



Mini-Circuits

LUMPED LC COAXIAL

Bandpass Filter

ZX75BP-253-S+

50Ω 186 to 340 MHz SMA-Male to SMA-Female

KEY FEATURES

- Insertion Loss, 3dB Max.
- Pass Band Return Loss, 12dB Typ.
- Stop Band Rejection, 35dB Min.

APPLICATIONS

- Aircraft Communication
- Navigation

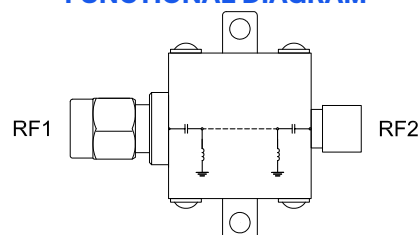
PRODUCT OVERVIEW

ZX75BP-253-S+ is a 50Ω bandpass filter in a connectorized package covering 186 to 340MHz. This offers good matching within the passband and high rejection in stopband.



Generic photo used for illustration purposes only

FUNCTIONAL DIAGRAM



ELECTRICAL SPECIFICATIONS¹ AT +25°C

Parameter		F#	Frequency (MHz)	Min.	Typ.	Max.	Units
Passband	Center Frequency	—	253	—	—	—	MHz
	Insertion Loss	F1-F2	186 - 340	—	—	3	dB
	Return Loss	F1-F2	186 - 340	9	11.7	—	dB
Stop Band, Lower	Rejection	DC-F3	DC - 120	35	—	—	dB
		F3-F4	120 - 140	20	—	—	
Stop Band, Upper	Rejection	F5-F6	440 - 500	20	—	—	dB
		F6-F7	500 - 3000	35	—	—	

1. This filter is bi-directional RF1 and RF2 ports may be interchanged, see S-Parameters for actual performance.

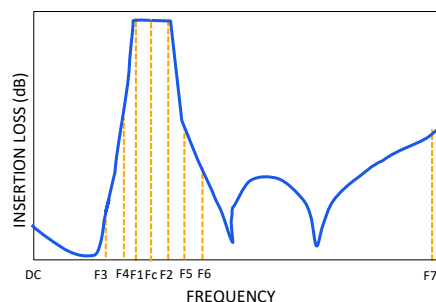
ABSOLUTE MAXIMUM RATINGS²

Parameter	Ratings
Operating Temperature	-40°C to +85°C
Storage Temperature	-55°C to +100°C
Input Power ³	0.5W at 25°C

2. Permanent damage may occur if any of these limits are exceeded.

3. Power rating applies only to signals within the passband.

TYPICAL FREQUENCY RESPONSE AT +25°C



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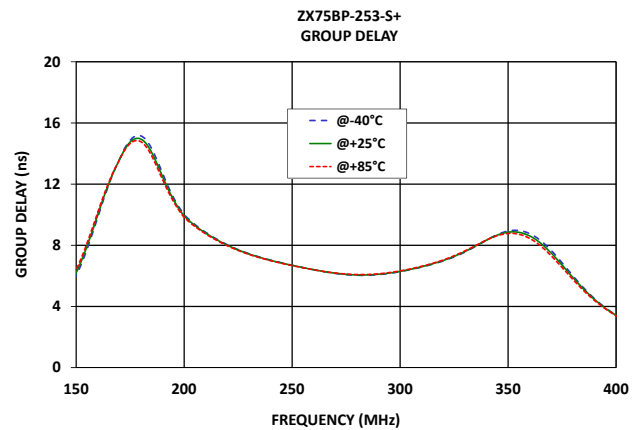
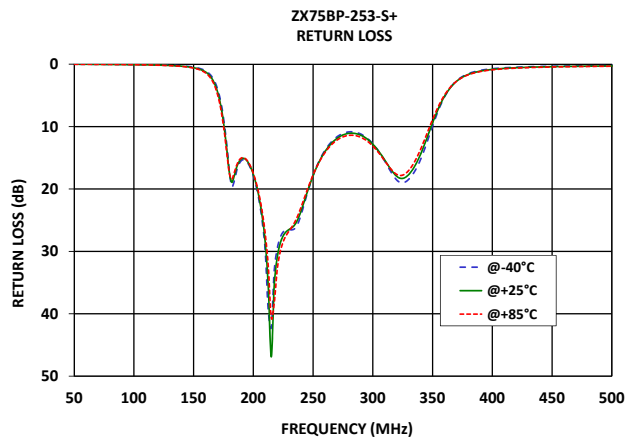
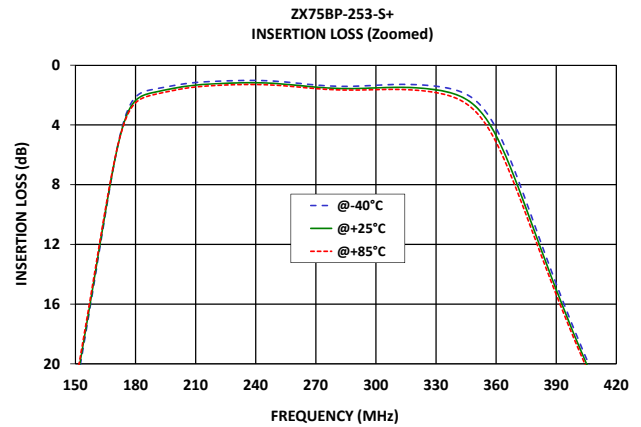
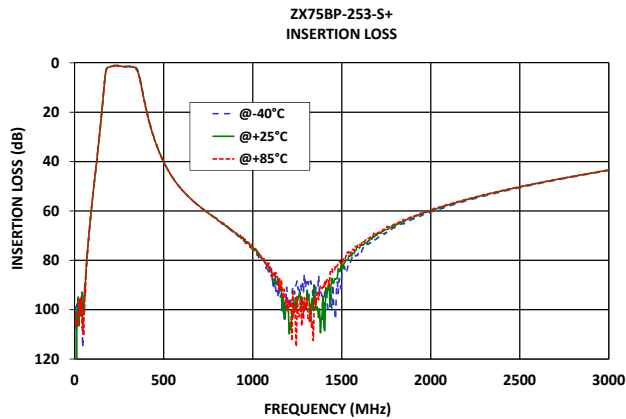
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TYPICAL PERFORMANCE GRAPHS





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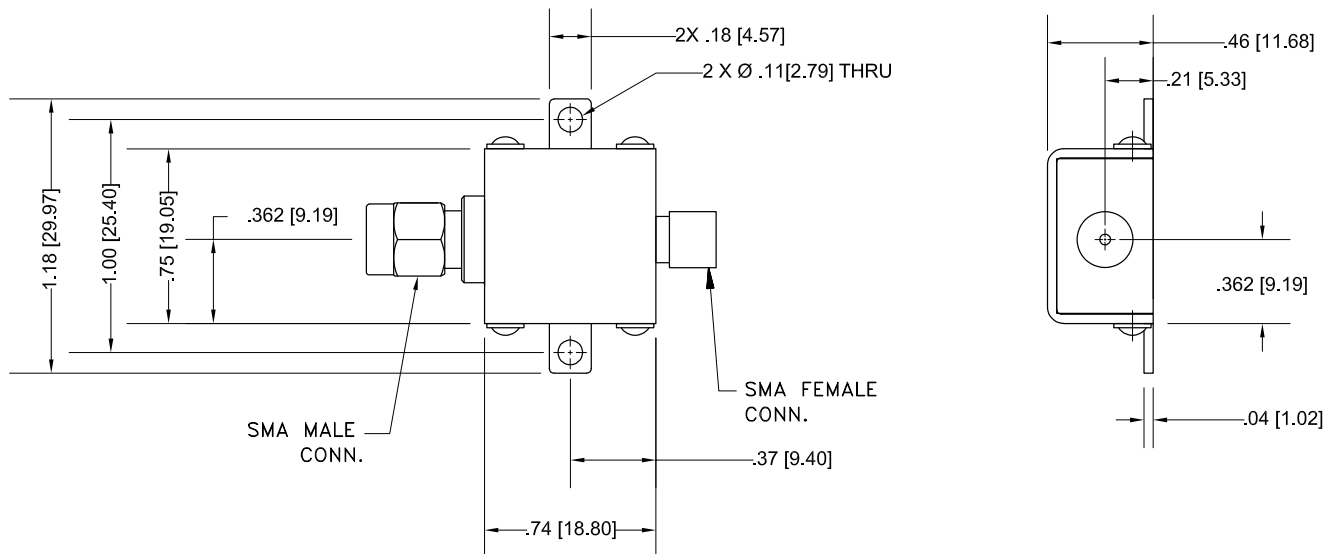
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50Ω 186 to 340 MHz SMA-Male to SMA-Female

CONNECTOR DESCRIPTION

Function	Marking on Unit	Connector
RF1 ¹	1	SMA Male
RF2 ¹	2	SMA Female

CASE STYLE DRAWING



Weight: 24.4 gram

Dimensions are in inches (mm). Tolerances: 2Pl. ± .03; 3Pl. ± .015

Tolerance on hole size and interaxes dimensions to be ± .005.

PRODUCT MARKING*: ZX75BP-253-S+

*Marking may contain other features or characters for internal lot control.





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LUMPED LC COAXIAL

Bandpass Filter

ZX75BP-253-S+

50Ω 186 to 340 MHz SMA-Male to SMA-Female

ADDITIONAL INFORMATION IS AVAILABLE ON OUR DASHBOARD

[CLICK HERE](#)

Performance Data & Graphs	Data
	Graphs
	S-Parameter (S2P Files) Data Set (.zip file)
Case Style	KE1467
RoHS Status	Compliant
Environmental Ratings	ENV46

NOTES

- A. 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.
- B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuits' applicable established test performance criteria and measurement instructions.
- C. 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/terms/viewterm.html



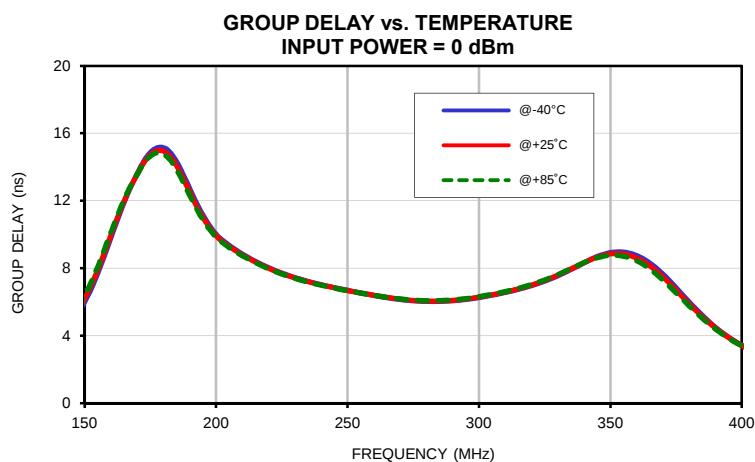
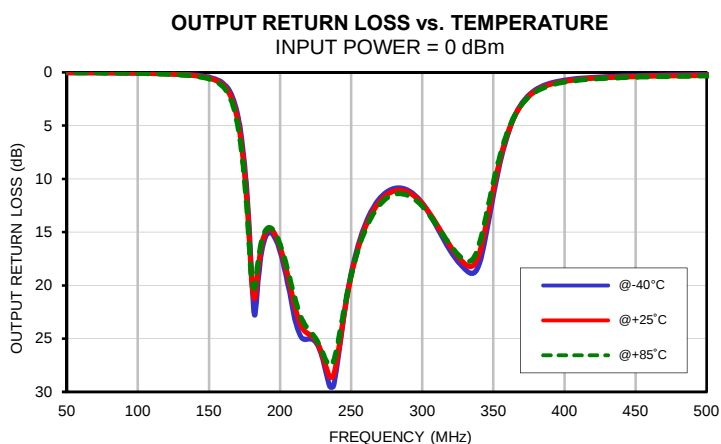
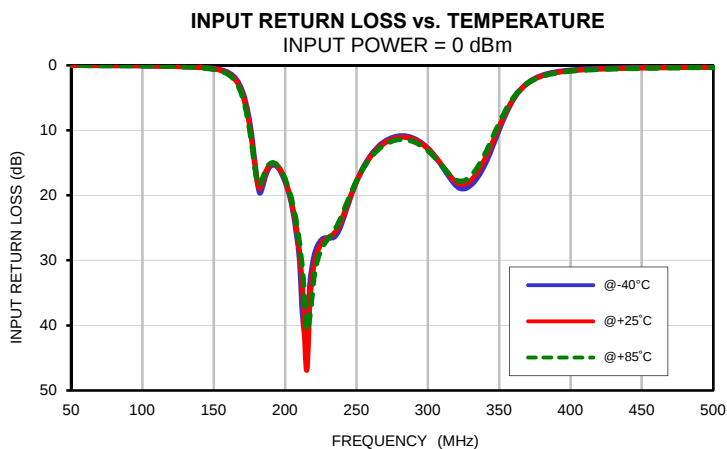
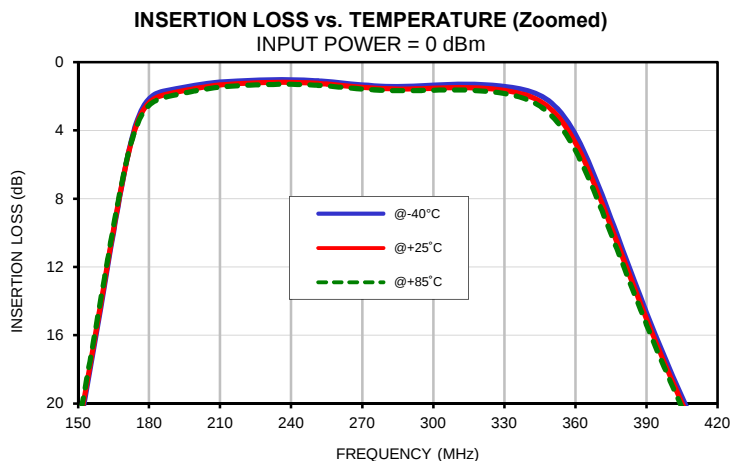
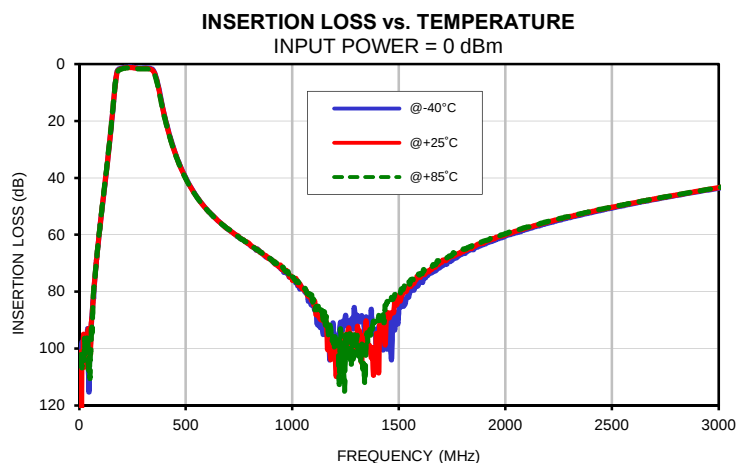
Typical Performance Data

FREQ.	INSERTION LOSS			INPUT RETURN LOSS			OUTPUT RETURN LOSS		
(MHz)	(dB)			(dB)			(dB)		
	@-40°C	@+25°C	@+85°C	@-40°C	@+25°C	@+85°C	@-40°C	@+25°C	@+85°C
10	107.63	127.56	105.02	0.00	0.00	0.00	0.00	0.00	0.00
15	106.56	101.16	104.43	0.00	0.00	0.00	0.00	0.00	0.00
20	99.42	94.92	104.07	0.00	0.00	0.00	0.00	0.00	0.00
25	95.73	106.39	96.34	0.00	0.00	0.00	0.00	0.00	0.01
30	96.50	99.12	95.61	0.00	0.00	0.00	0.00	0.00	0.01
35	96.91	102.37	100.25	0.00	0.01	0.01	0.01	0.01	0.01
40	93.12	96.51	95.81	0.01	0.01	0.01	0.01	0.01	0.01
45	115.25	99.93	103.48	0.00	0.01	0.01	0.01	0.01	0.01
50	99.88	102.15	110.52	0.01	0.01	0.01	0.01	0.01	0.02
55	94.35	91.98	100.70	0.01	0.02	0.02	0.01	0.02	0.02
60	87.93	88.74	94.41	0.01	0.02	0.02	0.01	0.02	0.02
65	82.43	83.11	81.86	0.02	0.02	0.02	0.02	0.02	0.02
70	78.22	77.68	77.25	0.02	0.02	0.03	0.02	0.03	0.03
75	73.88	73.39	73.98	0.02	0.03	0.03	0.02	0.03	0.04
80	69.34	69.31	69.31	0.03	0.04	0.04	0.03	0.04	0.04
85	65.87	65.71	65.66	0.03	0.04	0.05	0.03	0.04	0.05
90	62.28	61.97	61.89	0.04	0.05	0.05	0.04	0.05	0.06
100	55.33	55.20	54.90	0.05	0.07	0.08	0.05	0.07	0.08
110	48.76	48.58	48.32	0.08	0.10	0.11	0.07	0.09	0.11
120	42.35	42.11	41.83	0.11	0.14	0.16	0.10	0.13	0.15
130	35.86	35.60	35.31	0.17	0.21	0.23	0.16	0.19	0.22
140	29.11	28.85	28.55	0.27	0.32	0.36	0.25	0.30	0.34
150	21.91	21.64	21.35	0.47	0.56	0.62	0.44	0.52	0.60
165	9.92	9.78	9.59	1.92	2.20	2.45	1.88	2.16	2.43
172	4.86	4.92	4.93	5.35	5.92	6.43	5.39	5.97	6.51
176	3.04	3.22	3.32	9.96	10.69	11.31	10.26	11.05	11.77
186	1.70	1.92	2.08	17.14	16.55	16.21	17.70	16.91	16.46
200	1.34	1.52	1.66	17.91	17.66	17.49	16.82	16.40	16.16
220	1.08	1.24	1.36	29.58	30.96	32.89	25.02	24.55	24.15
240	1.02	1.18	1.29	24.10	23.50	22.88	27.58	26.96	25.85
253	1.11	1.26	1.37	16.39	16.49	16.49	17.16	17.42	17.49
270	1.33	1.47	1.57	11.64	11.89	12.16	11.83	12.12	12.42
300	1.35	1.52	1.64	12.74	12.82	13.12	12.29	12.32	12.57
320	1.30	1.51	1.68	18.57	17.98	17.67	16.82	16.39	16.28
340	1.67	1.96	2.21	15.26	14.42	13.63	17.98	17.04	16.14
350	2.40	2.79	3.14	9.91	9.40	8.86	11.47	10.93	10.30
360	4.23	4.72	5.16	5.25	5.14	4.95	5.82	5.73	5.54
375	9.14	9.60	10.03	1.98	2.08	2.12	2.10	2.22	2.27
410	21.14	21.46	21.71	0.58	0.67	0.73	0.56	0.65	0.72
440	28.96	29.23	29.40	0.37	0.44	0.49	0.34	0.42	0.47
450	31.16	31.41	31.57	0.33	0.40	0.45	0.31	0.38	0.43
460	33.20	33.44	33.58	0.30	0.37	0.42	0.28	0.35	0.40
470	35.09	35.31	35.44	0.28	0.34	0.39	0.26	0.32	0.37
480	36.85	37.06	37.18	0.26	0.32	0.37	0.24	0.31	0.35
500	40.02	40.21	40.32	0.22	0.29	0.33	0.21	0.27	0.32
600	51.22	51.24	51.27	0.15	0.21	0.25	0.14	0.21	0.25
700	58.19	58.05	58.08	0.12	0.19	0.23	0.12	0.19	0.23
800	63.56	63.32	63.48	0.11	0.19	0.24	0.10	0.18	0.22
900	68.56	68.75	68.80	0.11	0.19	0.24	0.10	0.18	0.23
1000	75.26	76.01	74.72	0.11	0.20	0.26	0.09	0.18	0.24
1100	84.80	84.63	82.79	0.12	0.22	0.28	0.09	0.19	0.25
1200	97.35	100.16	95.70	0.13	0.23	0.30	0.09	0.19	0.25
1300	88.14	99.52	97.27	0.15	0.24	0.32	0.09	0.20	0.26
1400	99.68	107.19	91.24	0.16	0.26	0.34	0.09	0.20	0.27
1500	85.60	81.25	80.86	0.17	0.28	0.35	0.09	0.21	0.28
1700	70.87	69.67	69.11	0.19	0.30	0.38	0.09	0.22	0.30
1900	63.16	62.75	62.12	0.21	0.33	0.41	0.09	0.22	0.30
2000	60.36	59.98	59.55	0.22	0.34	0.42	0.09	0.22	0.31
2500	50.59	50.23	50.19	0.26	0.38	0.46	0.10	0.23	0.33
3000	43.59	43.41	43.40	0.27	0.39	0.48	0.11	0.25	0.33

Typical Performance Data

FREQ.	GROUP DELAY		
(MHz)	(nsec)		
	@-40°C	@+25°C	@+85°C
186.0	14.02	13.77	13.55
188.0	13.38	13.14	12.93
190.0	12.71	12.49	12.30
192.0	12.04	11.85	11.69
194.0	11.42	11.27	11.13
196.0	10.88	10.75	10.63
198.0	10.41	10.30	10.20
200.0	10.01	9.92	9.83
205.0	9.36	9.29	9.22
210.0	8.84	8.79	8.74
212.5	8.62	8.57	8.52
215.0	8.41	8.37	8.33
217.5	8.22	8.18	8.14
220.0	8.03	8.00	7.97
222.5	7.87	7.84	7.81
225.0	7.71	7.69	7.66
227.5	7.58	7.55	7.53
230.0	7.45	7.43	7.40
232.5	7.33	7.31	7.29
235.0	7.22	7.21	7.18
240.0	7.03	7.01	6.99
245.0	6.86	6.84	6.83
253.0	6.60	6.60	6.59
255.0	6.54	6.54	6.53
260.0	6.40	6.40	6.40
265.0	6.27	6.28	6.28
270.0	6.16	6.17	6.18
275.0	6.08	6.10	6.12
280.0	6.04	6.06	6.09
285.0	6.04	6.06	6.09
290.0	6.08	6.10	6.13
295.0	6.16	6.18	6.21
300.0	6.28	6.30	6.32
305.0	6.42	6.43	6.46
310.0	6.58	6.60	6.62
315.0	6.76	6.79	6.82
320.0	6.98	7.01	7.04
325.0	7.24	7.28	7.31
330.0	7.55	7.59	7.63
335.0	7.93	7.96	7.99
340.0	8.33	8.34	8.34

Typical Performance Curves



Outline Dimensions



CASE #.	A	B	C	D	E	F	G	H	J	K	L	M
KE1467	.74 (18.80)	.75 (19.05)	.46 (11.68)	1.18 (29.97)	.04 (1.02)	.362 (9.19)	.21 (5.33)	.362 (9.19)	1.00 (25.40)	.37 (9.40)	.18 (4.57)	.11 (2.79)

CASE #.	WT. GRAM
KE1467	24.4

Dimensions are in inches (mm). Tolerances: 2Pl. $\pm .03$; 3Pl. $\pm .015$

Tolerance on hole size and interaxes dimensions to be $\pm .005$.

Note:

1. Case material: Brass
2. Case finish: Gold
3. Cover: Nickel plated.



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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	-55° to 100°C Ambient Environment	Individual Model Data Sheet
Storage Temperature	-55° to 100° C Ambient Environment	Individual Model Data Sheet
Humidity	90 to 95% RH, 40°C, 96 hours; Units may require bake-out after humidity to restore full performance.	MIL-STD-202, Method 103, Condition B
Thermal Shock	-55° to 100°C, 100 cycles	MIL-STD-202, Method 107, Condition A-3, except +100°C
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, 11ms half-sine, 3 shocks each direction 3 axes (total 18)	MIL-STD-202, Method 213, Condition A