Coaxial

Bandpass Filter

ZX75BP-204-S+

50Ω 175 to 237 MHz

Generic photo used for illustration purposes only

CASE STYLE: KE1467

The Big Deal

- High rejection
- Fast roll-off
- Connectorized package

Product Overview

ZX75BP-204-S+ is a 50Ω bandpass filter in a connectorized package covering 175 to 237 MHz. This offers good matching within the passband and high rejection in stopband. This will find its applications in transmitters and receivers to suppress spurious emission and harmonics.

Key Features

Feature	Advantages
High rejection	Attenuates unwanted spurious and harmonics
Fast roll-off	Provides high selectivity
Connectorized package	Easy to interface with other devices and well suited for test setups

Coaxial

Bandpass Filter

50Ω 175 to 237 MHz

ZX75BP-204-S+

Generic photo used for illustration purposes only

CASE STYLE: KE1467

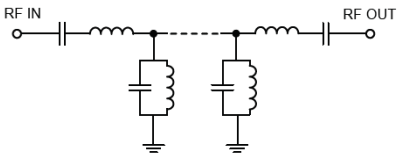
Features

- High rejection
- Fast roll-off
- Connectorized package

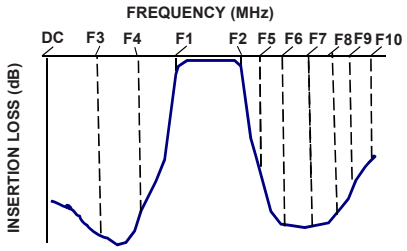
Applications

- TV Broadcasting
- Digital audio broadcasting
- Military radio

Functional Schematic



Typical Frequency Response



+RoHS Compliant

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

Electrical Specifications at 25°C

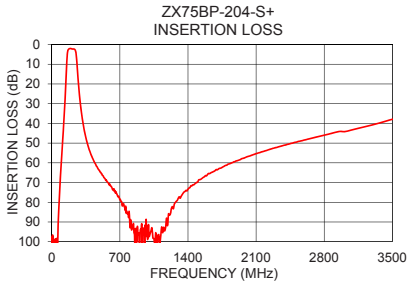
Parameter		F#	Frequency (MHz)	Min.	Typ.	Max.	Unit
Pass Band	Insertion Loss	F1-F2	175-237	—	2.0	3.2	dB
	VSWR	F1-F2	175-237	—	1.4	2.1	:1
Stop Band, Lower	Insertion Loss	DC-F3	DC - 90	55	60	—	dB
		F3-F4	90-135	20	—	—	dB
	VSWR	DC-F4	DC - 135	—	20	—	:1
Stop Band, Upper	Insertion Loss	F5-F6	300-360	25	—	—	dB
		F6-F7	360-600	40	—	—	dB
		F7-F8	600-1400	60	—	—	dB
		F8-F9	1400-2500	40	—	—	dB
		F9-F10	2500-3500	30	—	—	dB
	VSWR	F5-F10	300-3500	—	20	—	:1

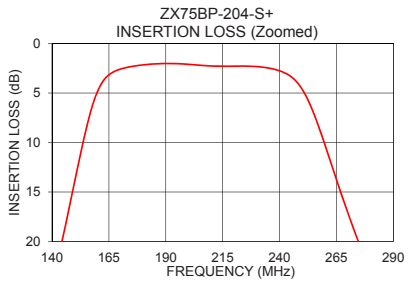
Maximum Ratings	
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power Input	0.5 W Max.@ 25°C

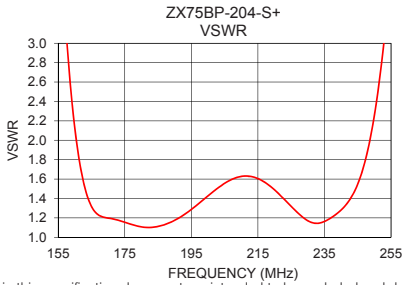
Permanent damage may occur if any of these limits are exceeded.

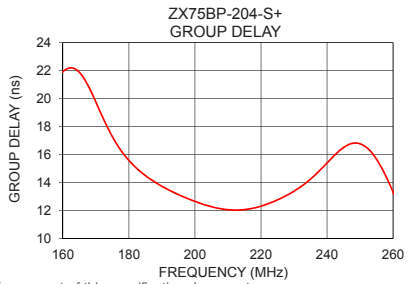
Typical Performance Data at 25°C

Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)	Frequency (MHz)	Group Delay (nsec)
1	101.23	12773.37	175	17.28
90	66.60	270.25	177	16.50
130	33.98	46.09	179	15.86
135	29.38	34.10	181	15.33
145	19.32	15.84	183	14.88
165	3.15	1.32	185	14.50
175	2.32	1.16	187	14.17
204	2.17	1.53	189	13.87
237	2.56	1.20	191	13.61
275	20.23	16.87	204	12.35
295	30.43	31.24	205	12.28
300	32.51	34.77	207	12.17
360	49.08	70.27	209	12.09
600	71.53	113.54	215	12.07
1400	73.44	64.30	217	12.14
2500	49.61	42.15	219	12.25
3100	43.13	39.12	225	12.77
3300	40.71	38.14	227	12.99
3400	39.36	37.10	235	14.25
3500	37.95	34.07	237	14.68









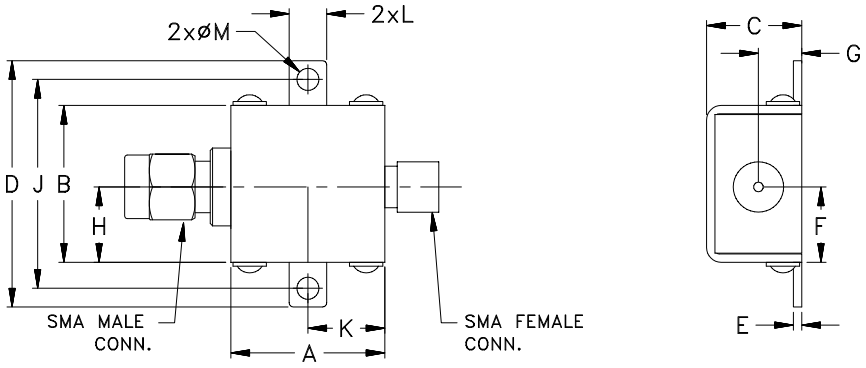
Notes

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-Circuit's 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/MCLStore/terms.jsp

Pad Connections

PORT - 1	SMA-MALE
PORT - 2	SMA-FEMALE

Outline Drawing



Outline Dimensions (inch / mm)

A	B	C	D	E	F	G
.74	**.75**	**.46**	**1.18**	**.04**	**.362**	**.21**
18.80	19.05	11.68	29.97	1.02	9.19	5.33

H	J	K	L	M		Wt.
.362	**1.00**	**.37**	**.18**	**.11**		grams
9.19	25.40	9.40	4.57	2.79		24.4

Note: Please refer case style drawing for details.

Coaxial Band Pass Filter ZX75BP-204-S+

Typical Performance Data

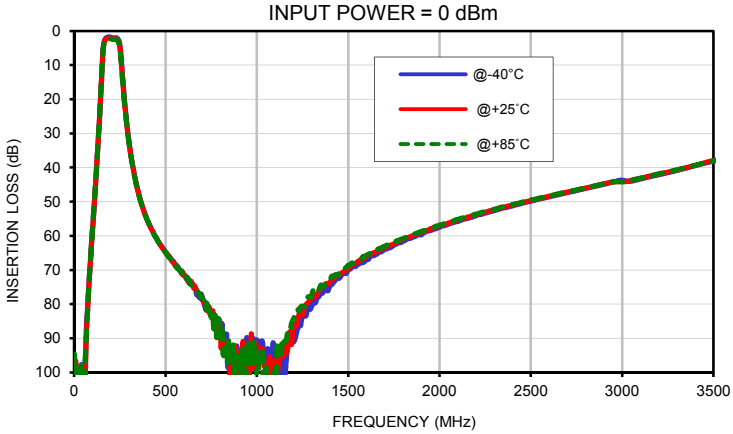
FREQ.	INSERTION LOSS			INPUT RETURN LOSS			OUTPUT RETURN LOSS		
(MHz)	(dB)			(dB)			(dB)		
	@-40°C	@+25°C	@+85°C	@-40°C	@+25°C	@+85°C	@-40°C	@+25°C	@+85°C
1	99.61	101.23	99.12	0.00	0.00	0.00	0.00	0.00	0.00
10	103.70	101.06	113.06	0.00	0.00	0.00	0.00	0.00	0.00
20	102.69	113.72	98.15	0.00	0.00	0.00	0.00	0.00	0.00
30	105.47	109.13	99.98	0.01	0.01	0.00	0.01	0.01	0.00
40	97.76	102.68	96.98	0.00	0.01	0.01	0.01	0.01	0.01
90	66.89	66.60	66.36	0.05	0.06	0.07	0.05	0.06	0.07
100	58.76	58.57	58.40	0.07	0.09	0.10	0.07	0.09	0.10
135	29.71	29.38	29.05	0.42	0.51	0.56	0.40	0.48	0.55
165	2.82	3.15	3.36	16.86	17.26	17.42	22.82	25.51	26.65
175	2.00	2.32	2.51	24.04	22.86	22.21	20.90	19.95	19.57
195	1.74	2.03	2.22	18.32	18.04	17.44	18.55	18.16	17.43
201	1.83	2.12	2.31	14.54	14.64	14.41	14.67	14.72	14.38
203	1.87	2.15	2.35	13.68	13.86	13.73	13.74	13.87	13.64
204	1.89	2.17	2.36	13.33	13.55	13.46	13.37	13.53	13.34
237	2.17	2.56	2.82	21.34	20.77	20.07	20.22	21.03	21.77
241	2.39	2.83	3.14	18.06	17.29	16.50	23.69	24.64	24.97
251	4.27	5.03	5.58	7.89	7.40	6.99	9.58	8.87	8.40
261	10.19	10.95	11.54	2.42	2.54	2.54	2.70	2.80	2.82
279	22.12	22.55	22.90	0.75	0.88	0.94	0.78	0.90	0.97
300	32.24	32.51	32.71	0.40	0.50	0.55	0.41	0.50	0.55
360	48.94	49.08	49.13	0.18	0.25	0.29	0.18	0.25	0.28
400	55.26	55.35	55.43	0.13	0.20	0.23	0.14	0.20	0.22
500	64.78	64.70	64.88	0.08	0.16	0.19	0.10	0.16	0.18
600	71.61	71.53	71.31	0.07	0.15	0.19	0.08	0.15	0.17
700	77.89	78.70	77.86	0.07	0.16	0.20	0.08	0.15	0.18
750	82.85	82.49	83.67	0.07	0.16	0.21	0.08	0.15	0.18
800	88.03	88.40	88.47	0.07	0.17	0.22	0.08	0.16	0.19
850	96.36	96.17	96.04	0.07	0.18	0.23	0.08	0.16	0.20
1000	90.46	97.26	105.01	0.08	0.20	0.26	0.09	0.18	0.22
1100	99.07	96.42	121.50	0.09	0.22	0.28	0.10	0.20	0.24
1150	102.09	92.73	91.19	0.10	0.23	0.29	0.10	0.20	0.25
1200	91.00	85.92	84.52	0.11	0.24	0.30	0.10	0.21	0.26
1250	82.99	83.28	80.58	0.11	0.24	0.31	0.11	0.22	0.27
1300	80.74	78.01	77.50	0.12	0.25	0.33	0.11	0.23	0.28
1350	76.76	75.40	74.46	0.12	0.26	0.34	0.11	0.23	0.29
1400	74.65	73.44	73.10	0.13	0.27	0.35	0.12	0.24	0.30
1450	72.47	71.17	70.78	0.14	0.28	0.36	0.13	0.25	0.31
1500	69.90	69.78	68.65	0.15	0.29	0.37	0.13	0.26	0.31
1550	68.54	67.67	67.23	0.15	0.29	0.38	0.14	0.27	0.33
1600	66.83	66.01	65.76	0.16	0.30	0.39	0.14	0.27	0.33
1650	65.52	64.76	64.53	0.17	0.31	0.40	0.15	0.28	0.34
1700	63.79	63.57	63.11	0.17	0.32	0.41	0.15	0.29	0.35
1750	62.76	62.36	61.81	0.18	0.33	0.42	0.16	0.29	0.36
1800	61.61	61.15	60.79	0.18	0.33	0.43	0.16	0.30	0.37
1850	60.53	59.99	59.74	0.19	0.34	0.44	0.17	0.31	0.37
1900	59.71	58.99	58.72	0.20	0.35	0.45	0.17	0.31	0.39
1950	58.43	57.94	57.73	0.20	0.35	0.46	0.17	0.32	0.39
2000	57.50	57.08	56.83	0.21	0.36	0.47	0.18	0.33	0.40
2050	56.56	56.23	55.92	0.21	0.37	0.48	0.19	0.33	0.40
2100	55.80	55.36	55.18	0.21	0.37	0.49	0.18	0.33	0.40
2150	54.97	54.57	54.41	0.21	0.38	0.49	0.20	0.34	0.42
2200	54.12	53.84	53.63	0.22	0.38	0.51	0.20	0.35	0.42
2250	53.37	53.04	52.90	0.22	0.39	0.52	0.20	0.35	0.43
2500	49.87	49.61	49.52	0.23	0.41	0.55	0.22	0.38	0.45
2700	47.33	47.19	47.14	0.23	0.42	0.58	0.23	0.39	0.46
3000	43.71	44.20	44.13	0.24	0.44	0.61	0.28	0.44	0.51
3100	43.36	43.13	43.10	0.23	0.44	0.61	0.25	0.41	0.50
3200	42.09	41.92	41.88	0.24	0.45	0.61	0.25	0.42	0.49
3300	40.84	40.71	40.65	0.24	0.46	0.62	0.25	0.42	0.49
3500	38.08	37.95	37.96	0.28	0.51	0.67	0.28	0.45	0.53

Typical Performance Data

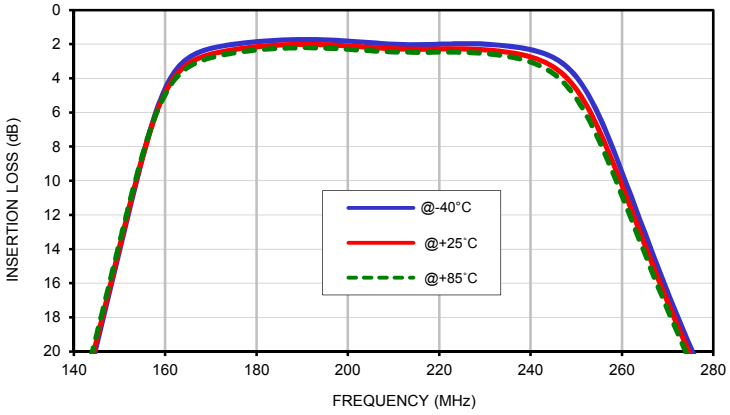
FREQ. (MHz)	GROUP DELAY (ns)		
	@-40°C	@+25°C	@+85°C
165	22.30	21.88	21.57
167	21.66	21.21	20.88
169	20.71	20.28	19.95
171	19.61	19.22	18.94
173	18.51	18.19	17.96
175	17.53	17.28	17.09
177	16.70	16.50	16.36
179	16.02	15.86	15.74
181	15.46	15.33	15.23
183	15.00	14.88	14.80
185	14.60	14.50	14.43
187	14.26	14.17	14.10
189	13.95	13.87	13.81
191	13.68	13.61	13.55
193	13.44	13.37	13.31
195	13.21	13.15	13.09
197	12.99	12.94	12.89
199	12.79	12.75	12.70
201	12.61	12.57	12.53
203	12.44	12.41	12.38
204	12.36	12.35	12.32
207	12.16	12.17	12.16
209	12.07	12.09	12.09
211	12.01	12.05	12.06
213	11.99	12.04	12.06
215	12.02	12.07	12.11
217	12.08	12.14	12.19
219	12.19	12.25	12.30
221	12.33	12.39	12.45
223	12.50	12.57	12.63
225	12.70	12.77	12.83
227	12.93	12.99	13.07
229	13.17	13.25	13.33
231	13.45	13.54	13.63
233	13.78	13.87	13.96
235	14.14	14.25	14.35
237	14.58	14.68	14.78
239	15.07	15.16	15.24
241	15.60	15.65	15.70
243	16.14	16.12	16.12
245	16.62	16.51	16.44
247	16.99	16.76	16.62
249	17.16	16.83	16.60
251	17.10	16.67	16.37
253	16.80	16.29	15.92
255	16.24	15.68	15.26
257	15.45	14.86	14.42
259	14.45	13.87	13.43
261	13.31	12.77	12.35
263	12.10	11.63	11.25
265	10.89	10.51	10.18

Typical Performance Curves

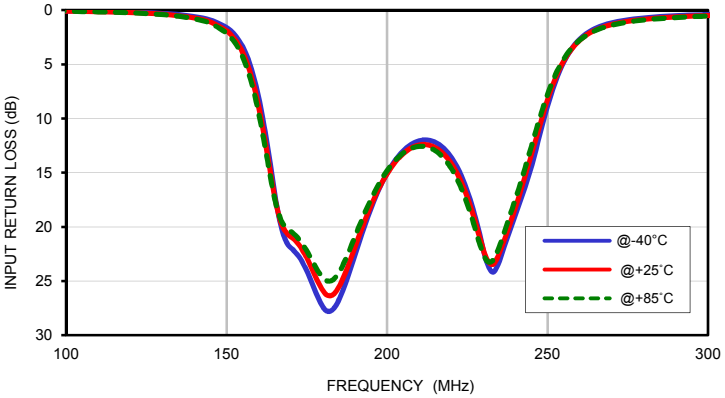
INSERTION LOSS vs. TEMPERATURE
INPUT POWER = 0 dBm



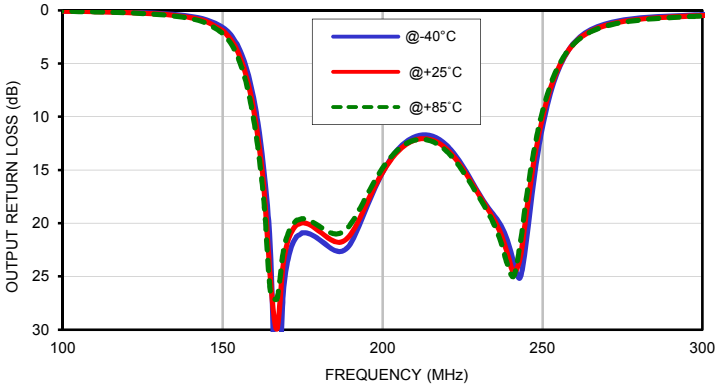
INSERTION LOSS vs. TEMPERATURE (Zoomed)
INPUT POWER = 0 dBm



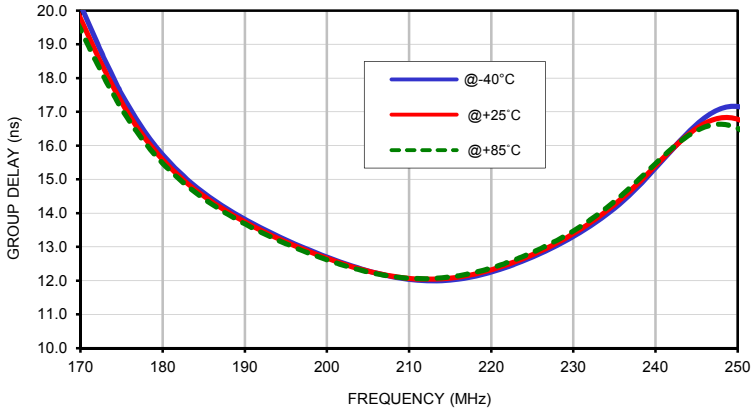
INPUT RETURN LOSS vs. TEMPERATURE
INPUT POWER = 0 dBm



OUTPUT RETURN LOSS vs. TEMPERATURE
INPUT POWER = 0 dBm



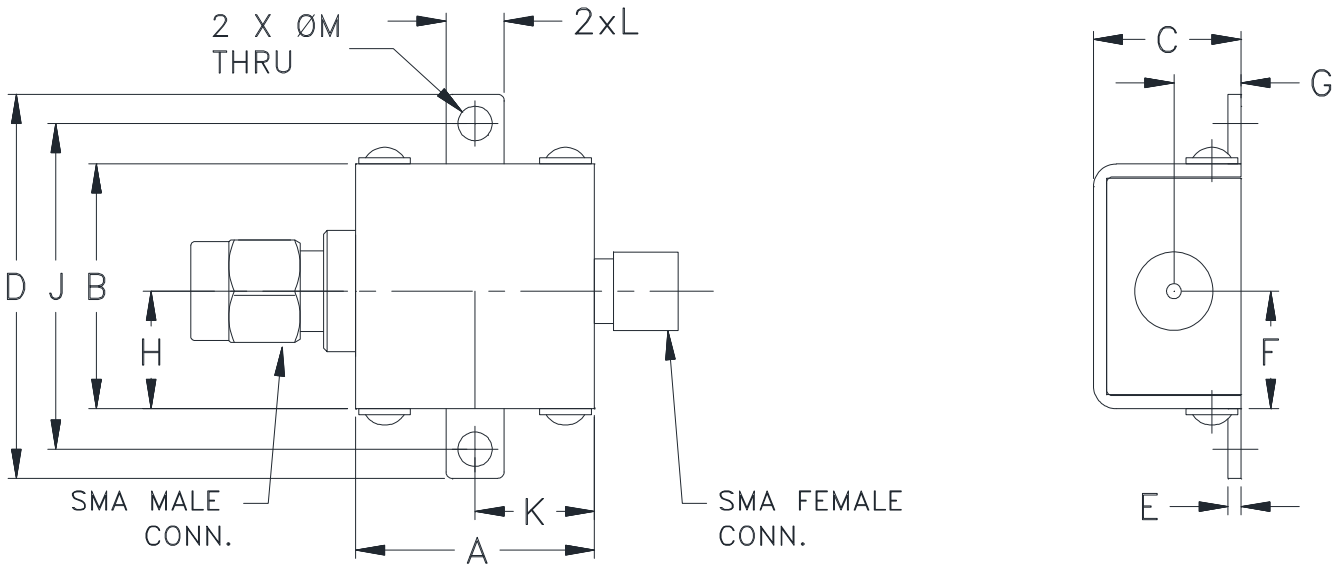
GROUP DELAY vs. TEMPERATURE
INPUT POWER = 0 dBm



Case Style KE

KE1467

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. ± .03; 3Pl. ± .015
Tolerance on hole size and interaxes dimensions to be ± .005.

Note:

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

Mini-Circuits®
INTERNET http://www.minicircuits.com
P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661
Distribution Centers NORTH AMERICA 800-654-7949 • 417-335-5935 • Fax 417-335-5945 • EUROPE 44-1252-832600 • Fax 44-1252-837010
Mini-Circuits ISO 9001 & ISO 14001 Certified

Mini-Circuits

Environmental Specifications ENV46

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, Condintion 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