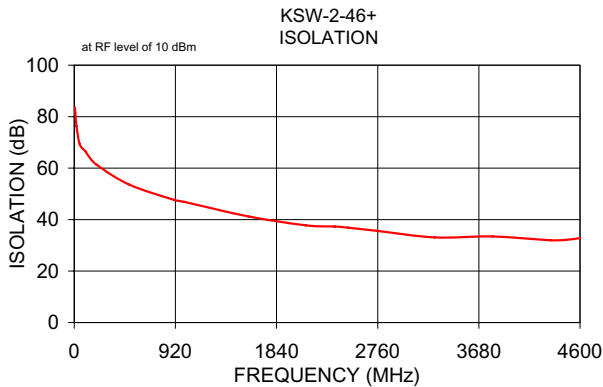
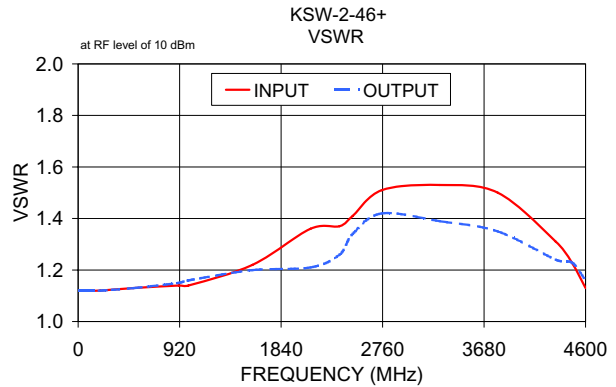
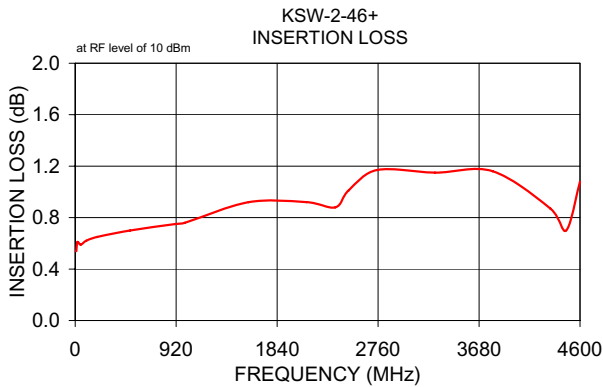




## Typical Performance Data

FREQ. (MHz)	ON INSERTION LOSS (dB) Control @ 0V/-5V IN-OUT		OFF ISOLATION (dB) Control @ 0V/-5V IN-OUT		VSWR		
	$\bar{x}$	$\sigma$	$\bar{x}$	$\sigma$	IN $\bar{x}$	OUT	
						ON $\bar{x}$	OFF $\bar{x}$
3.00	0.54	0.04	83.44	4.68	1.12	1.12	16.46
5.00	0.54	0.04	83.46	2.97	1.12	1.12	16.21
10.00	0.54	0.04	81.44	2.66	1.12	1.12	16.21
20.00	0.61	0.06	76.29	2.13	1.12	1.12	16.04
50.00	0.59	0.04	69.27	0.92	1.12	1.12	15.37
100.00	0.62	0.04	66.59	1.42	1.12	1.12	14.63
200.00	0.65	0.04	61.43	0.74	1.12	1.12	14.00
500.00	0.70	0.04	53.61	0.93	1.13	1.13	12.83
911.55	0.75	0.04	47.64	0.59	1.14	1.15	11.86
1000.00	0.76	0.04	46.91	0.61	1.14	1.16	11.79
1581.00	0.92	0.05	41.27	0.47	1.22	1.20	11.85
2107.00	0.92	0.06	37.77	0.41	1.36	1.21	11.91
2370.00	0.88	0.06	37.33	0.42	1.37	1.26	9.64
2489.55	1.01	0.07	36.86	0.43	1.41	1.34	9.98
2752.55	1.17	0.09	35.65	0.39	1.51	1.42	9.70
3278.55	1.15	0.11	33.10	0.42	1.53	1.39	13.14
3804.55	1.16	0.08	33.46	0.37	1.50	1.35	13.37
4330.55	0.87	0.05	31.99	0.42	1.31	1.24	15.41
4474.00	0.70	0.04	32.16	0.40	1.23	1.23	17.84
4600.00	1.08	0.04	32.78	0.42	1.13	1.16	14.40



### Notes

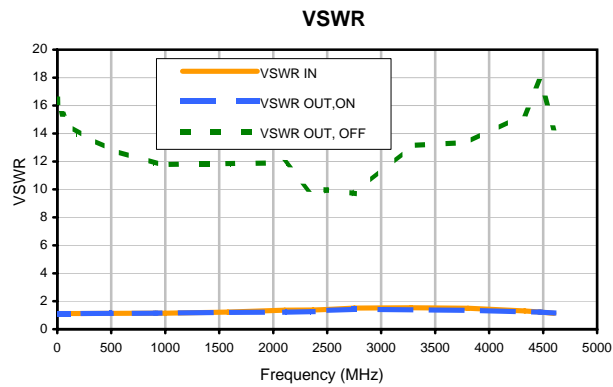
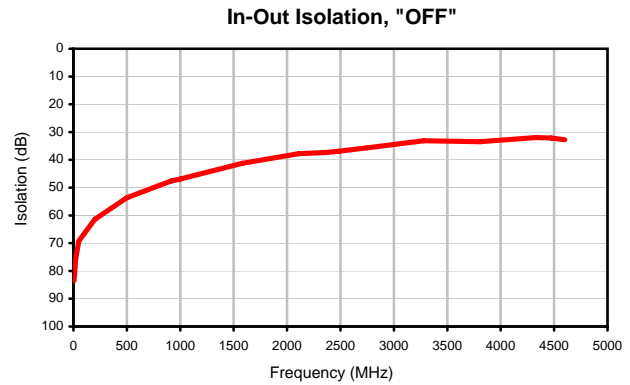
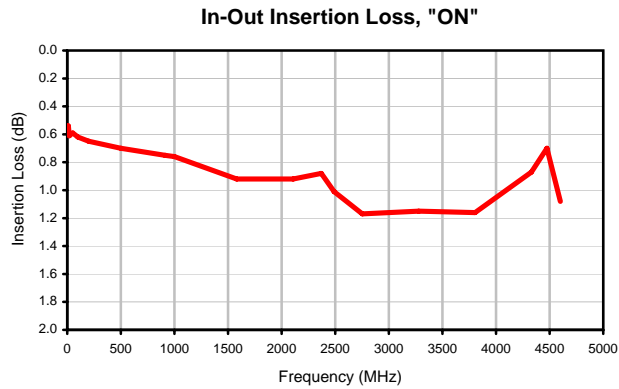
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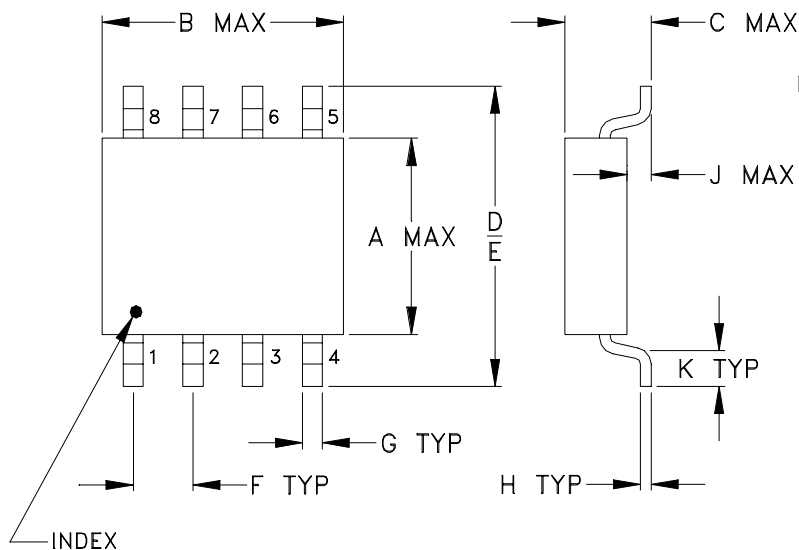
## Typical Performance Data

FREQUENCY (MHz)	INSERTION LOSS Control @ 0V/-5V (dB) IN-OUT , "ON"	ISOLATION Control @ 0V/-5V (dB) IN-OUT , "OFF"	VSWR (:1)		
			IN	OUT , "ON"	OUT , "OFF"
3	0.54	83.44	1.12	1.12	16.46
5	0.54	83.46	1.12	1.12	16.21
10	0.54	81.44	1.12	1.12	16.21
20	0.61	76.29	1.12	1.12	16.04
50	0.59	69.27	1.12	1.12	15.37
100	0.62	66.59	1.12	1.12	14.63
200	0.65	61.43	1.12	1.12	14.00
500	0.70	53.61	1.13	1.13	12.83
912	0.75	47.64	1.14	1.15	11.86
1000	0.76	46.91	1.14	1.16	11.79
1581	0.92	41.27	1.22	1.20	11.85
2107	0.92	37.77	1.36	1.21	11.91
2370	0.88	37.33	1.37	1.26	9.64
2490	1.01	36.86	1.41	1.34	9.98
2753	1.17	35.65	1.51	1.42	9.70
3279	1.15	33.10	1.53	1.39	13.14
3805	1.16	33.46	1.50	1.35	13.37
4331	0.87	31.99	1.31	1.24	15.41
4474	0.70	32.16	1.23	1.23	17.84
4600	1.08	32.78	1.13	1.16	14.40

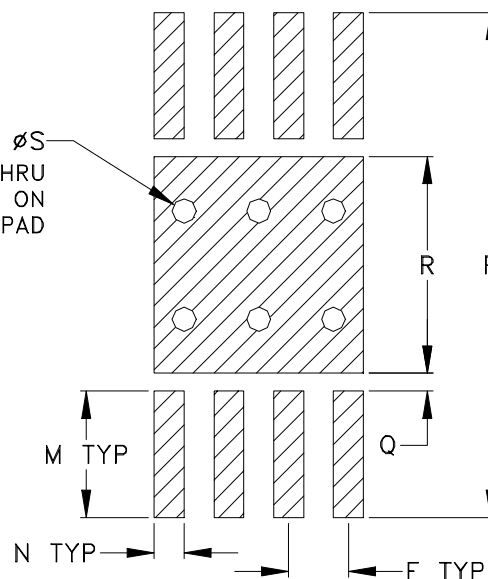
## Typical Performance Curves



### Outline Dimensions



### 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
XX112	.180 (4.57)	.180 (4.57)	.070 (1.78)	.400 (10.16)	.350 (8.89)	.050 (1.27)	.015 (0.38)	.005 (0.13)	.005 (0.13)	.070 (1.78)	--	.105 (2.67)	.025 (0.64)	.420 (10.67)

CASE #	Q	R	S	WT. GRAM
XX112	.015 (0.38)	.180 (4.57)	.020 (0.51)	.15

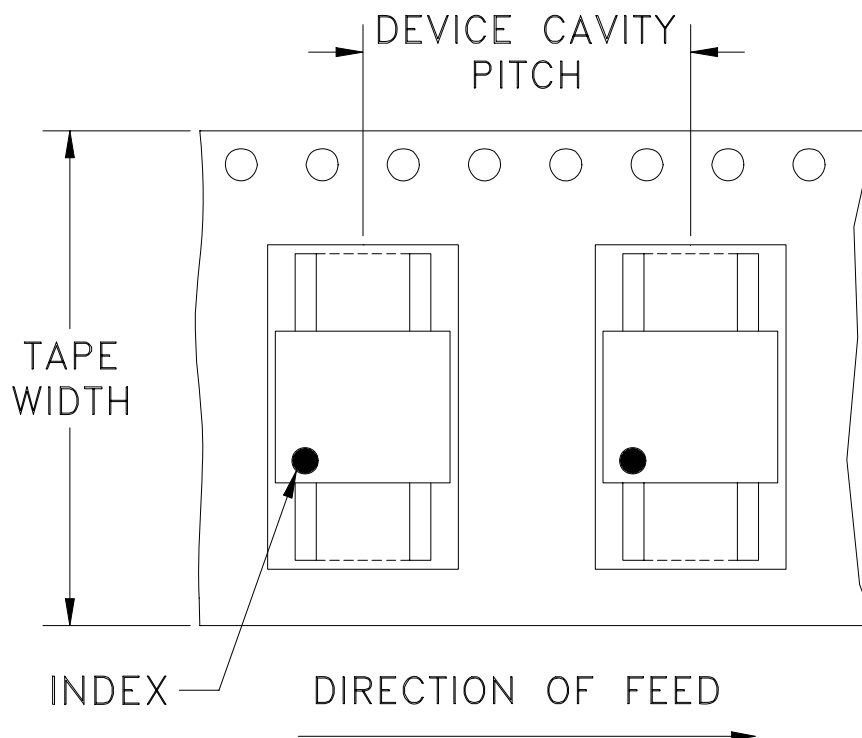
Dimensions are in inches (mm). Tolerances: 2 Pl.  $\pm .01$ ; 3 Pl.  $\pm .005$

#### Notes:

1. Case material: Kovar.
2. Termination Finish: 50  $\mu$  inch (1.27 microns) Gold over 50-350  $\mu$  inch (1.27-8.89 microns) Nickel plate.
3. Special Tolerances: Termination thickness  $\pm .002$  inch.

# Tape & Reel Packaging TR-F19

## DEVICE ORIENTATION IN T&R



Tape Width, mm	Device Cavity Pitch, mm	Reel Size, inches	Devices per Reel	
16	8	7	Small quantity standards (see note)	20
				50
				100
				200
		7	Standard	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](http://www.minicircuits.com/pages/pdfs/tape.pdf)

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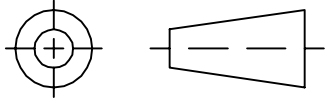
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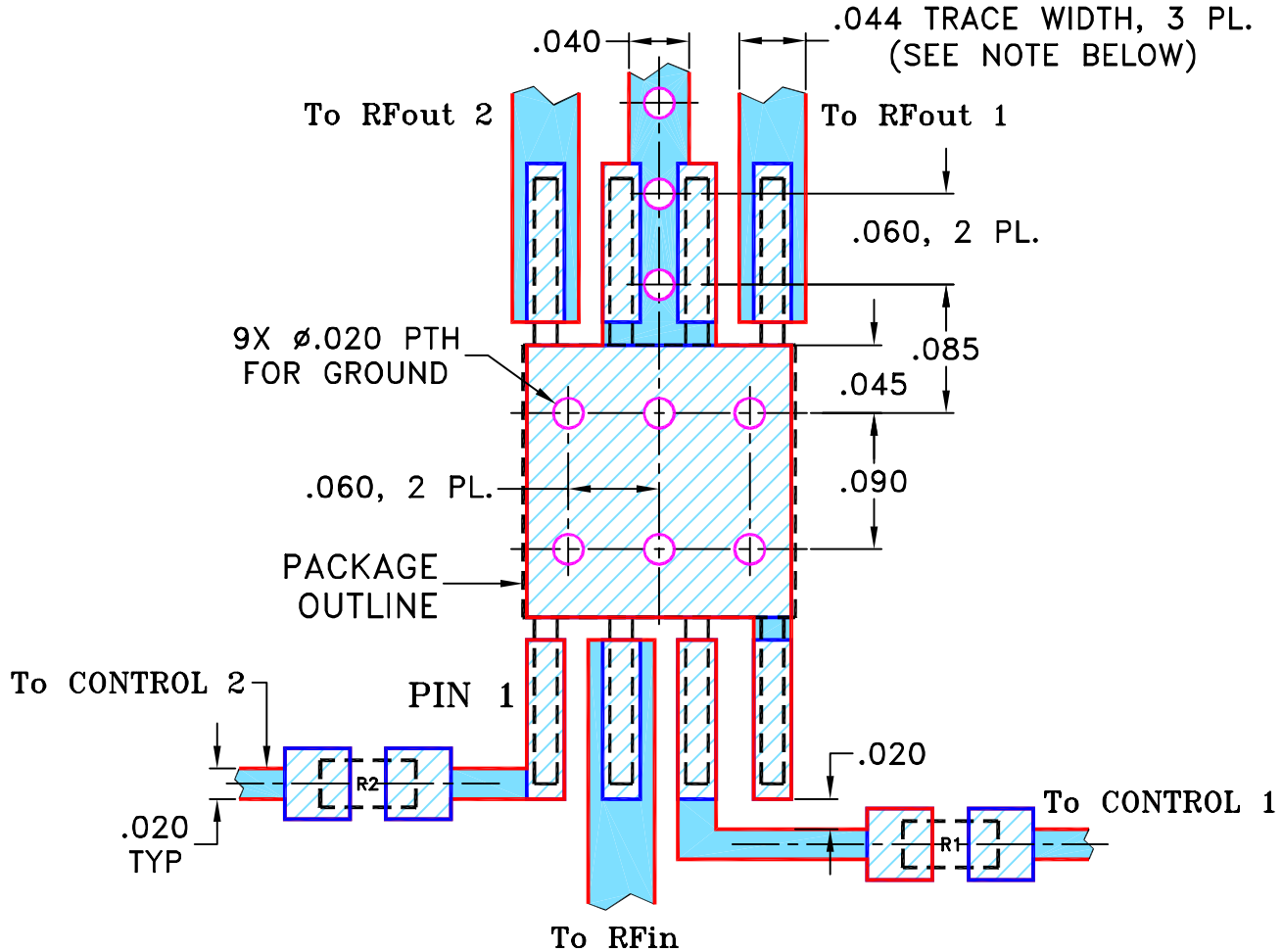
THIRD ANGLE PROJECTION



REVISIONS

REV	ECN No.	DESCRIPTION	DATE	DR	AUTH
OR	M100859	NEW RELEASE	10/12/05	MMG	IG
A	M102713	ADDED "...WITH SMOBC"	01/12/06	GT	IL

**SUGGESTED MOUNTING CONFIGURATION  
FOR XX112 CASE STYLE, "eh" PIN CONNECTION.**



RESISTORS R1, R2: 100 Ohm, 0603 SIZE.

- NOTE: 1. TRACE WIDTH IS SHOWN FOR ROGERS R04350B WITH DIELECTRIC THICKNESS .020" ± .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.

- 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	09/22/05
TOLERANCES ON:	CHECKED IL	10/12/05
2 PL DECIMALS ±	APPROVED IG	10/12/05
3 PL DECIMALS ± .005		
ANGLES ±		
FRACTIONS ±		

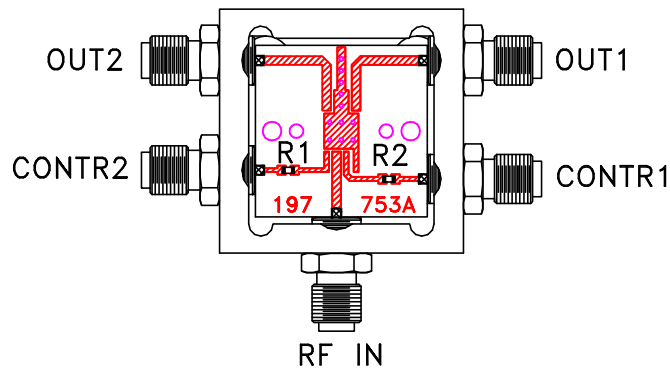
**Mini-Circuits®** 13 Neptune Avenue  
Brooklyn NY 11235

PL, eh, XX112, KSW(A)-2-46, TB-204

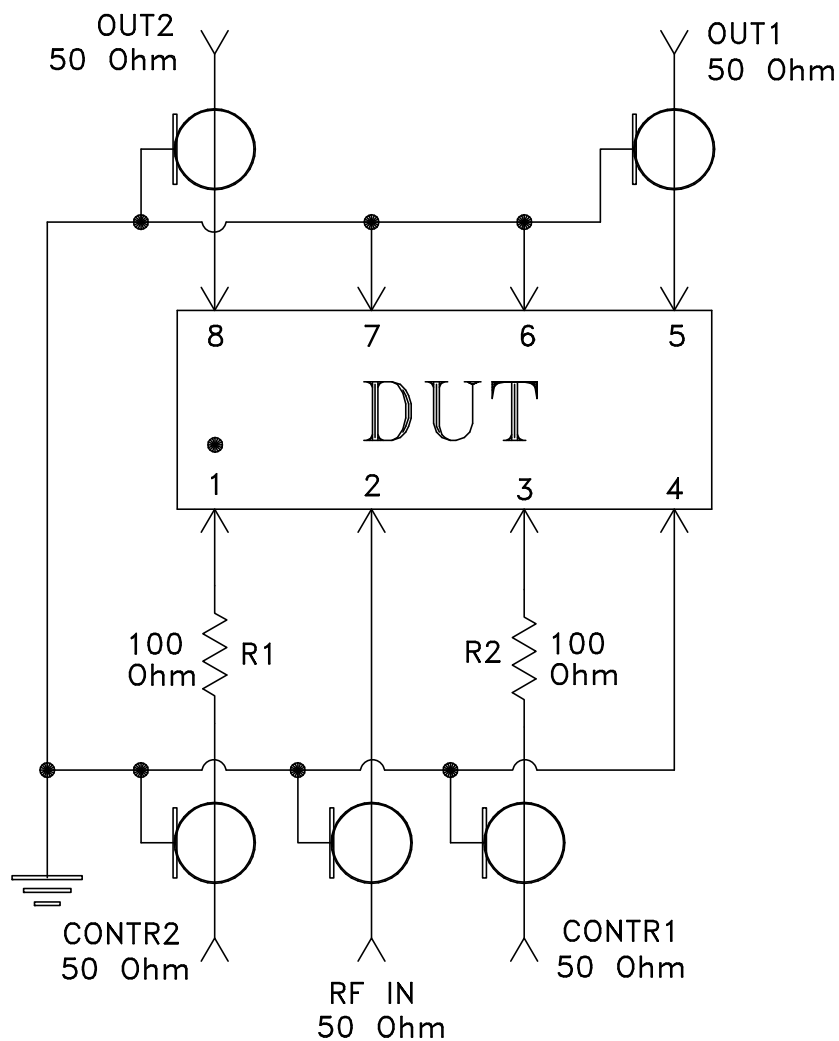
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SIZE	CODE IDENT	DRAWING NO:	REV:
A	15542	98-PL-217	A
FILE:	98PL217	SCALE: 8:1	SHEET: 1 OF 1

# Evaluation Board and Circuit




TB-204



Schematic Diagram

## Notes:

1. SMA Female connectors.
2. PCB Material: Rogers RO4350 or equivalent,  
Dielectric Constant=3.5, Thickness=.020 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	-55° to 100°C Ambient Environment	Individual Model Data Sheet
Storage Temperature	-55° to 150°C Ambient Environment	Individual Model Data Sheet
Thermal Shock	-55° to 100°C, 100 cycles	MIL-STD-202, Method 107, Condition A-3, except +100°C
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
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
Seal	Gross leak	MIL-STD-202, Method 112, Condition.D
Lead Integrity	Tension parallel to axis of lead, 1.70 x 10 <sup>7</sup> grams-force per square inch of cross-sectional lead area (1.3 kg-force)	MIL-STD-883, Method 2028
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