Engineering Development Model

RF Transformer TCM4-ED14833/2B

Impedance Ratio : 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.

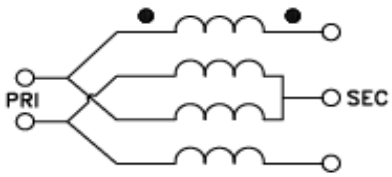
Please click "Back", and then click "Contact Us" for Applications support.

CASE STYLE : DB1627

ELECTRICAL SPECIFICATIONS 50Ω @ +25°C					
Parameter		**Min.**	**Typ.**	**Max.**	**Units**
Frequency		20		4500	MHz
Insertion Loss	**3 dB Bandwidth**		1.5		MHz
	2 dB Bandwidth		--		MHz
	1 dB Bandwidth		--		MHz
Amplitude Unbalance	**Over 3dB Bandwidth**		0.5		dB
	Over 2dB Bandwidth		--		dB
	Over 1dB Bandwidth		--		dB
Phase Unbalance	**Over 3dB Bandwidth**		5.0		deg.
	Over 2dB Bandwidth		--		deg.
	Over 1dB Bandwidth		--		deg.

MAXIMUM RATINGS	
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power	0.4W
DC Current	30mA

Config. H



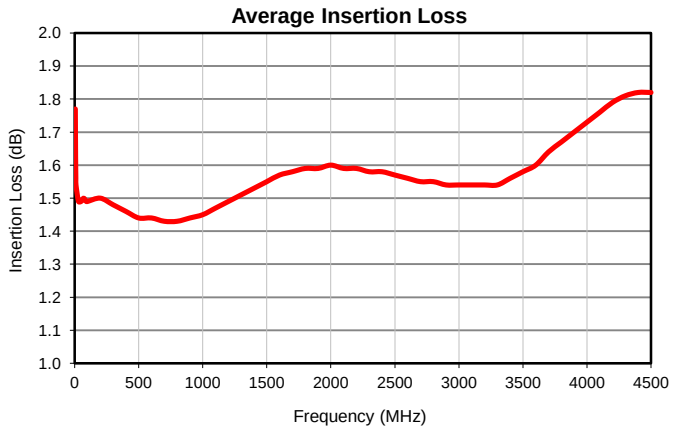
PIN CONNECTIONS	
PRIMARY DOT	3
PRIMARY	2
SECONDARY DOT	4
SECONDARY	6
GND	2,5
NOT USED	1

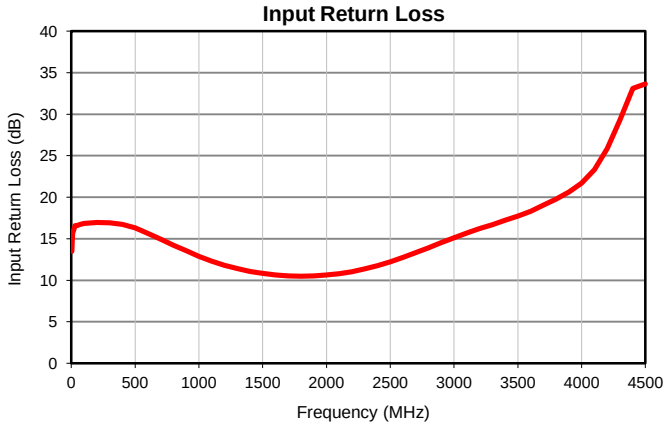
RF Transformer TCM4-ED14833/2B

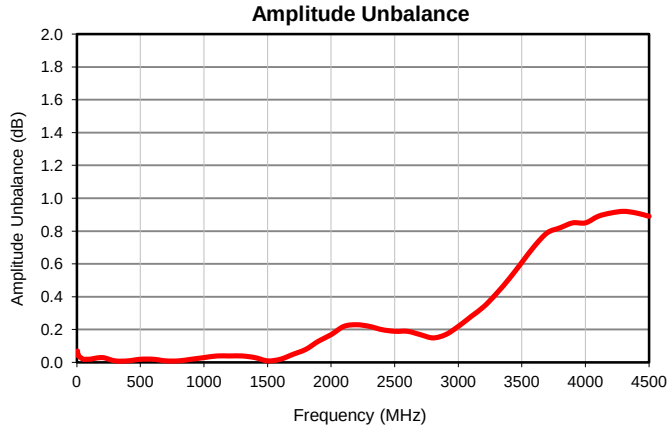
Typical Performance Data

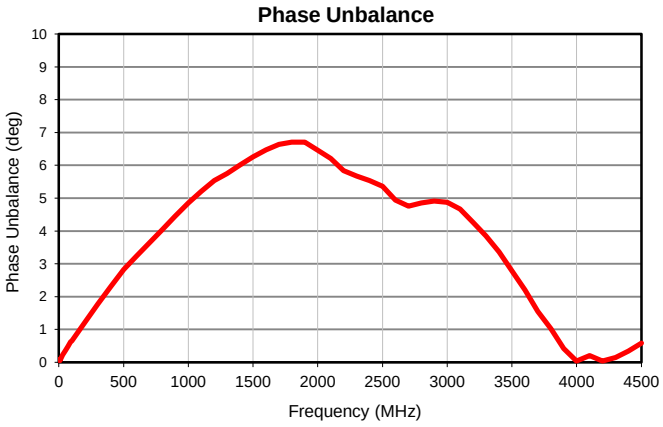
FREQUENCY (MHz)	AVERAGE INSERTION LOSS (dB)	INPUT RETURN LOSS (dB)	AMPLITUDE UNBALANCE (dB)	PHASE UNBALANCE (deg.)
5.0	1.77	13.47	0.07	0.08
7.0	1.63	14.63	0.05	0.06
9.0	1.56	15.34	0.05	0.07
10.0	1.54	15.59	0.04	0.06
30.0	1.49	16.57	0.03	0.22
50.0	1.49	16.62	0.02	0.36
70.0	1.50	16.73	0.02	0.49
90.0	1.49	16.79	0.02	0.62
100.0	1.49	16.83	0.02	0.65
200.0	1.50	16.95	0.03	1.21
300.0	1.48	16.92	0.01	1.77
400.0	1.46	16.72	0.01	2.30
500.0	1.44	16.30	0.02	2.83
600.0	1.44	15.66	0.02	3.24
700.0	1.43	14.95	0.01	3.64
800.0	1.43	14.23	0.01	4.04
900.0	1.44	13.55	0.02	4.45
1000.0	1.45	12.89	0.03	4.85
1100.0	1.47	12.30	0.04	5.20
1200.0	1.49	11.81	0.04	5.54
1300.0	1.51	11.40	0.04	5.75
1400.0	1.53	11.06	0.03	6.01
1500.0	1.55	10.82	0.01	6.26
1600.0	1.57	10.63	0.02	6.47
1700.0	1.58	10.52	0.05	6.64
1800.0	1.59	10.48	0.08	6.71
1900.0	1.59	10.53	0.13	6.71
2000.0	1.60	10.63	0.17	6.46
2100.0	1.59	10.80	0.22	6.21
2200.0	1.59	11.03	0.23	5.84
2300.0	1.58	11.37	0.22	5.67
2400.0	1.58	11.77	0.20	5.54
2500.0	1.57	12.23	0.19	5.36
2600.0	1.56	12.74	0.19	4.94
2700.0	1.55	13.32	0.17	4.76
2800.0	1.55	13.92	0.15	4.85
2900.0	1.54	14.52	0.17	4.91
3000.0	1.54	15.11	0.22	4.87
3100.0	1.54	15.69	0.28	4.67
3200.0	1.54	16.24	0.34	4.26
3300.0	1.54	16.69	0.42	3.85
3400.0	1.56	17.24	0.51	3.36
3500.0	1.58	17.73	0.61	2.79
3600.0	1.60	18.30	0.71	2.20
3700.0	1.64	19.02	0.79	1.55
3800.0	1.67	19.77	0.82	1.02
3900.0	1.70	20.62	0.85	0.42
4000.0	1.73	21.68	0.85	0.04
4100.0	1.76	23.33	0.89	0.20
4200.0	1.79	25.85	0.91	0.04
4300.0	1.81	29.34	0.92	0.15
4400.0	1.82	33.11	0.91	0.34
4500.0	1.82	33.66	0.89	0.58

Typical Performance Data





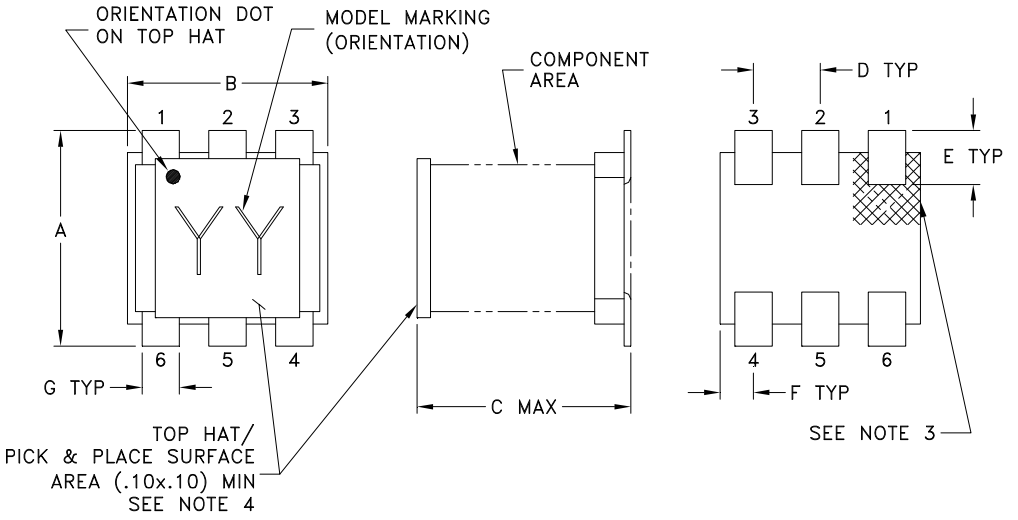




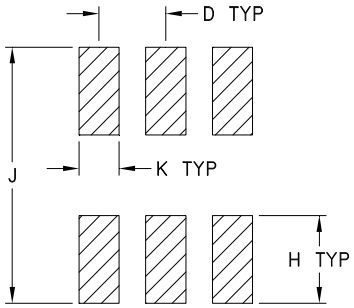
Case Style DB

DB1627

Outline Dimensions



PCB Land Pattern



SUGGESTED LAYOUT
TOLERANCE TO BE WITHIN ±.002

CASE #	A	B	C	D	E	F	G	H	J	K	WT. GRAM
DB1627	.160 (4.06)	.150 (3.81)	.160 (4.06)	.050 (1.27)	.040 (1.02)	.025 (0.64)	.028 (0.71)	.065 (1.65)	.190 (4.83)	.030 (0.76)	.15

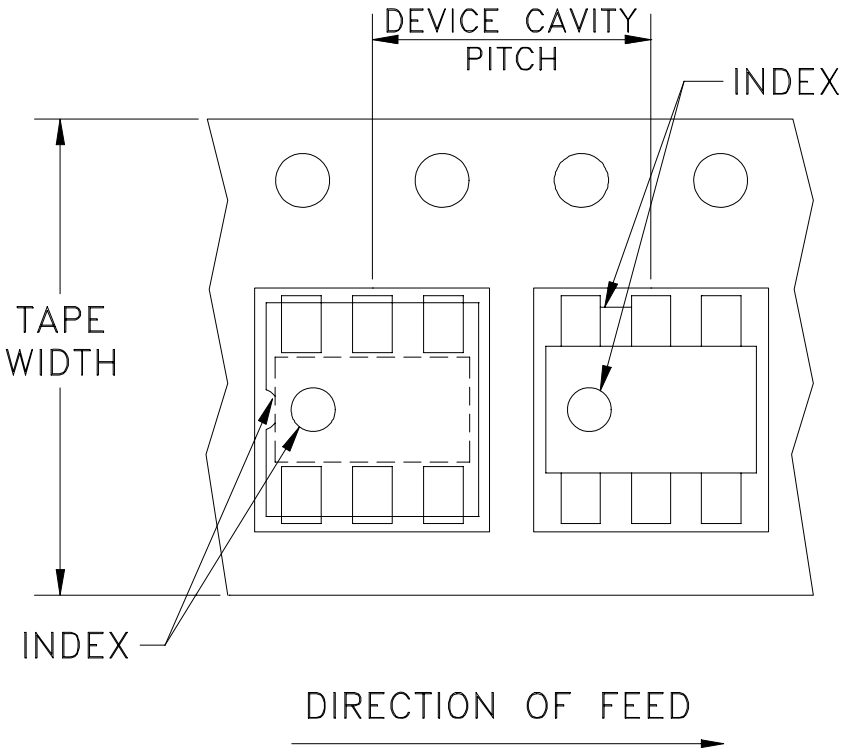
Dimensions are in inches (mm). Tolerances: 2 Pl. ± .01; 3Pl. ± .005

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.
3 Orientation dot on top hat & orientation feature on substrate correspondence to pin #1.
4 Top-Hat total thickness: .013 inches MAX.

Tape & Reel Packaging TR-F47

DEVICE ORIENTATION IN T&R



Tape Width, mm	Device Cavity Pitch, mm	Reel Size, inches	Devices per Reel see note
12	8	13	1000, 2000
		7	20, 50, 100, 200, 500

Note: Please consult individual model data sheet to determine device per reel availability.

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

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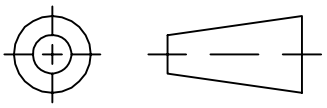
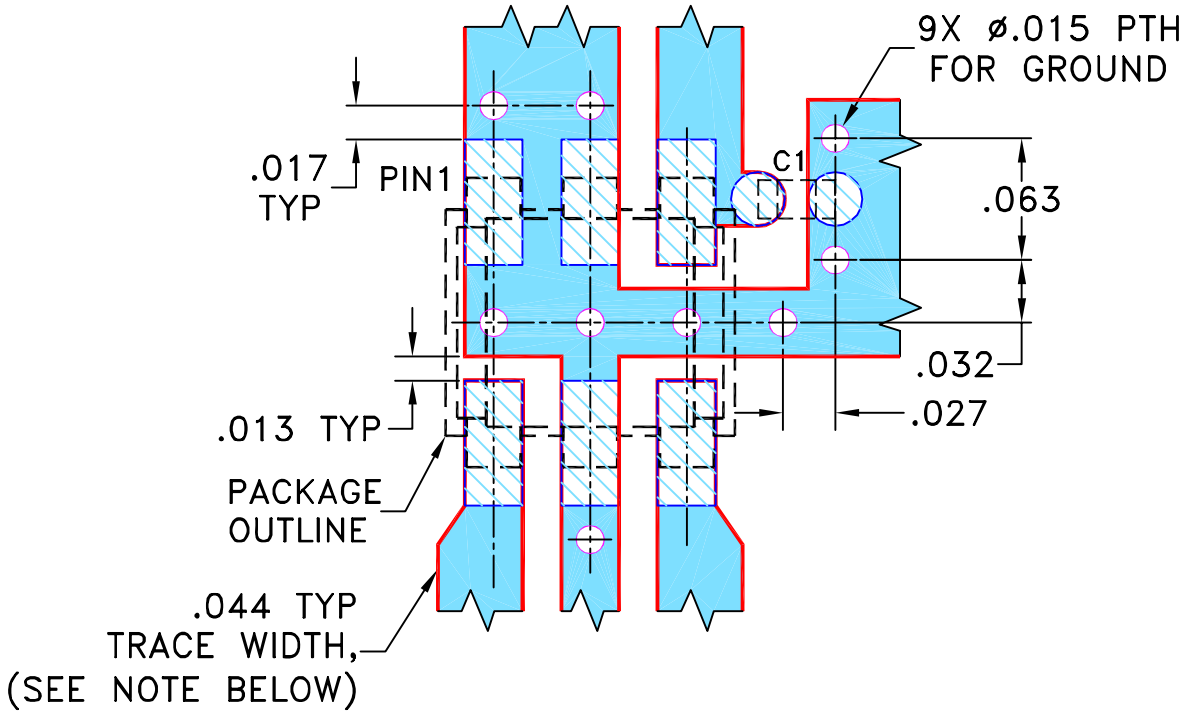
THIRD ANGLE PROJECTION



REVISIONS

REV	ECN No.	DESCRIPTION	DATE	DR	AUTH
OR	M138571	NEW RELEASE	10/02/12	GF	DJ

SUGGESTED MOUNTING CONFIGURATION FOR DB1627 CASE STYLE, "06TH02" PIN CONNECTION



NOTES:
1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS 0.020" ± 0.0015"; 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.
3. 0402 SIZE CHIP COMPONENT FOOTPRINT IS SHOWN FOR REFERENCE. FOR COMPONENT VALUE REFER TO TB-697+.

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	09/28/12
TOLERANCES ON:	CHECKED	IL	10/02/12
2 PL DECIMALS ±	APPROVED	DJ	10/02/12
3 PL DECIMALS ± .005			
ANGLES ±			
FRACTIONS ±			

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

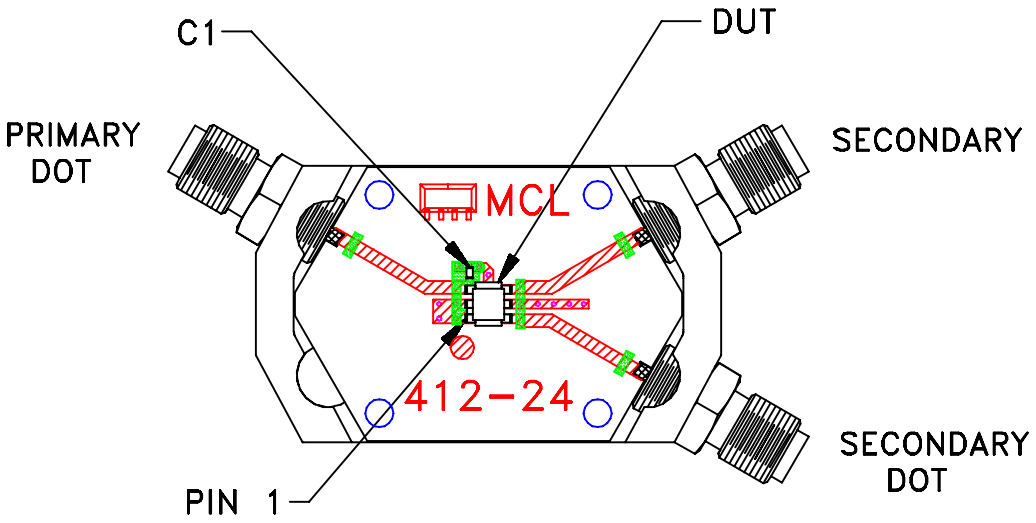
Mini-Circuits® 13 Neptune Avenue Brooklyn NY 11235

PL, 06TH02, DB1627, TB-697+

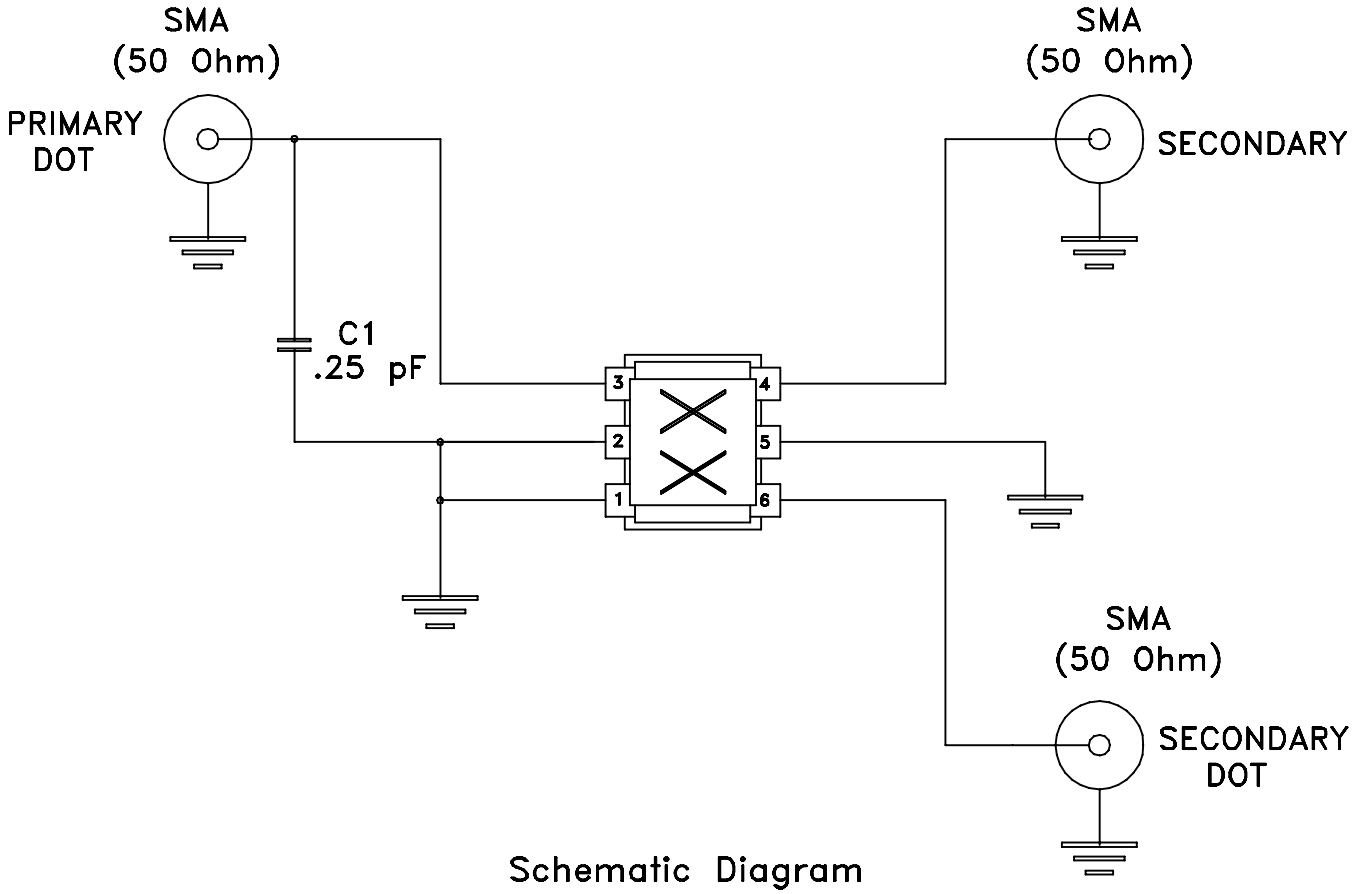
SIZE	CODE IDENT	DRAWING NO:	REV:
A	15542	98-PL-381	OR

FILE:	SCALE:	SHEET:
98PL381	10:1	1 OF 1

Evaluation Board and Circuit



TB-697+



Schematic Diagram

Notes:

1. 50 Ohm SMA Female connectors.
2. PCB Material: RO4350 or equivalent, Dielectric Constant=3.5, Thickness=.020 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