

Bandpass Filter

50Ω 6650 to 7950 MHz

Maximum Ratings

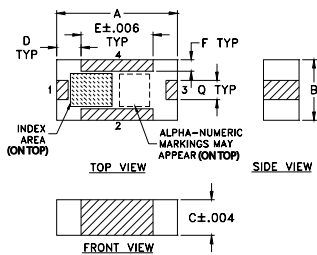
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
Input Power(Avg. Operational)	0 dBm
Input Power(Peak Operational)	4 dBm
Input Power(No Damage)	10 dBm
Permanent damage may occur if any of these limits are exceeded.	

Pin Connections

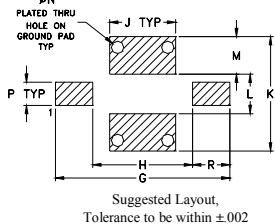
RF IN	1
RF OUT	3
GROUND	2,4

Product Marking: GR

Outline Drawing



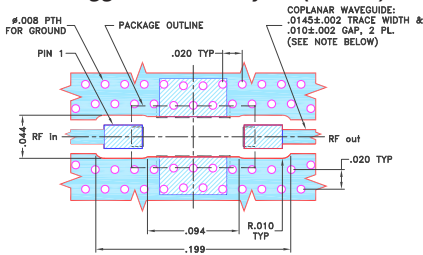
PCB Land Pattern



Outline Dimensions (inch/mm)

A	B	C	D	E	F	G	H	J
.126	.063	.037	.026	.075	.012	.182	.104	.069
3.20	1.60	0.94	0.66	1.91	0.30	4.62	2.64	1.75
K	L	M	N	P	Q	R		wt
.119	.041	.039	.013	.024	.020	.039		grams
3.02	1.04	0.99	0.33	0.61	0.51	0.99		.020

Demo Board MCL P/N: TB-824+ Suggested PCB Layout (PL-454)



Notes

- Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
- Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
- The parts covered by this specification document are subject to Mini-Circuits standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the Standard Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at www.minicircuits.com/MCLStore/terms.jsp

Features

- Small size
- Temperature stable
- Hermetically sealed
- LTCC construction

Applications

- Harmonic Rejection
- Transmitters / Receivers
- Avionics & Air Traffic Control

BFCN-732-2+



CASE STYLE: FV1206-4

+RoHS Compliant

The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications



Available Tape and Reel at no extra cost

Reel Size	Devices/Reel
7"	20, 50, 100, 200, 500, 1000, 3000

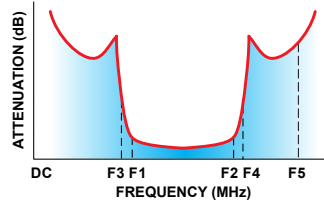
Electrical Specifications^{1,2} at 25°C

Parameter	Frequency (MHz)	Min.	Typ.	Max.	Unit
Pass Band	Insertion Loss	6650-7950	3.5	9.0	dB
	DC-1000	30	—	—	
	1000-2800	21	—	—	
	2800-3400	20	—	—	
	3400-3900	18	—	—	
Stop Band	Insertion Loss	3000-5500	16	—	dB
	5500-6000	8	19.7	—	
	8500-9500	12	18.3	—	
Input Return Loss	—	—	1.43	5.04	:1
Output Return Loss	—	—	1.43	5.85	
Group Delay	—	—	380	—	pS

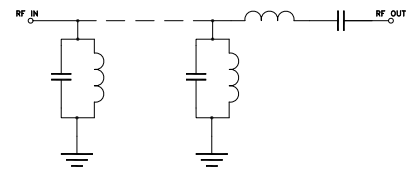
1. Measured on Mini-Circuits Characterization Test Board TB-824+.

2. This filter is not intended for use as a DC Blocking circuit element. In Application where DC voltage is present at either input or output ports, blocking capacitors are required at the corresponding RF port.

Typical Frequency Response

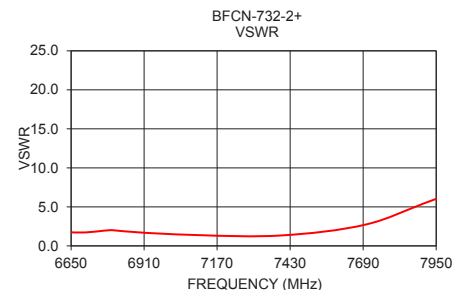
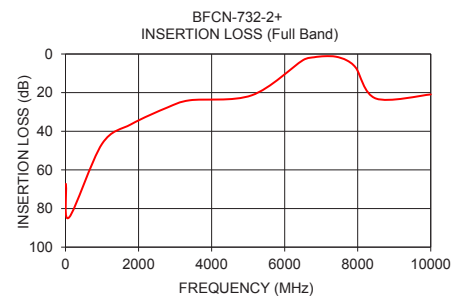
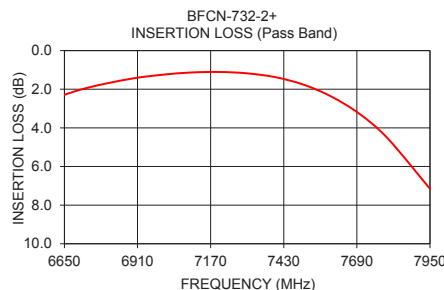


Functional Schematic



Typical Performance Data at 25°C

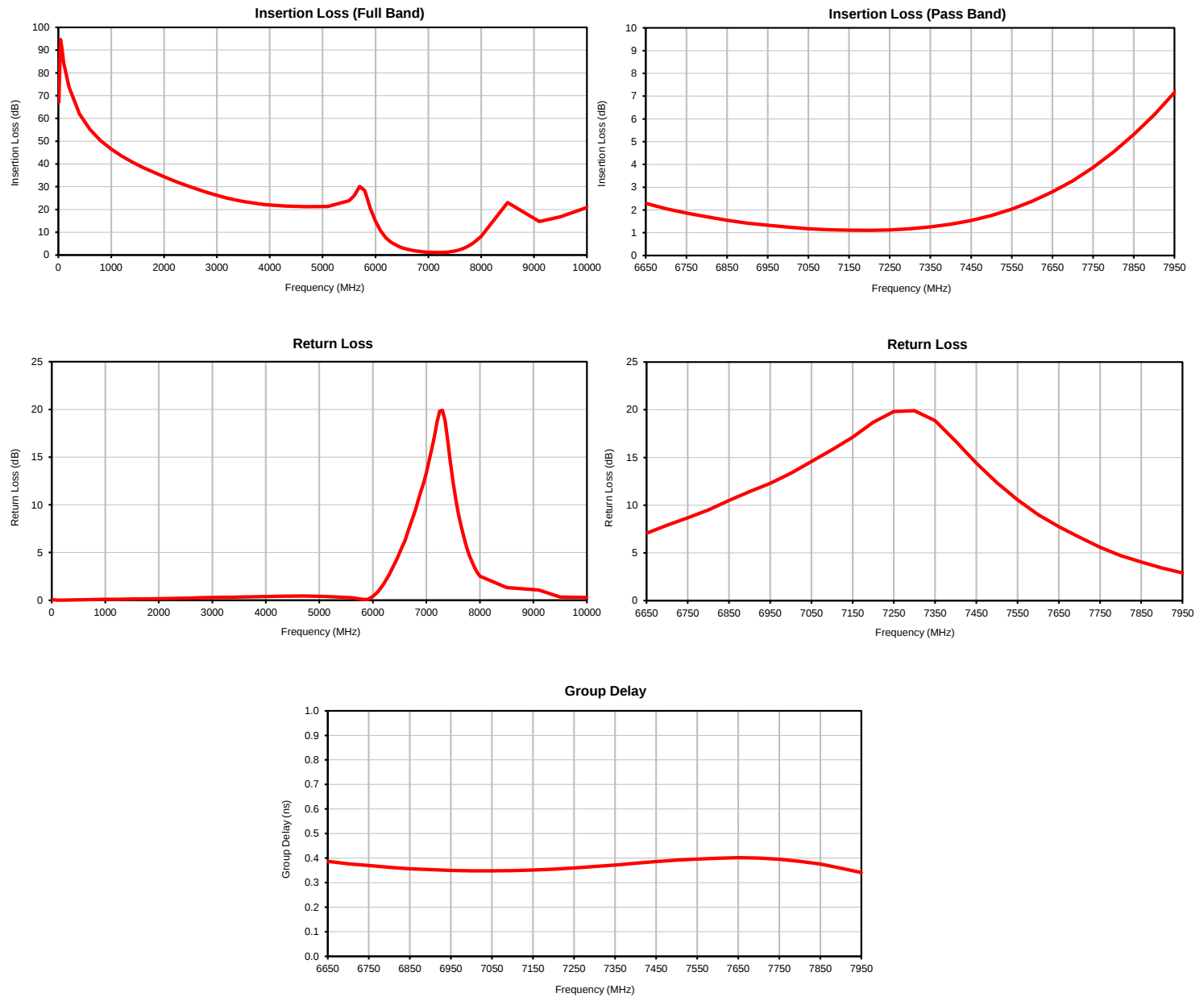
Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)
10	67.23	214.96
100	84.56	1212.87
1000	46.52	195.01
1800	36.34	114.51
2800	27.61	66.38
3400	23.96	53.84
5100	21.37	42.80
6500	3.19	3.56
6800	1.70	2.01
7100	1.13	1.39
7400	1.37	1.34
7700	3.28	2.74
7950	7.16	6.03
8500	23.06	13.08
10000	20.92	59.07



Typical Performance Data

FREQUENCY (MHz)	INSERTION LOSS (dB)	RETURN LOSS (dB)	FREQUENCY (MHz)	GROUP DELAY (ns)
10	67.23	0.08	6650	0.39
40	94.66	0.03	6700	0.38
70	90.71	0.03	6750	0.37
100	84.56	0.01	6800	0.36
200	73.79	0.01	6850	0.36
400	61.91	0.03	6900	0.35
600	55.13	0.06	6950	0.35
800	50.28	0.07	7000	0.35
1000	46.52	0.09	7050	0.35
1200	43.46	0.10	7100	0.35
1400	40.82	0.12	7150	0.35
1600	38.48	0.14	7200	0.36
1800	36.34	0.15	7250	0.36
2000	34.35	0.17	7300	0.37
2200	32.49	0.20	7350	0.37
2400	30.76	0.21	7400	0.38
2600	29.12	0.24	7450	0.39
2800	27.61	0.26	7500	0.39
3000	26.23	0.29	7550	0.40
3200	25.00	0.31	7600	0.40
3400	23.96	0.32	7650	0.40
3500	23.52	0.34	7700	0.40
3900	22.19	0.37	7750	0.40
4300	21.51	0.41	7800	0.39
4700	21.23	0.43	7850	0.38
5100	21.37	0.41	7900	0.36
5500	23.89	0.30	7950	0.34
5600	26.16	0.27		
5700	30.09	0.19		
5800	28.33	0.10		
5900	20.58	0.08		
6000	14.80	0.41		
6100	10.57	0.91		
6200	7.50	1.71		
6300	5.46	2.66		
6450	3.63	4.33		
6500	3.19	5.01		
6550	2.85	5.65		
6600	2.56	6.27		
6650	2.29	7.06		
6700	2.05	7.91		
6750	1.86	8.67		
6800	1.70	9.51		
6850	1.55	10.50		
6900	1.42	11.42		
6950	1.33	12.28		
7000	1.25	13.34		
7050	1.18	14.58		
7100	1.13	15.81		
7150	1.11	17.14		
7200	1.11	18.68		
7250	1.13	19.82		
7300	1.18	19.90		
7350	1.26	18.86		
7400	1.37	16.70		
7450	1.54	14.41		
7500	1.76	12.36		
7550	2.04	10.55		
7600	2.38	9.01		
7650	2.80	7.75		
7700	3.28	6.64		
7750	3.87	5.59		
7800	4.55	4.73		
7850	5.32	4.05		
7900	6.17	3.43		
7950	7.16	2.91		
8000	8.22	2.53		
8500	23.06	1.33		
9100	14.71	1.08		
9500	16.81	0.35		
10000	20.92	0.29		

Typical Performance Curves



DEVICE ORIENTATION IN T&R

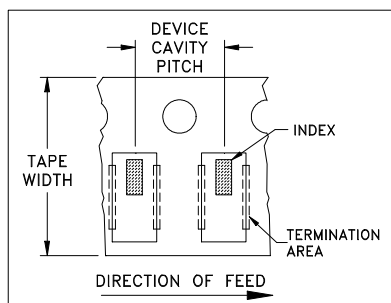


ILLUSTRATION 1

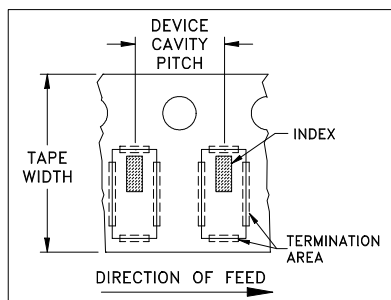


ILLUSTRATION 2

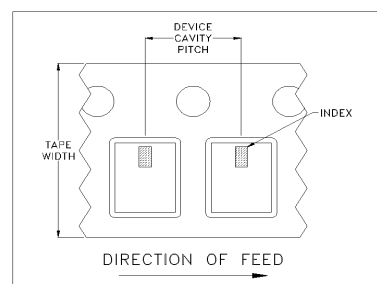


ILLUSTRATION 3

Applicable Case Styles

FV1206-1
FV1206-3

Applicable Case Styles

FV1206-4
FV1206-5
FV1206-6
FV1206-7
FV1206-9

Applicable Case Styles

FV1206-11
FV1206-12
GE0805C-18
NL1008C-6
NL1008C-7
NL1008C-9
NL1008C-10
NL1008C-12

Tape Width, mm	Device Cavity Pitch, mm	Reel Size, inches	Devices per Reel	
8	4	7	Small quantity standards (see note)	20
				50
				100
				200
				500
				1000
			Standard	3000

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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REV	ECN No.	DESCRIPTION	DATE	DR	AUTH
OR	M152168	NEW RELEASE	07/31/15	ITG	AVB

Technical drawing of a coplanar waveguide package. The drawing shows two views of the package: a top view and a side view.

Top View:

- The package outline is shown as a red boundary.
- The coplanar waveguide is represented by a blue area with white circles representing vias or holes.
- A central rectangular area is shaded with diagonal lines, representing a component footprint.
- Dimensions include:
 - .020 TYP (typical) for the width of the central shaded area.
 - .094 (total length of the central section).
 - R.010 TYP (typical) for the radius of the corners of the central section.
 - .199 (overall length of the package).
- Labels include:
 - PIN 1 (pointing to a specific via location).
 - PACKAGE OUTLINE (pointing to the red boundary).
 - COPPLANAR WAVEGUIDE: .0145±.002 TRACE WIDTH & .010±.002 GAP, 2 PL. (SEE NOTE BELOW) (pointing to the blue area).

Side View:

- The side view shows the profile of the package.
- RF in and RF out ports are indicated at the ends of the package.
- Dimensions include:
 - .044 (height of the package).
 - .020 TYP (thickness of the central section).

1. TRACE WIDTH PARAMETERS ARE SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .0066"±.0007". COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH AND GAP 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	ITG	07/30/15
TOLERANCES ON:	CHECKED	GF	07/31/15
2 PL DECIMALS ±	APPROVED	AVB	07/31/15
3 PL DECIMALS ± .005			
ANGLES ±			
FRACTIONS ±			

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Mini-Circuits® 13 Neptune Avenue
Brooklyn NY 11235

PL, 04FL01, FV1206-4, TB-824+

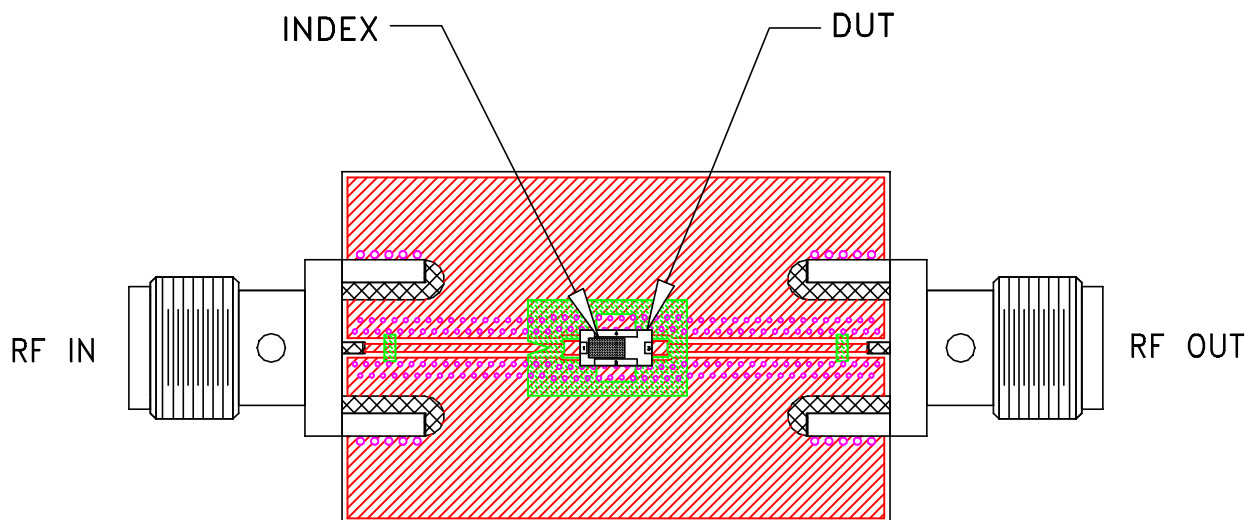
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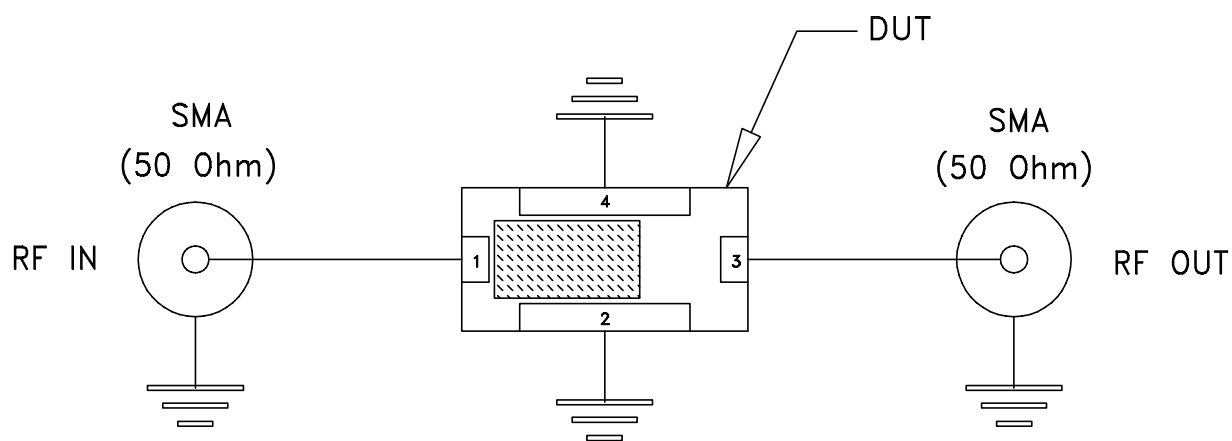
ASHEETA1.DWG REV:A DATE:01/12/95

SIZE A	CODE IDENT 15542	DRAWING NO: 98-PL-454		REV: OR
FILE: 98PL454		SCALE: 16:1	SHEET: 1 OF 1	

Evaluation Board and Circuit



TB-824+



Schematic Diagram

Notes:

1. SMA Female connectors.
2. PCB Material: Rogers R04350 or equivalent,
Dielectric Constant=3.5, Thickness=.0066 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	-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