

Coaxial Bandpass Filter

ZABP-550-S+

50Ω 100 to 1000 MHz

The Big Deal

- High rejection
- Good VSWR
- Connectorized package



Generic photo used for illustration purposes only
CASE STYLE: UU1842

Product Overview

ZABP-550-S+ is a 50Ω bandpass filter with a rugged connectorized package covering the passband of 100 to 1000 MHz. The bandpass filter offers good matching within the passband and provides high rejection. This filter has miniature high Q capacitors and wire welded inductors for high reliability. It has repeatable performance across lots and consistent performance across temperature.

Key Features

Feature	Advantages
High rejection	ZABP-550-S+ has sharper transition and rejects spurious signals in the stopband.
Good VSWR	This filter maintains typical VSWR over passband frequency range making this filter easier to integrate into receiver and transmitter RF chains with less concerns for in band frequency ripple.
Connectorized package	Connectorized package is easy to interface with other devices and well suited for test setups.

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



Bandpass Filter

50Ω 100 to 1000 MHz

ZABP-550-S+



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Connectors Model
SMA-MF ZABP-550-S+

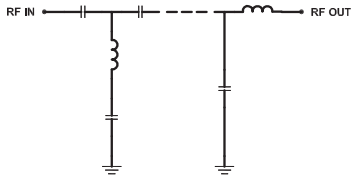
Features

- Sharp roll-off
- Ultra wide bandwidth
- Good VSWR
- Connectorized package

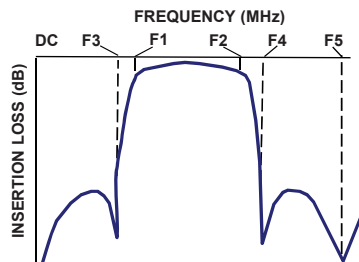
Applications

- Receiver front end applications
- Cellular network
- Civil aircraft communication radio
- Test equipment

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	Center Frequency	-	-	550	-	MHz
	Insertion Loss	F1-F2	-	1.1	2.2	dB
	VSWR	F1-F2	-	1.5	2.1	:1
Stop Band, Lower	Insertion Loss	DC-F3	40	50	-	dB
	VSWR	DC-F3	-	20	-	:1
Stop Band, Upper	Insertion Loss	F4-F5	30	40	-	dB
	VSWR	F4-F5	-	20	-	:1

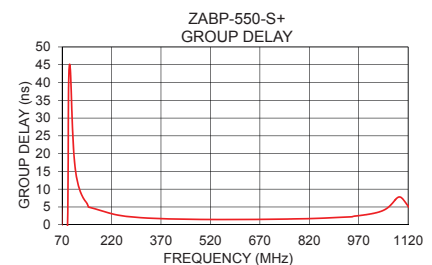
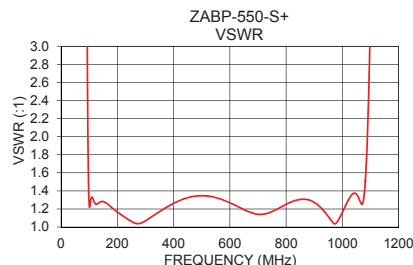
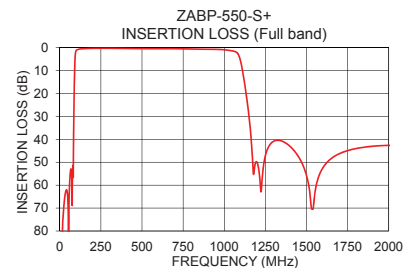
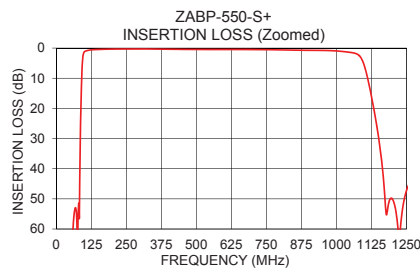
Maximum Ratings

Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power Input	1 W max.

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 (ns)
1	99.59	46461.03	100	31.04
25	69.03	2049.79	125	9.40
50	67.70	281.03	150	4.99
80	51.48	26.64	200	3.65
83	48.25	18.10	250	2.55
85	32.84	13.50	300	2.05
88	20.37	8.96	350	1.79
90	11.15	5.66	400	1.64
94	3.48	2.54	450	1.54
100	1.23	1.24	500	1.49
550	0.47	1.33	550	1.47
1000	0.95	1.16	600	1.48
1090	3.70	2.11	650	1.50
1110	9.66	5.46	700	1.55
1125	16.25	8.77	750	1.60
1133	20.18	10.25	800	1.69
1151	30.32	12.61	850	1.82
1200	50.19	16.16	900	2.02
1600	52.37	20.19	950	2.25
2000	42.64	21.45	1000	2.95



Notes

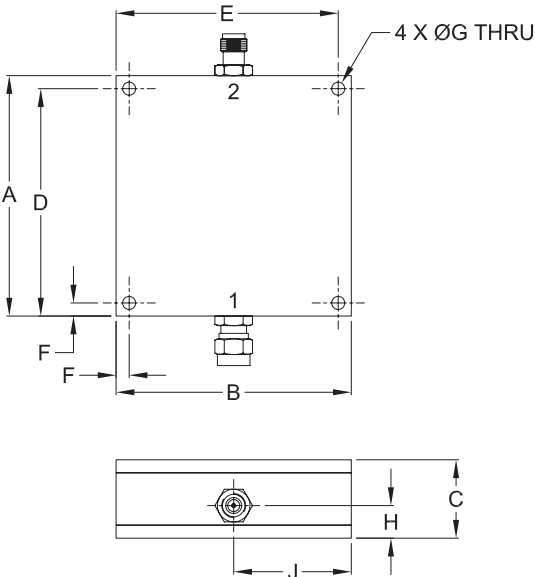
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Coaxial Connections

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

Outline Drawing



Outline Dimensions (inch mm)

A	B	C	D	E
2.300	2.250	.750	2.175	2.125
58.42	57.15	19.05	55.25	53.98
F	G	H	J	wt.
.125	.125	.312	1.125	grams
3.18	3.18	7.93	28.58	124

Note: Please refer to case style drawing for details

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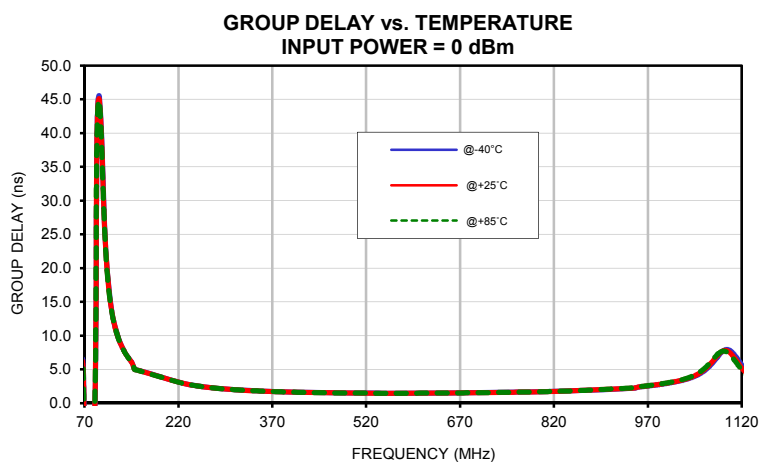
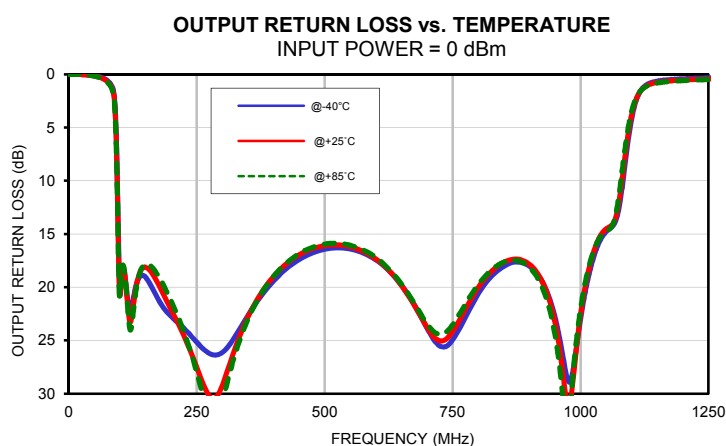
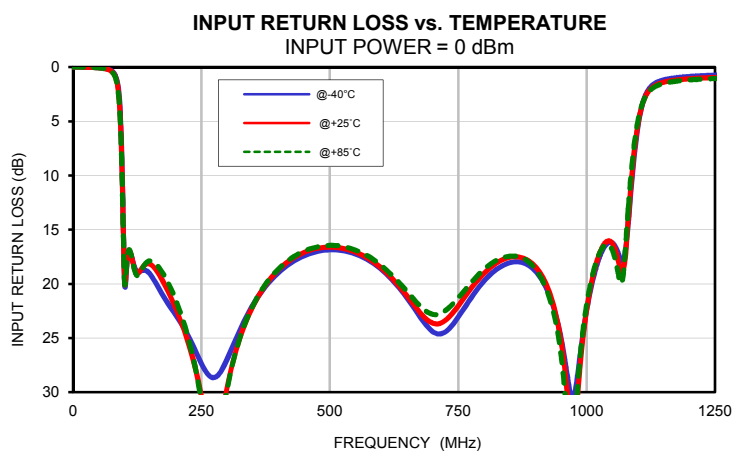
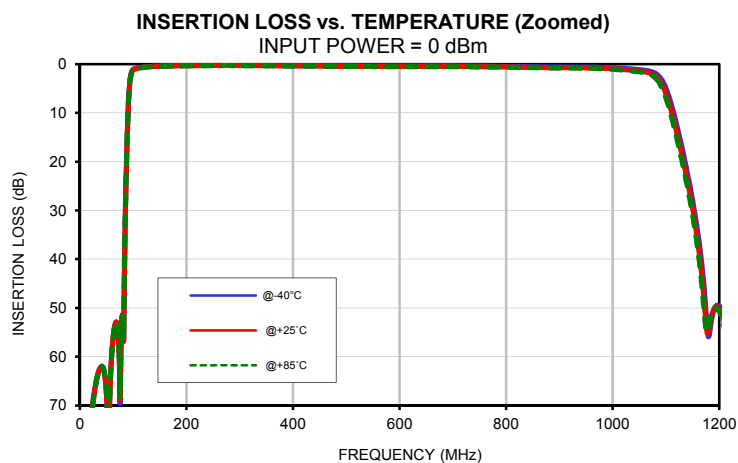
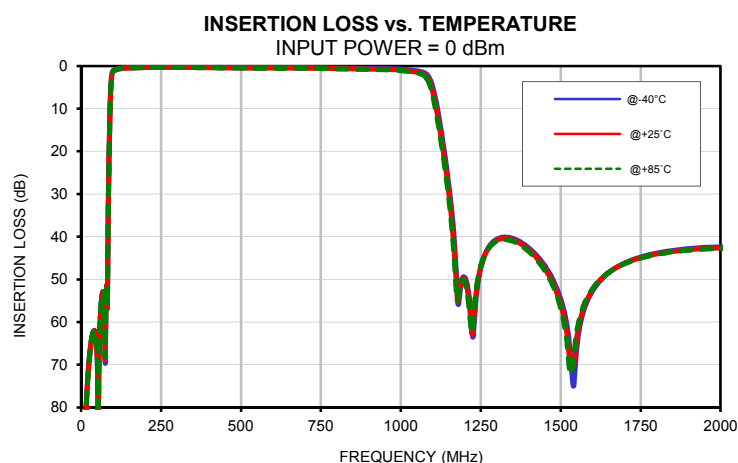
Typical Performance Data

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	100.93	99.59	97.70	0.00	0.00	0.00	0.00	0.00	0.00
5	110.50	104.19	105.75	0.00	0.00	0.00	0.00	0.00	0.00
7	98.39	102.15	101.91	0.00	0.00	0.00	0.00	0.00	0.00
9	97.23	94.68	95.73	0.00	0.00	0.00	0.01	0.01	0.01
11	89.60	89.70	88.74	0.00	0.00	0.00	0.01	0.01	0.01
15	81.12	81.58	80.97	0.00	0.00	0.00	0.01	0.01	0.01
16	79.78	80.38	79.55	0.00	0.00	0.00	0.01	0.01	0.01
18	76.72	76.19	76.61	0.00	0.00	0.00	0.01	0.02	0.02
20	74.16	74.11	74.05	0.01	0.01	0.01	0.01	0.02	0.02
30	65.57	65.41	65.54	0.01	0.01	0.02	0.03	0.04	0.05
40	62.11	62.10	62.00	0.02	0.03	0.03	0.07	0.09	0.10
50	67.42	67.70	67.51	0.05	0.06	0.07	0.13	0.16	0.18
60	59.23	59.04	58.89	0.10	0.12	0.13	0.24	0.28	0.31
70	53.26	53.31	53.36	0.22	0.25	0.27	0.42	0.49	0.54
80	51.39	51.48	51.57	0.57	0.65	0.70	0.79	0.91	0.99
82	56.87	56.57	55.95	0.73	0.84	0.91	0.91	1.05	1.14
84	40.41	39.42	38.61	0.97	1.11	1.20	1.07	1.23	1.34
85	33.53	32.84	32.24	1.12	1.29	1.40	1.16	1.34	1.46
86	27.91	27.37	26.88	1.31	1.51	1.65	1.28	1.48	1.61
87	23.02	22.58	22.17	1.55	1.79	1.95	1.43	1.65	1.80
88	18.65	18.29	17.95	1.84	2.13	2.33	1.64	1.90	2.07
89	14.76	14.47	14.19	2.20	2.56	2.80	1.96	2.26	2.47
90	11.36	11.15	10.94	2.68	3.10	3.39	2.44	2.80	3.06
91	8.52	8.40	8.25	3.32	3.80	4.14	3.18	3.62	3.94
92	6.27	6.23	6.15	4.18	4.70	5.07	4.25	4.77	5.16
93	4.59	4.63	4.61	5.29	5.83	6.23	5.67	6.28	6.74
94	3.40	3.48	3.51	6.69	7.22	7.62	7.44	8.13	8.66
95	2.57	2.69	2.74	8.35	8.87	9.26	9.53	10.30	10.89
100	1.09	1.23	1.30	19.34	19.36	19.51	20.68	20.79	20.89
250	0.25	0.29	0.31	27.35	30.33	30.90	25.16	27.46	27.93
550	0.38	0.47	0.51	17.24	17.07	16.89	16.41	16.20	16.07
750	0.40	0.52	0.58	23.06	22.03	21.28	24.95	24.15	23.53
1000	0.74	0.95	1.06	22.45	22.39	21.91	23.01	22.58	22.04
1050	1.16	1.44	1.60	16.22	16.26	16.89	14.77	14.52	14.73
1080	1.90	2.42	2.81	14.87	14.70	13.71	11.05	10.31	9.56
1090	2.91	3.70	4.34	9.43	8.93	8.21	7.30	6.58	5.95
1100	4.99	6.12	7.01	5.43	5.20	4.90	4.14	3.76	3.44
1120	12.43	13.93	15.05	2.10	2.26	2.32	1.38	1.42	1.42
1140	22.26	23.86	25.08	1.32	1.54	1.65	0.76	0.87	0.92
1150	27.99	29.68	31.04	1.17	1.39	1.50	0.65	0.77	0.82
1160	34.79	36.72	38.34	1.08	1.29	1.40	0.58	0.69	0.75
1180	55.87	54.73	53.67	0.95	1.16	1.26	0.49	0.60	0.66
1190	50.42	50.21	50.17	0.90	1.11	1.22	0.46	0.57	0.62
1200	49.64	50.19	50.72	0.86	1.08	1.18	0.43	0.54	0.59
1250	47.33	47.08	46.89	0.74	0.95	1.06	0.35	0.45	0.49
1300	40.60	40.85	41.04	0.68	0.89	1.00	0.30	0.40	0.44
1350	40.41	40.76	41.05	0.65	0.87	0.97	0.27	0.37	0.41
1400	42.63	43.09	43.45	0.64	0.86	0.97	0.26	0.35	0.39
1450	46.79	47.44	47.92	0.65	0.86	0.97	0.25	0.34	0.38
1500	54.62	55.78	56.73	0.66	0.86	0.97	0.25	0.34	0.38
1550	65.91	63.89	62.41	0.66	0.86	0.98	0.25	0.34	0.38
1600	52.59	52.37	52.15	0.66	0.86	0.98	0.26	0.34	0.38
1650	48.44	48.43	48.41	0.66	0.86	0.97	0.26	0.35	0.38
1700	46.16	46.28	46.30	0.65	0.85	0.97	0.27	0.35	0.39
1750	44.76	44.94	45.01	0.64	0.85	0.96	0.27	0.36	0.39
1800	43.86	44.06	44.14	0.63	0.84	0.95	0.28	0.36	0.40
1850	43.23	43.44	43.54	0.62	0.83	0.94	0.29	0.37	0.40
1900	42.81	43.03	43.16	0.62	0.82	0.93	0.29	0.37	0.41
1950	42.52	42.77	42.89	0.61	0.81	0.92	0.30	0.38	0.41
2000	42.41	42.64	42.77	0.61	0.81	0.92	0.30	0.39	0.42

Typical Performance Data

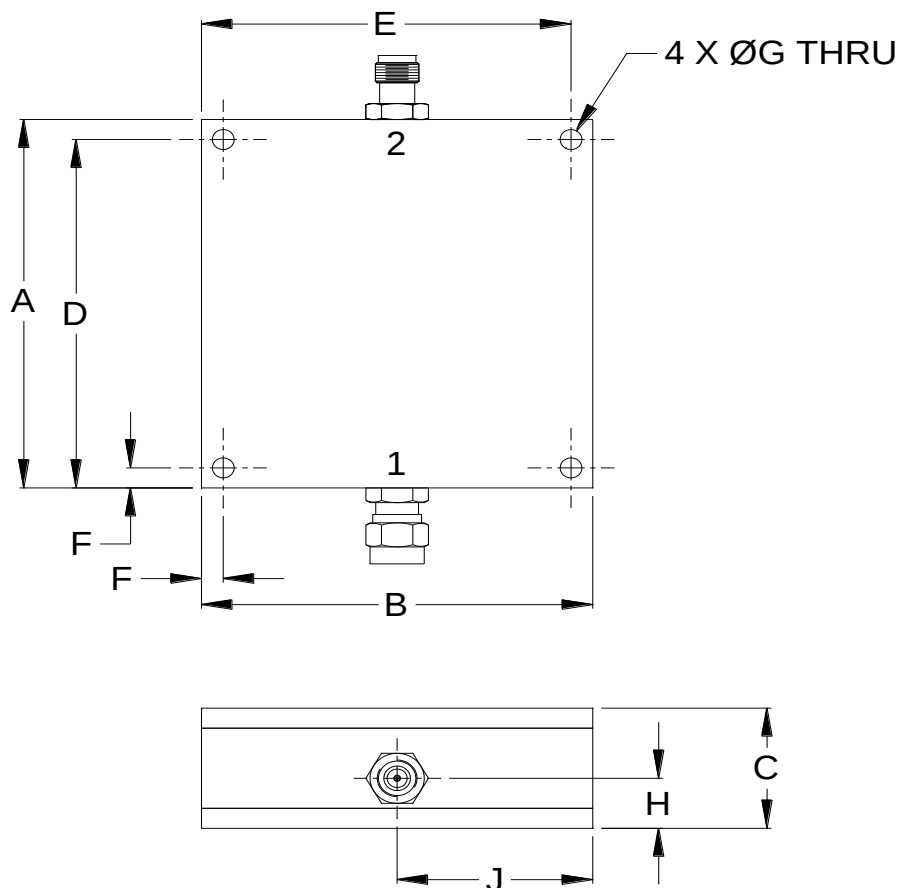
FREQ.	GROUP DELAY		
(MHz)	(ns)		
	@-40°C	@+25°C	@+85°C
100	31.58	31.04	30.64
115	12.87	12.79	12.73
130	8.32	8.29	8.27
145	6.12	6.09	6.08
160	4.75	4.73	4.72
175	4.35	4.33	4.32
190	3.94	3.92	3.91
205	3.52	3.51	3.50
220	3.11	3.10	3.10
235	2.79	2.79	2.78
250	2.55	2.55	2.54
265	2.36	2.36	2.36
280	2.21	2.21	2.21
295	2.09	2.09	2.09
310	1.99	1.99	1.98
325	1.91	1.90	1.90
340	1.83	1.83	1.83
355	1.77	1.77	1.77
370	1.72	1.72	1.72
385	1.68	1.67	1.67
400	1.64	1.64	1.64
415	1.61	1.60	1.60
430	1.58	1.58	1.57
445	1.56	1.55	1.55
460	1.54	1.53	1.53
475	1.52	1.51	1.51
490	1.51	1.50	1.50
505	1.49	1.49	1.49
520	1.49	1.48	1.48
535	1.48	1.48	1.47
550	1.48	1.47	1.47
565	1.47	1.47	1.47
580	1.47	1.47	1.47
595	1.48	1.48	1.48
610	1.48	1.48	1.48
625	1.49	1.49	1.49
640	1.50	1.50	1.50
655	1.51	1.51	1.51
670	1.52	1.52	1.52
685	1.53	1.53	1.53
700	1.55	1.55	1.55
715	1.56	1.56	1.56
730	1.58	1.58	1.58
745	1.60	1.60	1.60
760	1.62	1.62	1.62
775	1.64	1.64	1.64
790	1.67	1.67	1.67
805	1.70	1.70	1.70
820	1.73	1.73	1.74
835	1.77	1.77	1.78
850	1.81	1.82	1.82
865	1.86	1.87	1.88
880	1.92	1.93	1.94
895	1.99	2.00	2.01
900	2.01	2.02	2.04
925	2.13	2.14	2.16
950	2.23	2.25	2.26
975	2.59	2.62	2.64
1000	2.91	2.95	2.98

Typical Performance Curves



Outline Dimensions

UU1842



CASE#	A	B	C	D	E	F	G	H	J	WT.GRAMS
UU1842	2.300 (58.42)	2.250 (57.15)	0.750 (19.05)	2.175 (55.25)	2.125 (53.98)	0.125 (3.18)	0.125 (3.18)	0.312 (7.93)	1.125 (28.58)	124

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

Notes:

- Case material: Aluminum alloy.
- Case finish:

For RoHS Case Styles: Clear chemical conversion coating, non-chrome or trivalent chrome based.



P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661 For detailed performance specs & shopping online see Mini-Circuits web site



The Design Engineers Search Engine Provides ACTUAL Data Instantly From MINI-CIRCUITS At: www.minicircuits.com

RF/IF MICROWAVE COMPONENTS



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