

Coaxial Low Pass Filter

ZX75LP-70-S+

50Ω

DC to 70 MHz

The Big Deal

- High rejection
- Low Insertion loss, 1.5 dB typical in passband
- Fast roll-off
- Good VSWR
- Connectorized package



Generic photo used for illustration purposes only
CASE STYLE: KE1467

Product Overview

ZX75LP-70-S+ is a 50Ω low pass filter built in a connectorized package. Covering DC-70 MHz bandwidth, these units offer good matching within the passband and high rejection in stopband. This will find its applications in receivers and transmitters to suppress spurious emission and harmonics. It has repeatable performance across production lots and consistent performance across temperature.

Key Features

Feature	Advantages
Low passband insertion loss	Suitable for high performance application
Fast roll-off	Provides very good adjacent band rejection
Connectorized package	The connectorized package is easy to interface with other devices and well suited for test setups
Good VSWR	Provides good interface when used with other devices.

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



www.minicircuits.com P.O. Box 350166, Brooklyn, NY 11235-0003 (718) 934-4500 sales@minicircuits.com

Low Pass Filter

50Ω

DC to 70 MHz

ZX75LP-70-S+



Generic photo used for illustration purposes only

CASE STYLE: KE1467

Connectors	Model
SMA-MF	ZX75LP-70-S+

Features

- High rejection
- Low insertion loss
- Fast roll-off
- Good VSWR
- Connectorized package

Applications

- Satellite
- Wireless communications
- Receivers / Transmitters

Electrical Specifications at 25°C

Parameter	F#	Frequency (MHz)	Min.	Typ.	Max.	Unit
Pass Band	Insertion Loss	DC-F1	DC-70	—	1.5	2.2 dB
	Freq. Cut-Off	F2	78	—	3.0	dB
	VSWR	DC-F1	DC-70	—	1.2	1.6 :1
Stop Band	Rejection Loss	F3-F4	105-4000	20	35	dB
	VSWR	F3-F4	105-4000	—	20	— :1

Maximum Ratings

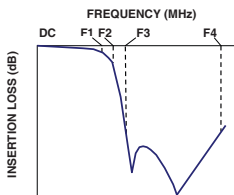
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power Input	0.5W max.

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

Functional Schematic



Typical Frequency Response

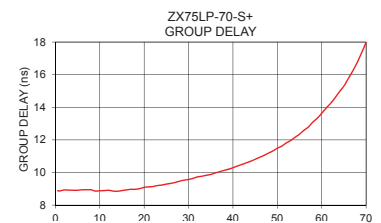
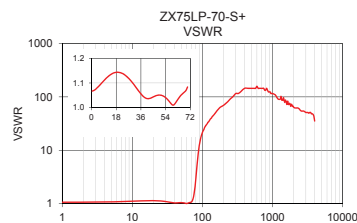
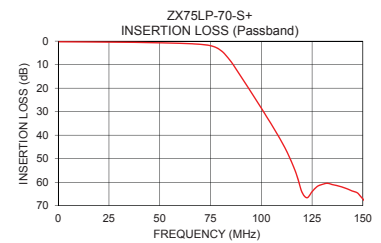
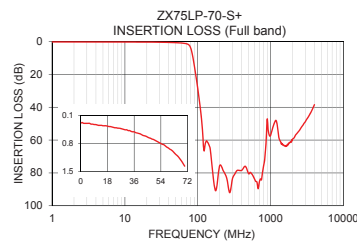


Typical Performance Data at 25°C

Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)	Frequency (MHz)	Group Delay (nsec)
1	0.28	1.07	1	8.87
30	0.46	1.09	5	8.91
50	0.72	1.05	10	8.88
70	1.36	1.06	15	8.89
78	2.84	1.89	18	8.97
80	3.90	2.57	20	9.09
85	8.63	6.13	22	9.14
90	15.05	11.61	25	9.29
95	21.77	16.72	30	9.57
100	28.48	20.95	35	9.88
105	35.43	24.14	40	10.29
200	75.62	69.49	45	10.81
250	83.16	91.43	50	11.49
500	80.48	144.77	55	12.35
750	84.20	133.63	60	13.63
1000	57.24	115.81	62	14.24
1500	63.00	91.43	64	14.96
2000	59.48	75.53	66	15.77
3000	48.86	62.05	68	16.75
4000	38.49	36.97	70	17.99

+RoHS Compliant

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



Notes

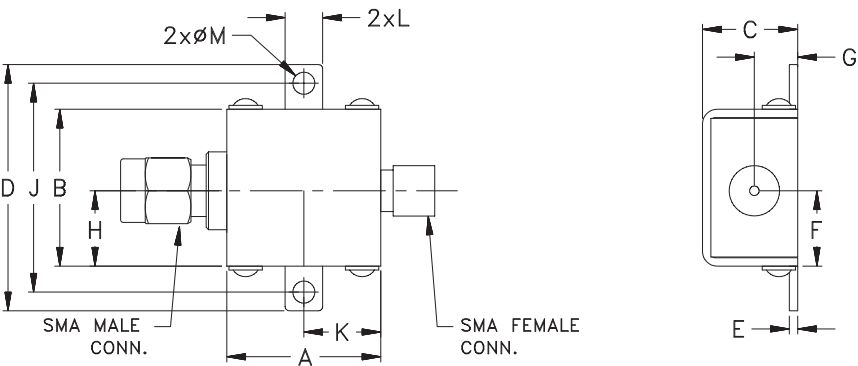
- A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
 B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuits' 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/MCLStore/terms.jsp



Coaxial Connections

INPUT	SMA-Male
OUTPUT	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 to case style drawing for details

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

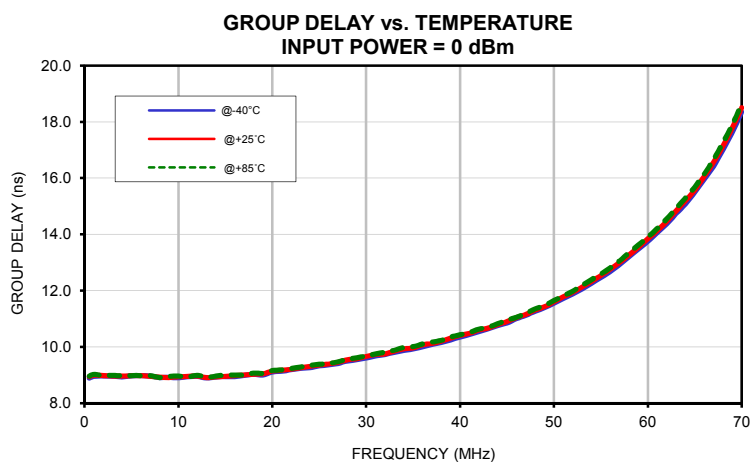
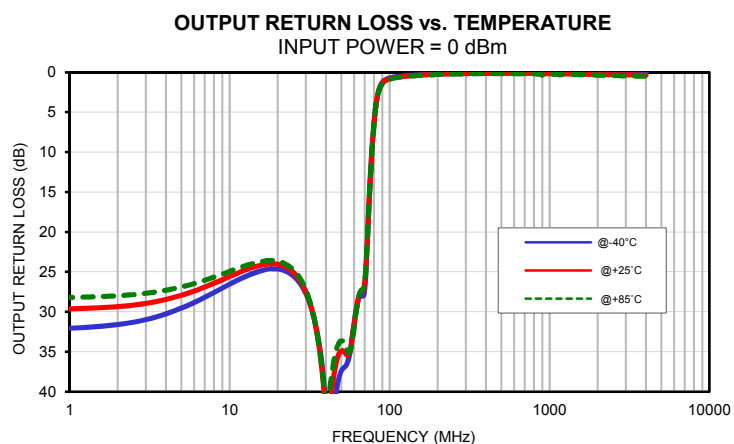
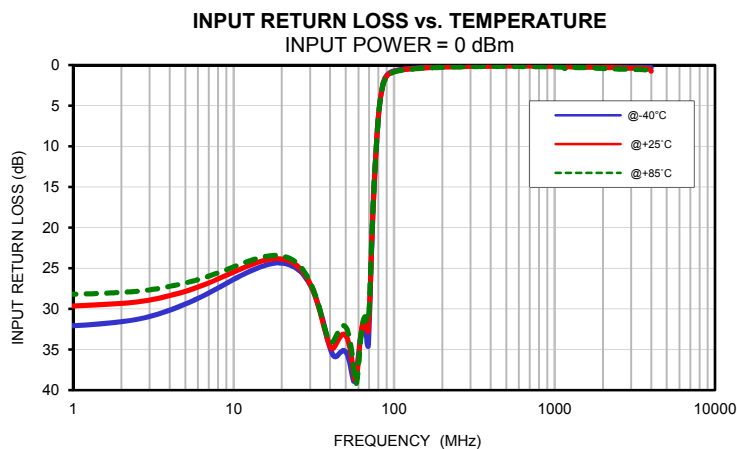
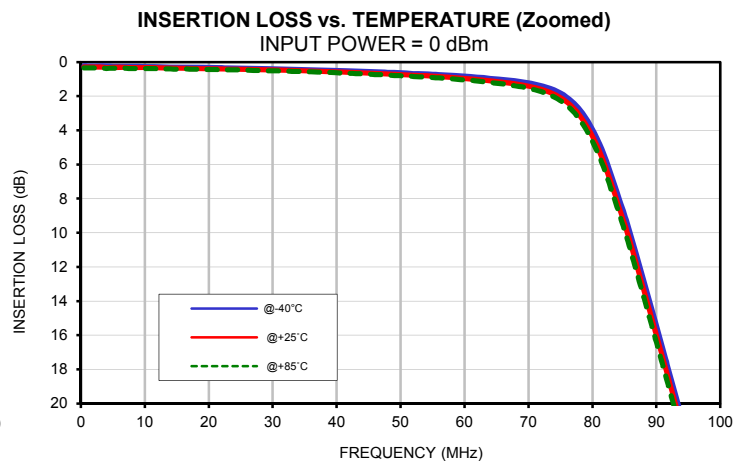
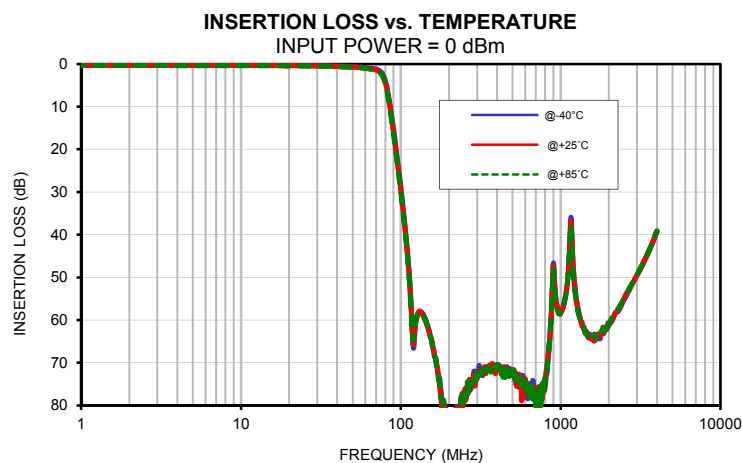
Typical Performance Data

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
0.5	0.21	0.28	0.34	32.21	29.71	28.27	32.23	29.74	28.29
1	0.22	0.29	0.34	32.06	29.62	28.19	32.07	29.63	28.21
10	0.26	0.33	0.38	26.37	25.46	24.82	26.54	25.58	24.93
15	0.30	0.36	0.42	24.78	24.11	23.65	24.97	24.26	23.79
20	0.32	0.39	0.43	24.37	23.86	23.49	24.61	24.05	23.65
25	0.35	0.41	0.46	25.11	24.75	24.39	25.47	25.03	24.72
30	0.40	0.46	0.51	27.03	26.91	26.67	27.74	27.50	27.29
35	0.44	0.51	0.56	30.54	30.73	30.54	32.21	32.43	32.37
40	0.49	0.57	0.63	34.87	34.64	34.07	42.19	42.15	40.97
45	0.56	0.65	0.70	35.61	33.78	32.75	42.46	37.81	36.03
50	0.63	0.73	0.80	35.29	33.27	32.23	37.39	34.90	33.65
55	0.72	0.83	0.90	38.26	36.74	35.92	36.12	35.47	35.00
60	0.83	0.96	1.05	35.65	36.21	36.98	31.45	31.63	32.03
62	0.88	1.02	1.11	33.29	33.38	33.65	29.63	29.60	29.84
64	0.95	1.09	1.19	31.98	31.68	31.57	28.39	28.14	28.23
65	0.98	1.14	1.24	31.86	31.32	31.13	28.05	27.71	27.72
66	1.02	1.18	1.28	32.19	31.36	30.96	27.91	27.47	27.41
68	1.11	1.28	1.40	34.22	32.60	31.63	28.04	27.38	27.20
70	1.21	1.41	1.53	31.97	30.92	29.86	27.05	26.44	26.19
72	1.38	1.60	1.73	24.06	23.90	23.51	22.77	22.52	22.33
74	1.63	1.87	2.04	17.79	17.72	17.53	17.48	17.37	17.24
76	2.05	2.34	2.54	12.92	12.88	12.75	12.85	12.79	12.70
78	2.77	3.12	3.37	9.12	9.09	9.02	9.12	9.09	9.04
80	3.93	4.35	4.64	6.23	6.25	6.22	6.25	6.28	6.26
82	5.59	6.08	6.42	4.21	4.27	4.28	4.23	4.30	4.33
85	8.90	9.44	9.82	2.42	2.53	2.57	2.44	2.56	2.62
90	15.41	15.98	16.41	1.26	1.37	1.43	1.28	1.41	1.47
92	18.13	18.70	19.12	1.06	1.17	1.23	1.08	1.20	1.26
95	22.18	22.75	23.20	0.88	0.98	1.03	0.90	1.01	1.07
97	24.91	25.47	25.90	0.80	0.89	0.95	0.82	0.92	0.98
100	28.97	29.54	29.98	0.70	0.79	0.84	0.73	0.83	0.88
102.5	32.53	33.10	33.55	0.65	0.73	0.77	0.67	0.77	0.82
105	36.07	36.69	37.16	0.60	0.68	0.73	0.63	0.71	0.76
150	62.29	62.69	62.48	0.31	0.35	0.38	0.32	0.38	0.40
200	86.48	90.67	91.29	0.19	0.24	0.27	0.20	0.26	0.28
250	77.85	77.73	77.06	0.13	0.18	0.21	0.15	0.19	0.22
300	72.93	72.98	73.14	0.10	0.15	0.18	0.11	0.16	0.19
400	70.42	71.03	71.14	0.07	0.13	0.16	0.08	0.14	0.17
500	72.82	72.63	72.88	0.05	0.12	0.15	0.06	0.13	0.16
600	74.82	73.81	75.43	0.04	0.11	0.16	0.05	0.13	0.18
700	77.29	78.27	85.02	0.04	0.12	0.17	0.05	0.14	0.18
800	75.27	73.44	73.54	0.04	0.13	0.19	0.05	0.14	0.19
900	46.69	47.29	48.01	0.04	0.15	0.21	0.23	0.32	0.36
1000	57.74	58.10	58.29	0.04	0.15	0.22	0.05	0.17	0.22
1100	51.41	51.52	51.59	0.05	0.17	0.23	0.06	0.19	0.25
1200	47.89	48.65	49.19	0.09	0.20	0.27	0.05	0.19	0.26
1300	58.24	58.45	58.96	0.08	0.21	0.29	0.07	0.20	0.27
1400	62.23	62.17	61.70	0.07	0.21	0.30	0.08	0.22	0.29
1500	63.42	64.22	63.91	0.09	0.23	0.32	0.08	0.23	0.30
1800	63.39	63.10	62.54	0.11	0.27	0.37	0.09	0.25	0.33
2000	61.08	60.89	60.97	0.13	0.30	0.42	0.10	0.27	0.36
2200	58.39	58.30	58.29	0.11	0.30	0.44	0.13	0.30	0.40
2500	55.12	54.81	54.71	0.15	0.34	0.48	0.12	0.30	0.40
2800	51.51	51.56	51.42	0.17	0.37	0.51	0.15	0.35	0.45
3000	49.56	49.39	49.43	0.17	0.37	0.51	0.14	0.35	0.46
3300	46.52	46.46	46.46	0.16	0.39	0.52	0.10	0.31	0.45
3500	44.58	44.50	44.51	0.20	0.39	0.54	0.11	0.34	0.48
3700	42.44	42.38	42.33	0.18	0.41	0.57	0.10	0.35	0.49
3800	41.46	41.28	41.32	0.18	0.43	0.60	0.10	0.36	0.50
4000	39.38	39.11	39.14	0.34	0.74	0.96	0.09	0.36	0.54

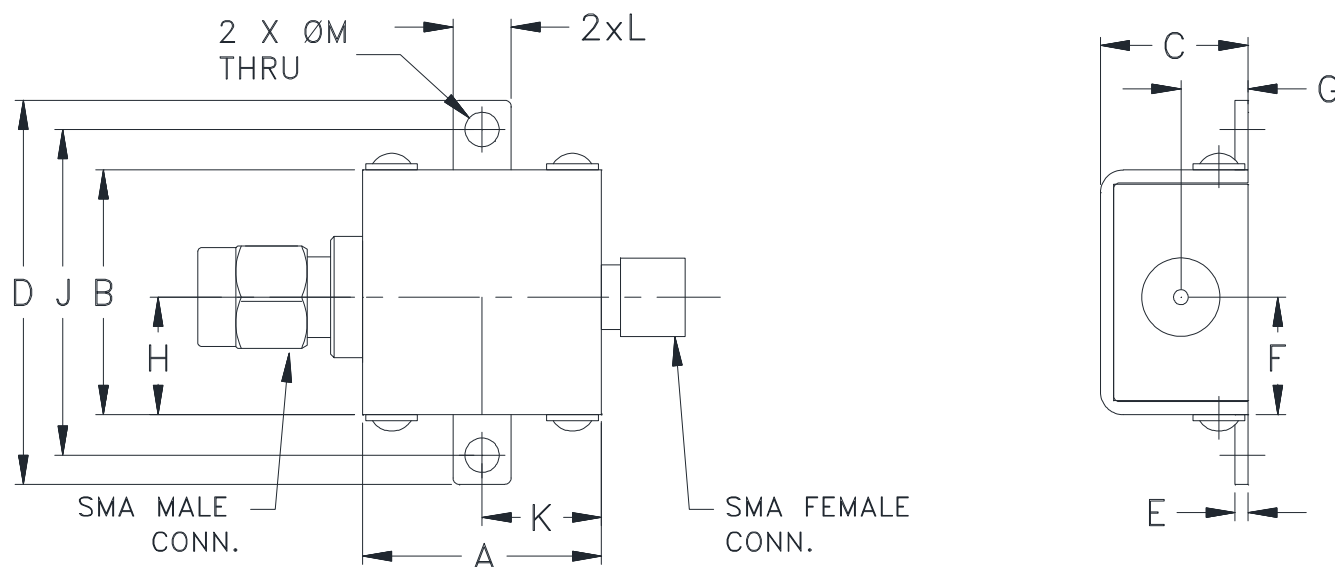
Typical Performance Data

FREQ.	GROUP DELAY		
(MHz)	(ns)		
	@-40°C	@+25°C	@+85°C
0.5	8.89	8.94	8.96
1	8.95	8.99	9.02
5	8.97	8.97	8.98
10	8.90	8.94	8.96
11	8.94	8.95	8.93
12	8.95	8.96	8.99
13	8.89	8.91	8.92
14	8.93	8.93	8.96
15	8.94	8.95	9.00
16	8.94	8.98	9.00
17	8.99	9.00	9.00
18	9.02	9.03	9.07
19	9.00	9.04	9.06
20	9.11	9.14	9.16
21	9.13	9.17	9.18
22	9.19	9.20	9.23
23	9.23	9.26	9.28
24	9.26	9.30	9.34
25	9.32	9.36	9.38
26	9.36	9.39	9.41
27	9.41	9.45	9.47
28	9.50	9.54	9.56
29	9.54	9.58	9.61
30	9.60	9.66	9.68
31	9.68	9.73	9.75
32	9.73	9.75	9.81
33	9.80	9.85	9.88
34	9.87	9.93	9.98
35	9.92	9.96	10.01
36	10.01	10.07	10.10
37	10.08	10.12	10.17
38	10.16	10.20	10.23
39	10.25	10.31	10.35
40	10.35	10.41	10.43
41	10.44	10.48	10.51
42	10.54	10.60	10.63
43	10.64	10.67	10.70
44	10.76	10.79	10.82
45	10.85	10.90	10.95
50	11.55	11.60	11.65
55	12.46	12.53	12.59
60	13.75	13.84	13.90
65	15.49	15.57	15.68
70	18.35	18.50	18.63

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.



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



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	Individual Model Data Sheet
Storage Temperature	-55° to 100° C Ambient Environment	Individual Model Data Sheet
Barometric Pressure	100,000 Feet	MIL-STD-202, Method 105, Condition D
Humidity	90% RH, 65°C Units may require bake-out after humidity to restore full performance.	MIL-STD-202, Method 103
Thermal Shock	-65° to 125°C, 5 cycles	MIL-STD-202, Method 107, Condition B
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	100g, 6ms sawtooth, 3 shocks each direction 3 axes (total 18)	MIL-STD-202, Method 213, Condition I