Coaxial

High Pass Filter

ZFHP-3800FF-S+

50Ω 3800 to 6000 MHz

Generic photo used for illustration purposes only

CASE STYLE: H16

The Big Deal

- Low insertion loss
- Good rejection
- Connectorized package

Product Overview

ZFHP-3800FF-S+ is a High pass filter in a fabricated using connectorized package. This filter offers low insertion loss and good rejection. This will find its applications in transmitter and receivers.

Key Features

Feature	Advantages
Low insertion loss	Can be used in high performance applications.
Good rejection	This enables the filter to attenuate spurious signals and reject harmonics till 3GHz.
Connectorized package	The connectorized package is easy to interface with other devices and well suited for test setups.

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CASE STYLE: H16

Connectors	Model
SMA-F / F	ZFHP-3800FF-S+
BRACKET (OPTION "B")	

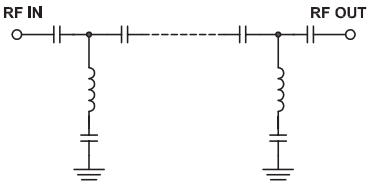
Features

- Wide band, 3800 MHz to 6000 MHz
- Low insertion loss
- Connectorized package

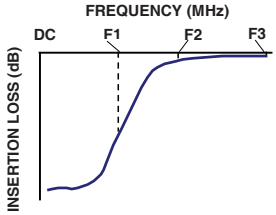
Applications

- Sub-harmonic rejection
- Transmitter \ Receiver
- Lab use

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

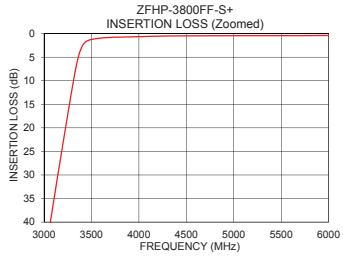
Parameter		F#	Frequency (MHz)	Min.	Typ.	Max.	Unit
Stop Band	Rejection Loss	DC-F1	10-3170	20	27.3	-	dB
	VSWR	DC-F1	10-3170	-	20	-	:1
Pass Band	Insertion Loss	F2-F3	3800-6000	-	1.0	2.0	dB
	VSWR	F2-F3	3800-6000	-	1.5	2.5	:1

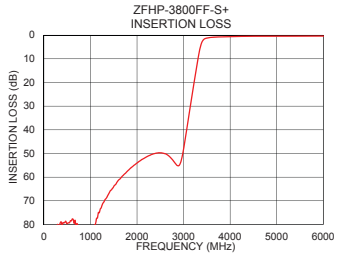
Maximum Ratings	
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power Input	2W max.

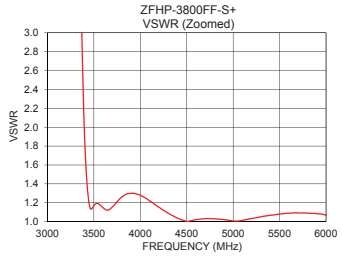
Permanent damage may occur if any of these limits are exceeded.

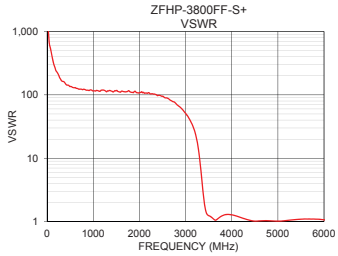
Typical Performance Data at 25°C

Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)
1	102.08	6056.68
10	98.21	2112.79
150	85.50	298.21
250	82.76	203.39
750	80.92	126.92
2010	53.87	118.87
2510	49.74	102.23
3000	48.14	51.58
3100	35.70	38.99
3140	30.68	33.47
3150	29.43	32.25
3170	26.95	29.42
3225	20.17	21.00
3380	3.68	2.57
3450	1.58	1.18
3500	1.23	1.17
3750	0.76	1.21
3800	0.74	1.26
5000	0.43	1.01
6000	0.40	1.07









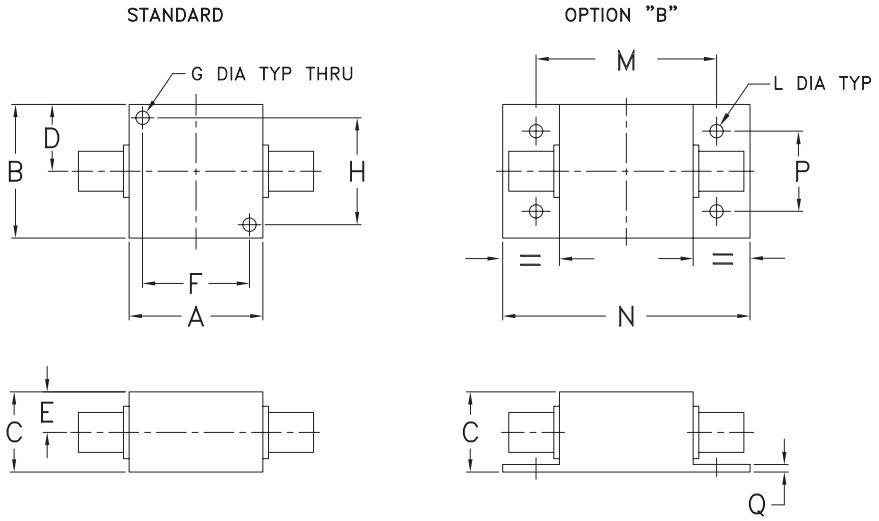
Notes

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

Coaxial Connections

PORT - 1	SMA-Female
PORT - 2	SMA-Female

Outline Drawing



Outline Dimensions (inch / mm)

A	B	C	D	E	F	G	H
1.25	1.25	.75	.63	.38	1.000	.125	1.000
31.75	31.75	19.05	16.00	9.65	25.40	3.18	25.40

J	K	L	M	N	P	Q	wt
--	--	.125	1.688	2.18	.750	.06	grams
--	--	3.18	42.88	55.37	19.05	1.52	70.0

Note: Please refer to case style drawing for details

Coaxial High Pass Filter ZFHP-3800FF-S+

Typical Performance Data

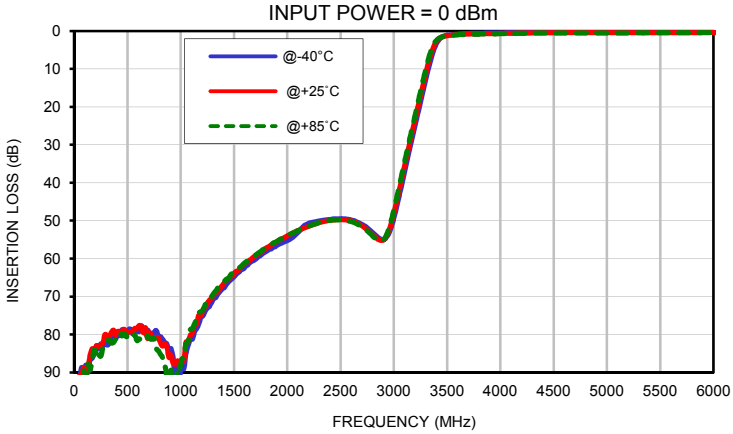
FREQ. (MHz)	INSERTION LOSS (dB)			INPUT RETURN LOSS (dB)			OUTPUT RETURN LOSS (dB)		
	@-40°C	@+25°C	@+85°C	@-40°C	@+25°C	@+85°C	@-40°C	@+25°C	@+85°C
10	99.24	98.21	112.94	0.01	0.01	0.01	0.01	0.01	0.02
50	93.06	90.94	102.11	0.03	0.02	0.03	0.02	0.03	0.03
110	88.09	90.51	91.12	0.04	0.04	0.04	0.04	0.04	0.05
210	82.98	82.99	86.29	0.07	0.07	0.07	0.07	0.08	0.08
310	82.80	80.58	81.69	0.10	0.10	0.10	0.09	0.10	0.10
410	79.78	79.21	80.45	0.11	0.12	0.12	0.10	0.12	0.12
510	78.77	79.46	80.03	0.11	0.12	0.13	0.10	0.13	0.13
610	79.24	77.65	81.20	0.11	0.13	0.14	0.11	0.13	0.14
710	79.92	79.60	81.11	0.12	0.14	0.15	0.11	0.14	0.15
810	80.57	82.21	85.20	0.12	0.14	0.15	0.11	0.14	0.15
910	83.78	85.40	89.56	0.12	0.14	0.15	0.11	0.15	0.16
1010	88.12	86.56	86.73	0.11	0.14	0.15	0.11	0.15	0.16
1110	81.24	79.63	78.49	0.11	0.14	0.15	0.11	0.15	0.16
1210	75.05	73.48	73.51	0.11	0.14	0.15	0.10	0.15	0.16
1310	70.54	69.54	69.23	0.11	0.14	0.15	0.11	0.15	0.16
1410	67.66	66.31	66.01	0.11	0.15	0.16	0.11	0.15	0.17
1510	64.48	63.60	63.14	0.10	0.14	0.15	0.10	0.15	0.17
1610	62.01	61.11	60.93	0.10	0.14	0.15	0.09	0.15	0.17
1710	59.96	59.14	58.96	0.10	0.15	0.16	0.10	0.15	0.17
1810	57.97	57.14	57.06	0.09	0.14	0.16	0.10	0.16	0.18
1910	56.42	55.43	55.33	0.09	0.14	0.16	0.09	0.15	0.19
2010	55.12	53.87	53.79	0.09	0.15	0.16	0.09	0.16	0.19
2110	52.90	52.51	52.51	0.09	0.15	0.17	0.09	0.16	0.20
2210	50.61	51.38	51.36	0.09	0.15	0.17	0.08	0.16	0.21
2310	50.06	50.43	50.42	0.09	0.15	0.18	0.08	0.17	0.22
2410	49.67	49.87	49.91	0.09	0.16	0.19	0.09	0.18	0.23
2510	49.48	49.74	49.78	0.10	0.17	0.21	0.09	0.18	0.24
2610	49.90	50.13	50.30	0.11	0.18	0.23	0.10	0.20	0.25
2710	51.12	51.52	51.78	0.13	0.21	0.25	0.12	0.22	0.27
2810	53.33	53.85	54.29	0.15	0.24	0.28	0.14	0.25	0.31
2910	54.98	54.91	54.79	0.19	0.28	0.33	0.17	0.28	0.35
3010	48.24	46.97	46.06	0.24	0.34	0.40	0.23	0.35	0.41
3140	32.17	30.68	29.62	0.40	0.52	0.59	0.36	0.50	0.59
3170	28.46	26.95	25.88	0.45	0.59	0.67	0.41	0.57	0.66
3225	21.72	20.17	19.07	0.64	0.83	0.95	0.58	0.77	0.92
3310	11.52	9.96	8.93	1.55	2.11	2.58	1.38	1.91	2.44
3390	3.87	3.15	2.80	6.07	8.53	10.58	5.44	7.48	9.18
3610	0.80	0.91	0.98	23.04	23.82	24.18	24.89	27.55	29.25
3710	0.65	0.78	0.86	25.25	22.28	20.57	29.50	24.65	22.71
3800	0.59	0.74	0.82	21.72	18.79	17.60	22.53	19.38	18.31
3910	0.54	0.69	0.77	19.93	17.68	16.84	20.02	17.82	17.07
4010	0.49	0.63	0.70	20.13	18.37	17.74	20.07	18.40	17.85
4110	0.45	0.58	0.64	21.46	20.32	19.90	21.24	20.16	19.87
4210	0.42	0.53	0.59	23.14	23.32	23.32	22.89	23.16	23.22
4310	0.39	0.50	0.56	25.45	27.92	29.26	25.15	27.56	29.12
4410	0.37	0.48	0.54	27.57	35.80	46.02	27.07	34.18	38.06
4510	0.36	0.47	0.53	28.46	66.54	35.24	28.02	42.98	35.55
4610	0.34	0.46	0.52	28.85	39.39	29.72	28.35	38.22	30.14
4710	0.33	0.45	0.52	28.94	35.83	27.35	28.26	36.05	27.83
4810	0.33	0.45	0.51	27.69	36.89	26.92	27.10	37.14	27.30
4910	0.32	0.44	0.50	26.28	40.26	27.23	26.03	39.55	27.41
5440	0.31	0.42	0.48	22.87	29.23	44.10	22.23	28.02	38.58
5460	0.31	0.42	0.48	22.94	28.99	43.98	22.33	27.94	38.35
5480	0.31	0.42	0.48	22.92	28.53	41.55	22.27	27.59	38.04
5500	0.30	0.42	0.48	22.95	28.16	39.62	22.27	27.30	37.57
5520	0.31	0.42	0.48	23.05	28.19	39.30	22.38	27.34	37.06
5540	0.31	0.42	0.48	22.88	27.84	38.17	22.25	27.12	36.57
5560	0.31	0.42	0.48	22.84	27.65	37.58	22.20	26.90	36.18
5820	0.29	0.42	0.48	23.14	27.41	32.72	23.08	27.25	33.24
6000	0.27	0.40	0.46	26.17	29.68	35.52	26.29	29.99	36.52

Typical Performance Data

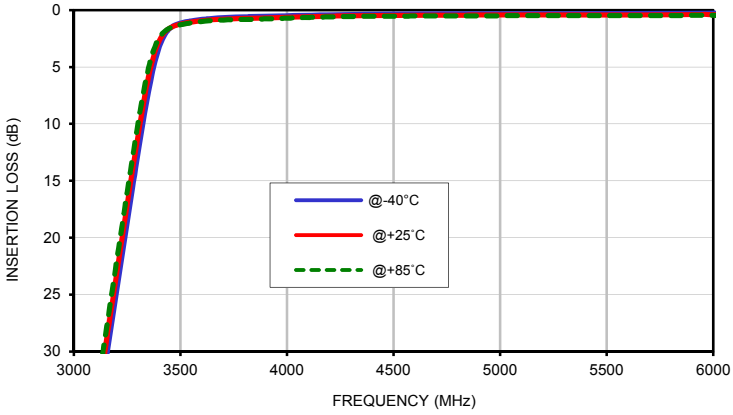
FREQ. (MHz)	GROUP DELAY (nsec)		
	@-40°C	@+25°C	@+85°C
3800	0.86	0.83	0.81
3850	0.81	0.78	0.76
3900	0.77	0.74	0.72
3950	0.73	0.70	0.69
4000	0.70	0.68	0.66
4050	0.67	0.65	0.64
4100	0.65	0.63	0.62
4150	0.63	0.61	0.60
4200	0.61	0.59	0.58
4250	0.60	0.58	0.57
4300	0.58	0.56	0.55
4350	0.57	0.55	0.54
4400	0.55	0.54	0.53
4450	0.54	0.52	0.52
4500	0.53	0.51	0.50
4550	0.52	0.50	0.49
4600	0.51	0.49	0.49
4650	0.50	0.49	0.48
4700	0.49	0.48	0.47
4750	0.49	0.47	0.46
4800	0.48	0.46	0.46
4850	0.47	0.46	0.45
4900	0.47	0.45	0.44
4950	0.46	0.45	0.44
5000	0.46	0.44	0.43
5080	0.45	0.44	0.43
5100	0.45	0.43	0.42
5120	0.45	0.43	0.42
5200	0.44	0.43	0.42
5280	0.43	0.42	0.41
5300	0.43	0.42	0.41
5380	0.43	0.41	0.41
5400	0.43	0.41	0.40
5480	0.42	0.41	0.40
5500	0.42	0.40	0.40
5580	0.42	0.40	0.39
5600	0.41	0.40	0.39
5680	0.41	0.40	0.39
5700	0.41	0.40	0.39
5780	0.41	0.39	0.38
6000	0.40	0.39	0.38

Typical Performance Curves

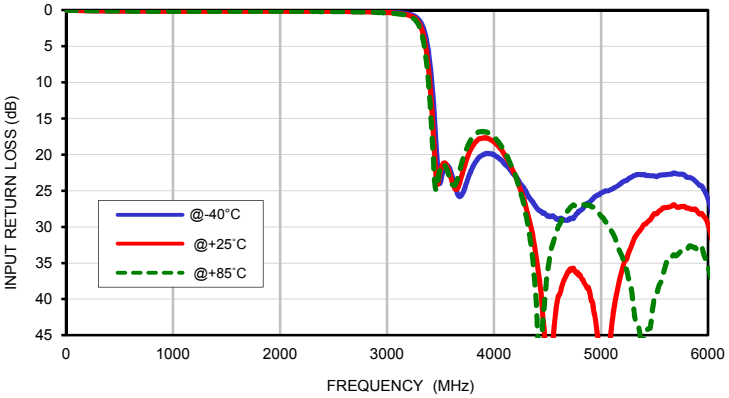
INSERTION LOSS vs. TEMPERATURE
INPUT POWER = 0 dBm



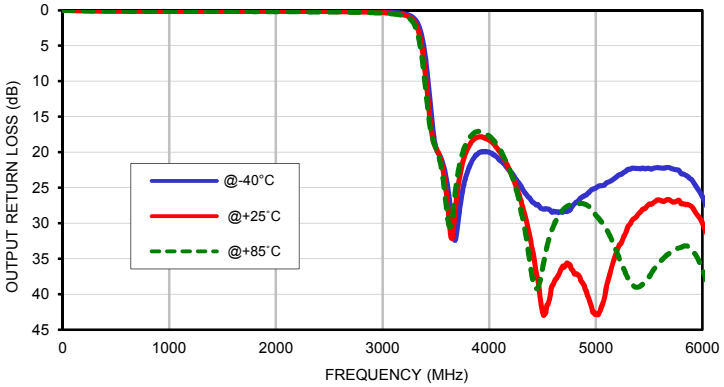
INSERTION LOSS vs. TEMPERATURE (Zoomed)
INPUT POWER = 0 dBm



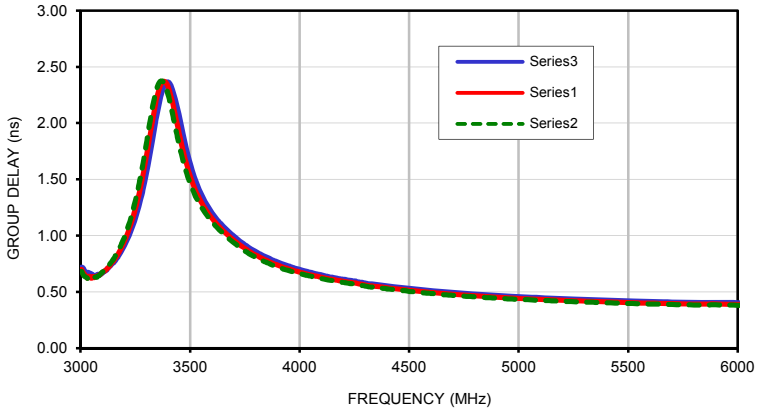
INPUT RETURN LOSS vs. TEMPERATURE
INPUT POWER = 0 dBm



OUTPUT RETURN LOSS vs. TEMPERATURE
INPUT POWER = 0 dBm



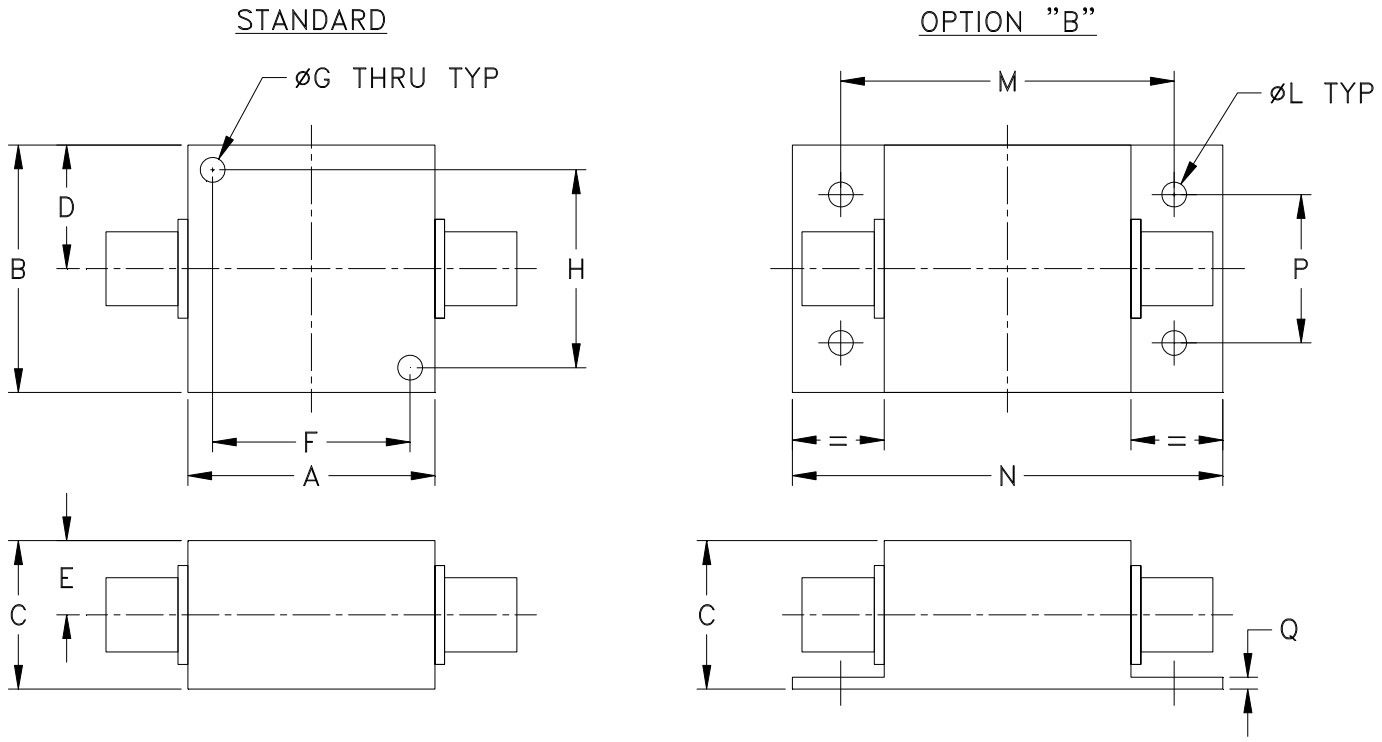
GROUP DELAY vs. TEMPERATURE
INPUT POWER = 0 dBm



Case Style H

Outline Dimensions

H16



CASE#	A	B	C	D	E	F	G	H	J	K	L	M	N
H16	1.25 (31.75)	1.25 (31.75)	.750 (19.05)	.63 (16.00)	.38 (9.65)	1.000 (25.40)	.125 (3.18)	1.000 (25.40)	--	--	.125 (3.18)	1.688 (42.88)	2.18 (55.37)

CASE#	P	Q	WT.GRAMS
H16	.750 (19.05)	.06 (1.52)	70

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

Notes:

1. Case material: Aluminum alloy.
2. Case finish:
   For RoHS Case Styles: Clear chemical conversion coating, non-chrome or trivalent chrome based.
3. Mounting bracket available on request. Add suffix B to part number.
4. Bracket version, option B, dimension "C" changes from .75 to .94 inches when connectors are type N.
5. Refer to the individual model data sheet for the type of connectors available.

Mini-Circuits

Environmental Specifications **ENV28T5**

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