

Engineering Development Model

Power Splitter/Combiner

JYPS-ED9653/2

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 : BJ293

ELECTRICAL SPECIFICATIONS 75Ω @ +25°C					
Parameter		Min.	Typ.	Max.	Units
Frequency		0.5		2100	MHz
Isolation	0.5 - 5 MHz		17		dB
	5 - 1050 MHz		22		dB
	1050 - 2100 MHz		13		dB
Insertion Loss Above 3.0 dB	0.5 - 5 MHz		3.04		dB
	5 - 1050 MHz		3.18		dB
	1050 - 2100 MHz		3.72		dB
Phase Unbalance	0.5 - 5 MHz		0.034		deg.
	5 - 1050 MHz		0.168		deg.
	1050 - 2100 MHz		0.623		deg.
Amplitude Unbalance	0.5 - 5 MHz		0.008		dB
	5 - 1050 MHz		0.063		dB
	1050 - 2100 MHz		0.388		dB
VSWR	SUM Port		1.27		(:1)
	OUT Ports		1.23		(:1)

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

PIN CONNECTIONS	
SUM PORT	1
PORT 1	4
PORT 2	5
GND EXT	2, 3, 6, 7
ISOLATE	8

Functional Diagram



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Typical Performance Data

FREQ. (MHz)	TOTAL LOSS ¹ (dB)		AMP. UNBAL. (dB)	ISOLATION (dB) 1-2	PHASE UNBAL. (deg.)	FREQ. (MHz)	VSWR (:1)		
	S-1	S-2					S	1	2
0.5	6.05	6.05	0.00	14.08	0.05	0.5	1.56	1.53	1.52
0.6	6.05	6.04	0.01	14.66	0.05	0.6	1.51	1.49	1.48
0.7	6.04	6.04	0.01	15.11	0.02	0.7	1.48	1.46	1.46
0.8	6.04	6.03	0.01	15.49	0.00	0.8	1.45	1.43	1.43
0.9	6.05	6.04	0.01	15.83	0.04	0.9	1.43	1.42	1.41
1.0	6.05	6.04	0.01	16.13	0.01	1.0	1.41	1.40	1.40
2.0	6.05	6.04	0.01	18.53	0.05	2.0	1.30	1.29	1.29
3.0	6.05	6.03	0.01	20.17	0.02	3.0	1.24	1.24	1.24
4.0	6.04	6.03	0.01	21.28	0.05	4.0	1.21	1.21	1.21
5.0	6.05	6.05	0.00	22.03	0.05	5.0	1.20	1.20	1.19
14.0	6.05	6.05	0.00	23.47	0.01	14.0	1.17	1.17	1.17
23.0	6.06	6.06	0.00	23.33	0.03	23.0	1.17	1.17	1.17
32.0	6.07	6.06	0.01	23.13	0.00	32.0	1.17	1.17	1.17
41.0	6.07	6.07	0.00	23.00	0.02	41.0	1.17	1.17	1.17
50.0	6.07	6.06	0.01	22.88	0.05	50.0	1.17	1.17	1.17
190.0	6.13	6.11	0.02	22.56	0.17	190.0	1.17	1.17	1.17
330.0	6.20	6.16	0.03	22.59	0.25	330.0	1.18	1.16	1.16
470.0	6.22	6.18	0.04	22.55	0.29	470.0	1.19	1.15	1.16
610.0	6.26	6.19	0.08	22.15	0.29	610.0	1.18	1.14	1.14
750.0	6.29	6.20	0.10	20.98	0.25	750.0	1.16	1.12	1.12
800.0	6.33	6.22	0.11	20.42	0.32	800.0	1.15	1.12	1.11
850.0	6.35	6.21	0.14	19.74	0.32	850.0	1.13	1.11	1.10
900.0	6.39	6.24	0.15	19.07	0.23	900.0	1.12	1.10	1.09
950.0	6.42	6.27	0.15	18.38	0.25	950.0	1.11	1.09	1.09
1000.0	6.47	6.31	0.16	17.72	0.16	1000.0	1.09	1.09	1.08
1250.0	6.67	6.42	0.25	14.99	0.12	1250.0	1.05	1.09	1.09
1500.0	6.91	6.58	0.33	13.71	0.23	1500.0	1.23	1.19	1.19
1530.0	6.91	6.57	0.34	13.62	0.22	1530.0	1.24	1.19	1.19
1560.0	6.93	6.58	0.35	13.57	0.26	1560.0	1.26	1.20	1.20
1590.0	6.96	6.60	0.36	13.55	0.32	1590.0	1.28	1.21	1.21
1620.0	6.94	6.57	0.37	13.49	0.41	1620.0	1.29	1.22	1.21
1650.0	6.96	6.59	0.38	13.48	0.41	1650.0	1.31	1.22	1.21
1680.0	6.99	6.59	0.40	13.50	0.48	1680.0	1.32	1.23	1.22
1710.0	6.95	6.56	0.39	13.45	0.57	1710.0	1.33	1.24	1.22
1740.0	6.95	6.55	0.41	13.42	0.60	1740.0	1.34	1.24	1.22
1770.0	6.98	6.57	0.41	13.45	0.63	1770.0	1.35	1.25	1.22
1800.0	6.94	6.53	0.41	13.40	0.75	1800.0	1.36	1.25	1.23
1875.0	6.93	6.50	0.43	13.29	0.92	1875.0	1.39	1.27	1.24
1950.0	6.88	6.44	0.45	13.03	1.11	1950.0	1.41	1.29	1.25
2025.0	6.83	6.37	0.46	12.63	1.33	2025.0	1.42	1.31	1.26
2100.0	6.80	6.33	0.46	12.11	1.61	2100.0	1.43	1.33	1.28

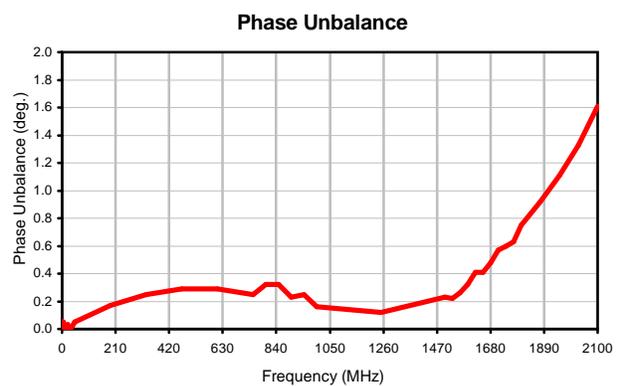
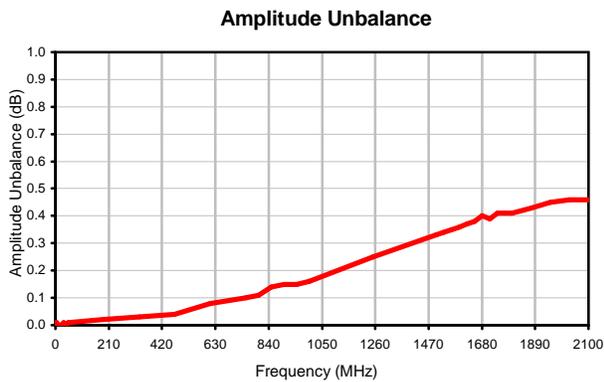
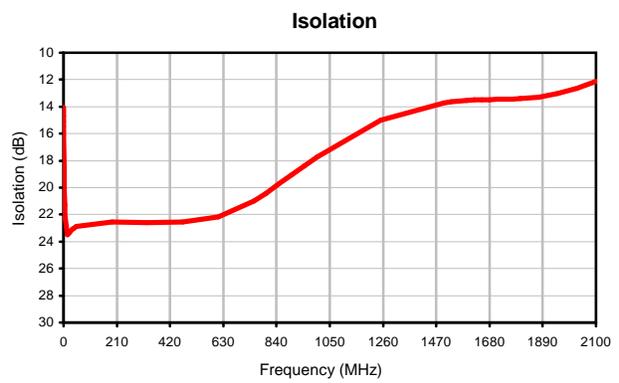
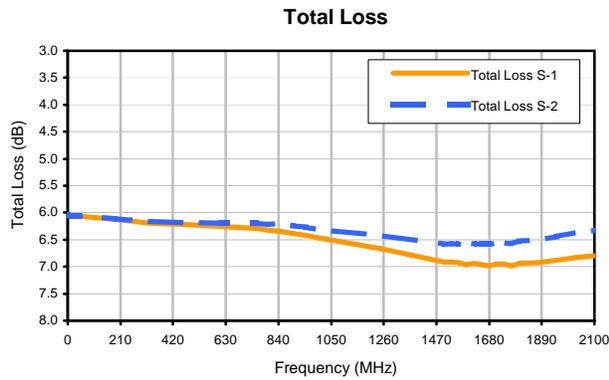
¹Total Loss = Insertion Loss + 3dB Splitter Loss



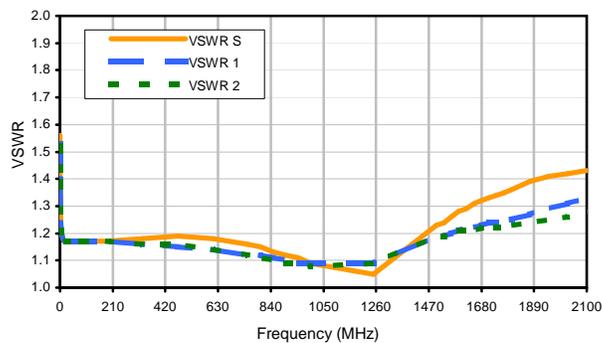
2 Way-0° Power Splitter/Combiner

JYPS-ED9653/2

Typical Performance Curves



VSWR

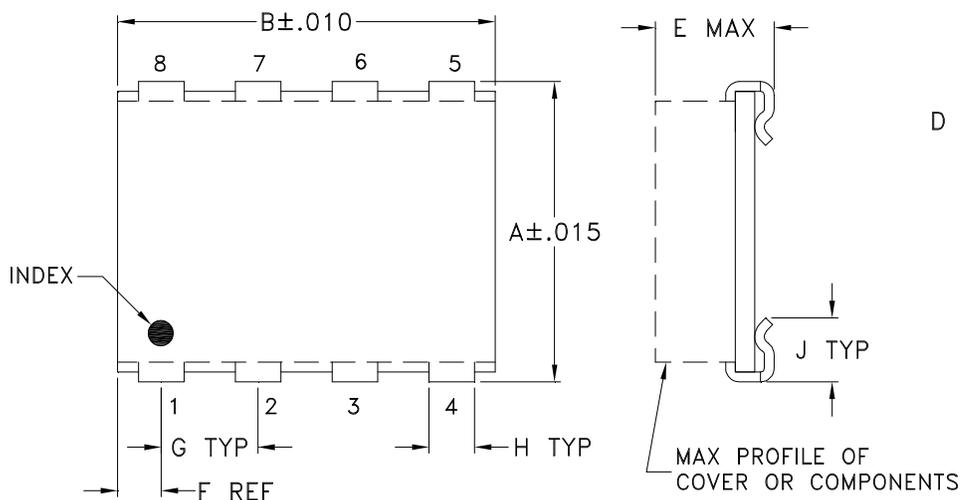


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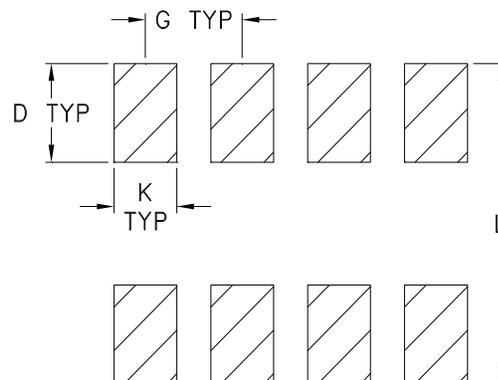


Outline Dimensions

BJ293
BJ398



PCB Land Pattern



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

CASE#	A	B	C	D	E	F	G	H	J	K	L	WT. GRAMS
BJ293	.395 (10.03)	.500 (12.70)	-- --	.100 (2.54)	.230 (5.84)	.100 (2.54)	.100 (2.54)	.047 (1.19)	.065 (1.65)	.065 (1.65)	.425 (10.80)	.80
BJ398	.305 (7.75)	.390 (9.91)	-- --	.100 (2.54)	.105 (2.67)	.045 (1.14)	.100 (2.54)	.047 (1.19)	.065 (1.65)	.065 (1.65)	.325 (8.26)	.20

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

Notes:

- Case material: Plastic.
- Base material: Printed wiring laminate.
- 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.



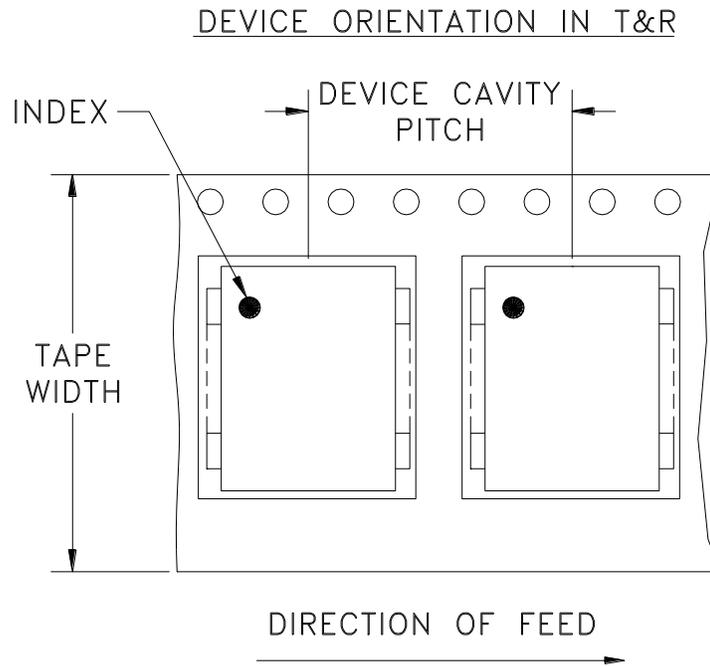
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Tape & Reel Packaging TR-F10



Tape Width, mm	Device Cavity Pitch, mm	Reel Size, inches	Devices per Reel
24	16	7	10,20,50,100
		13	200,500

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



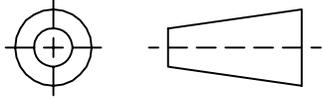
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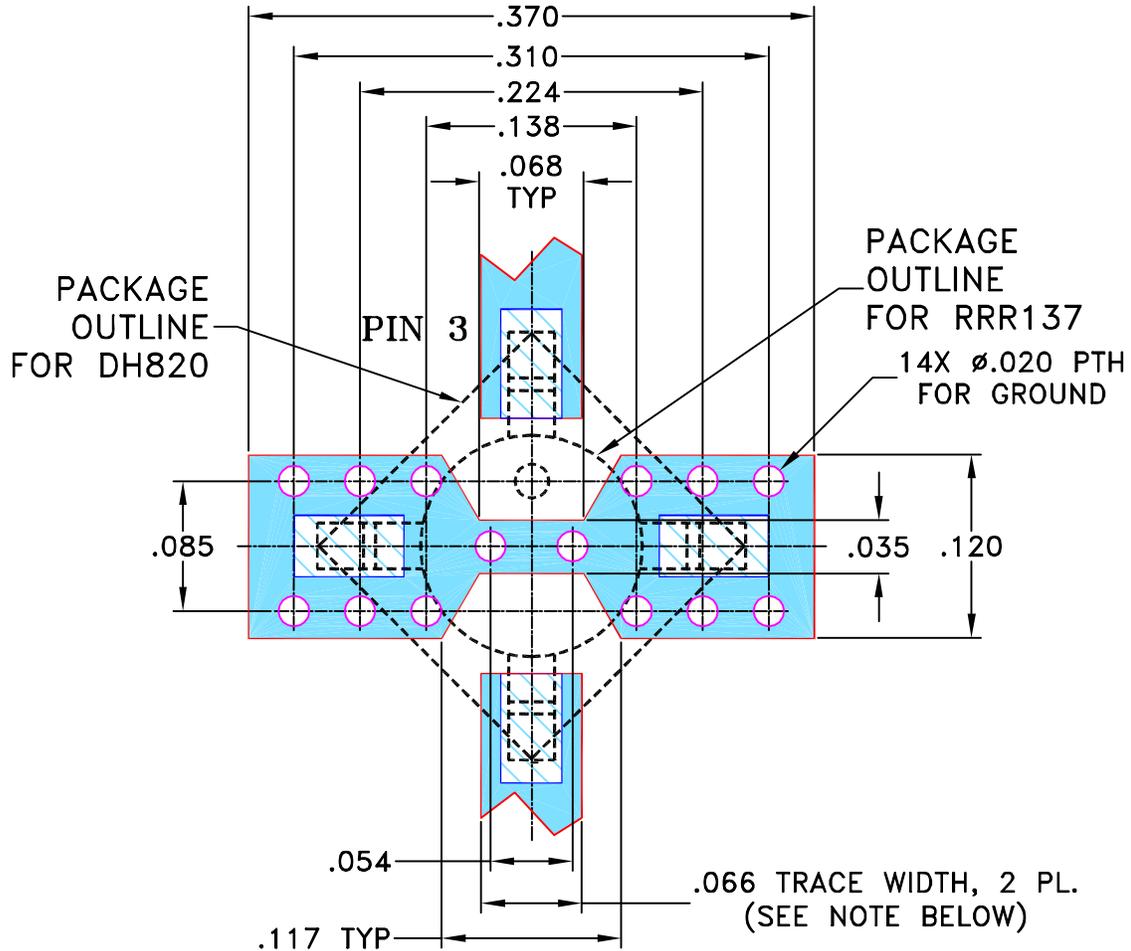
THIRD ANGLE PROJECTION



REVISIONS

REV	ECN No.	DESCRIPTION	DATE	DR	AUTH
OR	M94379	NEW RELEASE	09/22/05	AV	MM
A	M102713	ADDED "...WITH SMOBC"	01/12/06	GF	IL
B	M108434	UPDATED DRAWING PER TB-412+	11/14/06	PW	IG

SUGGESTED MOUNTING CONFIGURATION FOR
DH820/RRR137 CASE STYLES, "cb" PIN CONNECTION



- NOTE: 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

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09/16/04

TOLERANCES ON:

CHECKED

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2 PL DECIMALS \pm

APPROVED

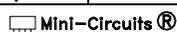
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09/22/05

3 PL DECIMALS \pm .005

ANGLES \pm

FRACTIONS \pm



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SIZE

CODE IDENT

DRAWING NO:

REV:

A

15542

98-PL-169

B

FILE:

98PL169

SCALE:

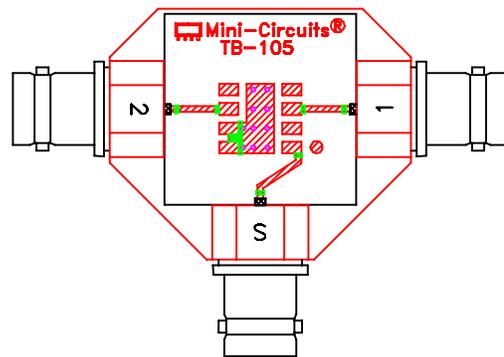
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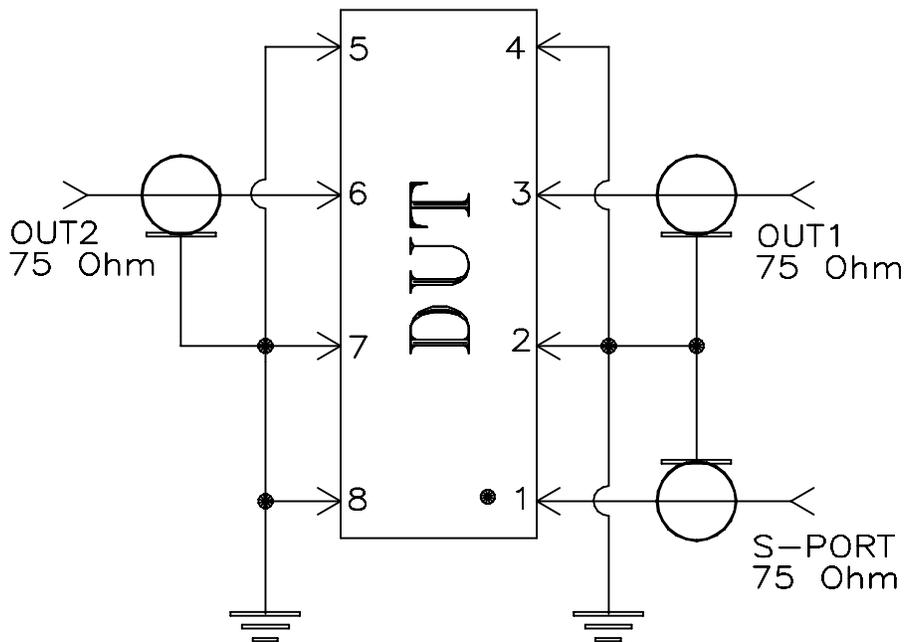
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Evaluation Board and Circuit



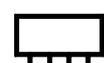
TB-105



Schematic Diagram

Notes:

1. 75 Ohm BNC Female connectors.
2. PCB Material: Rogers R04350 or equivalent,
Dielectric Constant=3.5, Thickness=.030 inch.

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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