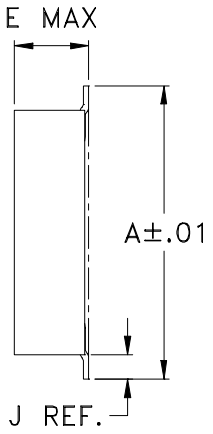


Case Style CD

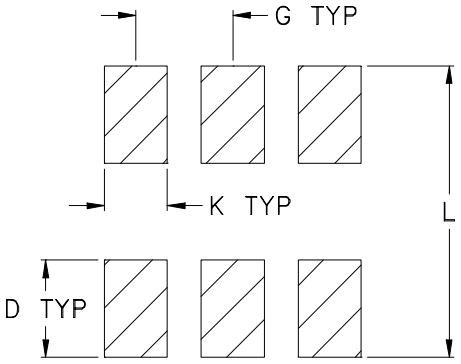
CD541
CD542
CD636
CD637

Outline Dimensions





PCB Land Pattern



Suggested Layout,
Tolerance to be within ±.002

CASE#	A	B	C	D	E	F	G	H	J	K	L	WT, GRAM
CD541	.272 (6.91)	.310 (7.87)	.220 (5.58)	.100 (2.54)	.082 (2.08)	.055 (1.40)	.100 (2.54)	.030 (0.76)	.026 (0.66)	.065 (1.65)	.300 (7.62)	.15
CD542					.112 (2.84)							.20
CD636					.162 (4.11)							.25
CD637					.206 (5.23)							.40

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

Notes:

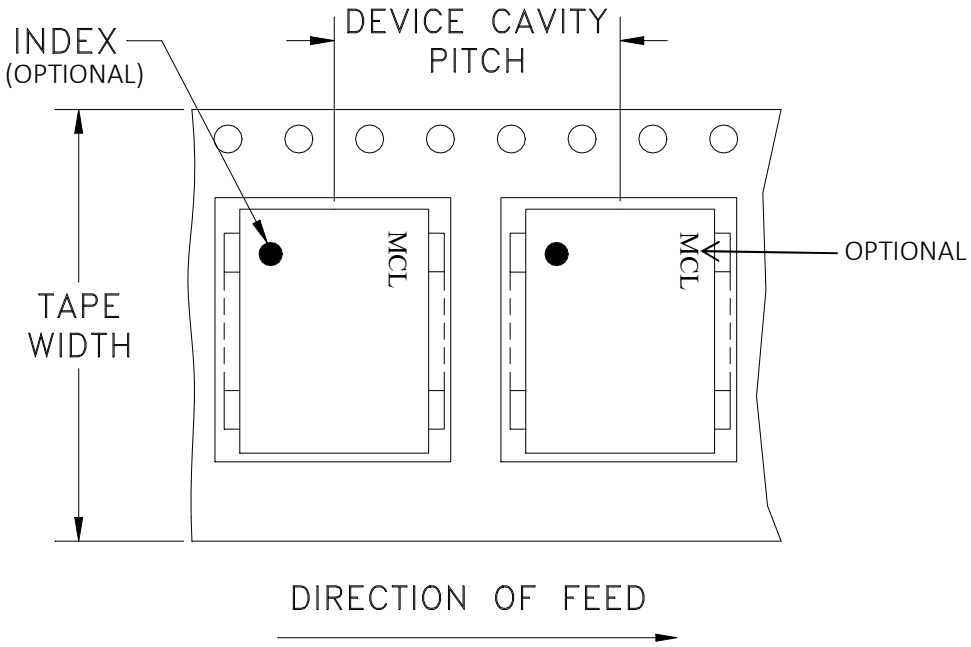
1. Case material: Plastic.
2. Termination finish:
   For RoHS Case Styles: Tin plate over Nickel plate. All models, (+) suffix.
   For RoHS-5 Case Styles: Tin-Lead plate. All models, no (+) suffix.

Mini-Circuits®
INTERNET http://www.minicircuits.com
P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661
Distribution Centers NORTH AMERICA 800-654-7949 • 417-335-5935 • Fax 417-335-5945 • EUROPE 44-1252-832600 • Fax 44-1252-837010
Mini-Circuits ISO 9001 & ISO 14001 Certified

This document and its contents are the property of Mini-Circuits

Tape & Reel Packaging TR-F34

DEVICE ORIENTATION IN T&R



Tape Width, mm	Device Cavity Pitch, mm	Reel Size, inches	Devices per Reel see note	
16	12	7	Small quantity standard (see note)	20
				50
				100
				200
		13	Standard	500
				1000

Note: Availability of small reel quantity varies by model.
Refer to pricing and availability on individual model dashboard.

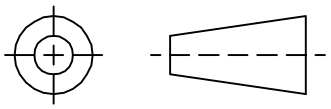
Mini-Circuits carrier tape materials provide protection from ESD (Electro-Static Discharge) during handling and transportation. Tapes are static dissipative and comply with industry standards EIA-481/EIA-541.

Go to: www.minicircuits.com/pages/pdfs/tape.pdf

Mini-Circuits®
INTERNET http://www.minicircuits.com
P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661
Distribution Centers NORTH AMERICA 800-654-7949 • 417-335-5935 • Fax 417-335-5945 • EUROPE 44-1252-832600 • Fax 44-1252-837010
Mini-Circuits ISO 9001 & ISO 14001 Certified

This document and its contents are the property of Mini-Circuits.

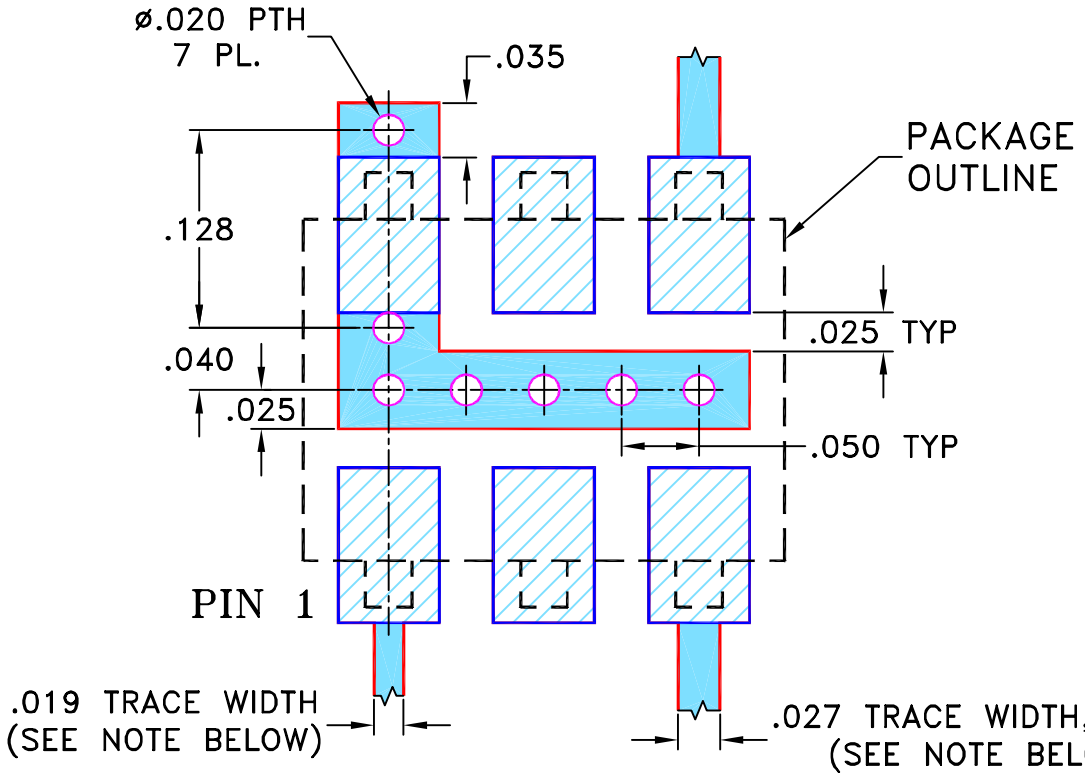
THIRD ANGLE PROJECTION



REVISIONS

REV	ECN No.	DESCRIPTION	DATE	DR	AUTH
OR	M88803	NEW RELEASE	10/20/03	GF	HY
A	M102713	ADDED "...WITH SMOBC"	01/17/06	MMG	IL

SUGGESTED MOUNTING CONFIGURATION FOR CD542 CASE STYLE, "hv" 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	GF	09/18/03
TOLERANCES ON:	CHECKED	IL	10/20/03
2 PL DECIMALS ±	APPROVED	HY	10/20/03
3 PL DECIMALS ± .005			
ANGLES ±			
FRACTIONS ±			

Mini-Circuits®
THIS DOCUMENT AND ITS CONTENTS ARE THE PROPERTY OF MINI-CIRCUITS. EXCEPT FOR USE EXPRESSLY GRANTED, IN WRITING, TO ITS VENDORS, VENDEE AND THE UNITED STATES GOVERNMENT, MINI-CIRCUITS RESERVES ALL PROPRIETARY DESIGN, USE , MANUFACTURING AND REPRODUCTION RIGHTS THERETO. THESE CONTENTS SHALL NOT BE USED, DUPLICATED OR DISCLOSED TO ANY OUTSIDE PARTY, IN WHOLE OR IN PART, WITHOUT WRITTEN PERMISSION OF MINI-CIRCUITS.

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

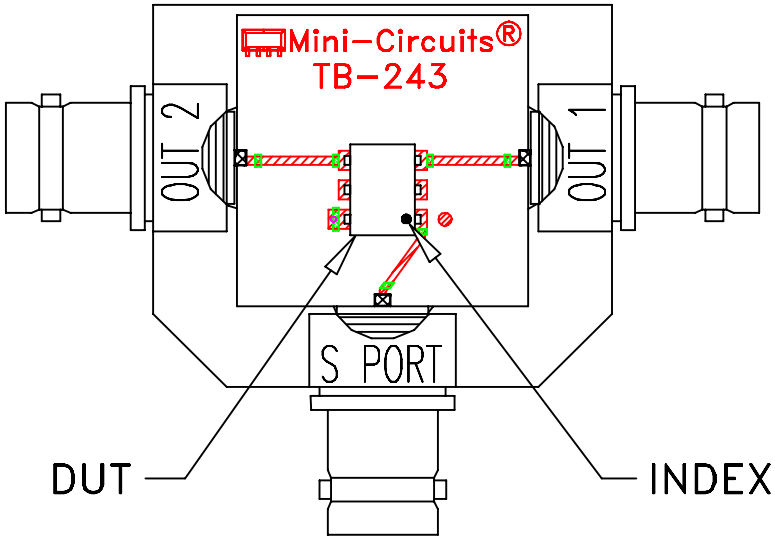
Mini-Circuits® 13 Neptune Avenue Brooklyn NY 11235

PL, hv, 75, CD542, ADP, TB-243

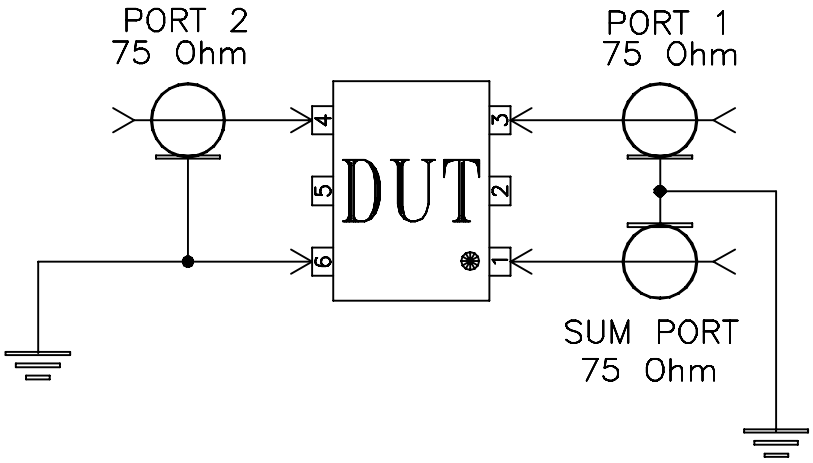
SIZE	CODE IDENT	DRAWING NO:	REV:
A	15542	98-PL-141	A

FILE:	SCALE:	SHEET:
98PL141	8:1	1 OF 1

Evaluation Board and Circuit



TB-243



Schematic Diagram

Notes:

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

Mini-Circuits®

THIS DOCUMENT AND ITS CONTENTS ARE THE PROPERTY OF MINI-CIRCUITS.

Mini-Circuits

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

This document and its contents are the property of Mini-Circuits.