

**ELECTRICAL SPECIFICATIONS<sup>1</sup>**

Parameter	Limit (min.)	Limit (max.)	Unit	Condition
Nominal Frequency (Fo)	10.230 000		MHz	
Initial Accuracy at +25°C	-0.1	+0.1	PPM	At EFC = +5.05Vdc
Supply Voltage (Oscillator and Oven)	+14.25	+15.75	Vdc	+15V nominal
Input Power				
Warm-up (turn-on)	-----	5.0	W	< 10 minutes to current cut-back
Steady State @ -30°C	-----	2.50	W	
Steady State @ +25°C	-----	1.50	W	
Switch-on Temperature	-30	-----	°C	Spec compliant after 15 minutes
RF Output Power	+9.0	-----	dBm	50 ohm load
Harmonics	-----	-25	dBc	1 kHz to 1 MHz
Spurious	-----	-90	dBc	
EFC Tuning Range	±0.15	-----	PPM	Positive
EFC Control Voltage Range	+0.1	+10.0	Vdc	
EFC Slope	-----	-----	-----	

**FREQUENCY STABILITY<sup>1</sup>**

Parameter	Limit (max.)	Unit	Condition
Frequency vs. Temperature	±5.0e-8	ΔF/F	-30°C to +70°C under vacuum
Frequency vs. Voltage	±1.0e-9	ΔF/F	For a 5% change in supply voltage
Frequency Retrace @ +25°C (24 hours off) <sup>3</sup>	±1.0e-8	ΔF/F	One hour after turn-on
Frequency vs. Pressure <sup>3</sup>	±2.0e-8	ΔF/F	1 ATM to 10 <sup>-5</sup> TORR
Aging			
Daily	±5.0e-10	ΔF/F	At time of shipment
First Year	±5.0e-8	ΔF/F	Log fit IAW MIL-PRF-55310, Log projection
Yearly after First Year	±2.0e-8	ΔF/F	Log fit IAW MIL-PRF-55310, Log projection
Phase Noise (Static)			
1 Hz	-95	dBc/Hz	
10 Hz	-125	dBc/Hz	
100 Hz	-140	dBc/Hz	
1 kHz	-150	dBc/Hz	
10 kHz	-155	dBc/Hz	
100 kHz	-155	dBc/Hz	
Short Term Stability (Static)			
τ = 1.0 sec	5.0e-12	ΔF/F	100% test item 25°C in vacuum
Vibration Sensitivity <sup>3</sup>	±1.5e-9/g	ΔF/F	1g sine vibration at 100Hz

**ENVIRONMENTAL CONDITIONS**

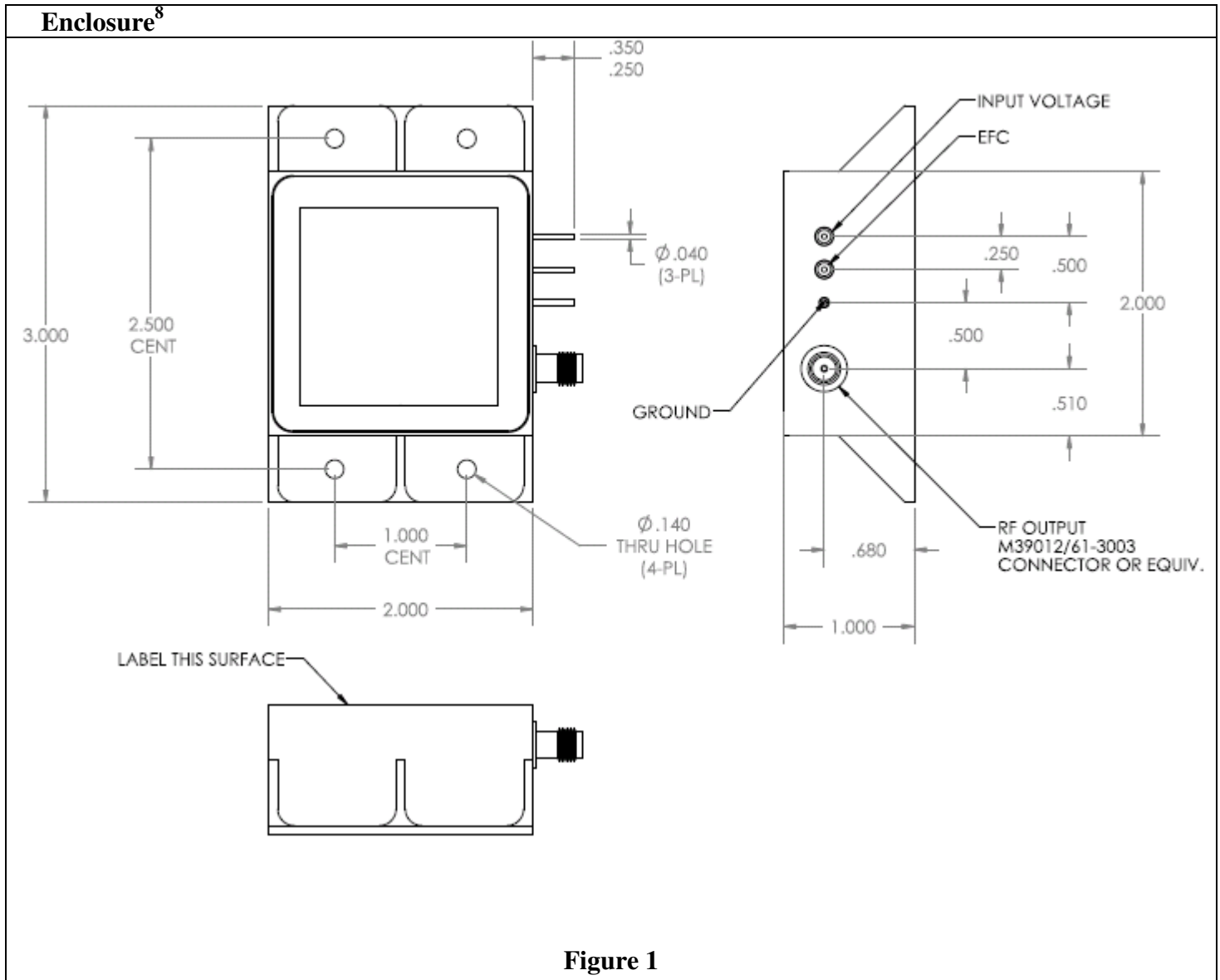
Parameter	Limit (min.)	Limit (max.)	Unit	Condition	
Operating Temperature Range (Acceptance)	-30.0	+70.0	°C		
Storage Temperature Range	-40.0	+85.0	°C		
Radiation <sup>2</sup>	Designed to meet 100krads (Si) total dose; latch-up immune				
Non-Operational Stress (Survival)					
Mechanical Shock <sup>4,5</sup>	MIL-STD-202, Method 213, Table I, Test Cond Letter E				
Sine Vibration <sup>4,5</sup> IAW MIL-STD-202, Method 204	AXIS	Frequency (Hz)	LEVEL (g-pk)	DURATION (Oct/min)	SWEEP RATE
	All	5 to 19	±10.3 mm	2	1 up
		19 to 80	15g		
		80 to 100	8g		
Random Vibration <sup>4,5</sup> IAW MIL-STD-202, Method 214	AXIS	Frequency (Hz)	LEVEL	ACCELERATION (g RMS)	DURATION
	All	20 to 100	+6 dB/oct	30	2 minutes per axis
		100 to 1000	0.63 g <sup>2</sup> /Hz		
		1000 to 2000	-6 dB/oct		

**MECHANICAL SPECIFICATIONS**

Parameter	Limit (max.)	Unit	Condition
Dimensions	-----	-----	See Figure 1
Weight	4.0	ounces	
Material	6061-T6 Aluminum, Gold Plated		
Finish	Gold Plating per MIL-G-45204, 50u" min. over Electrodeposited Nickel in accordance with QQ-N-290 Class I, Grade E.		

**ADDITIONAL INFORMATION<sup>6,7</sup>**

Item	Description / Requirement
Element Evaluation	IAW MIL-PRF-55310, Class S for microelectronics (FMs only)
Class S Screening	IAW MIL-PRF-55310 (100% FMs only)
Group A Testing	IAW MIL-PRF-55310 (100% FMs only)
Group B Testing	IAW MIL-PRF-55310, Paragraph 4.7.1.5.2, Aging (100% FMs only)



**Figure 1**

**NOTES:**

- <sup>1</sup> All requirements apply over the operating temperature range unless otherwise specified.
- <sup>2</sup> Radiation based upon components inherently tolerant to 100krads total dose. Met by design, not tested. Parts list provided upon request.
- <sup>3</sup> Met by design, not tested.
- <sup>4</sup> Met by design, not tested.
- <sup>5</sup> Met by design, not tested.
- <sup>6</sup> Flight models are manufactured with swept quartz and Class S die and undergo MIL-PRF-55310 Class S Screening and Groups A&B QCI; engineering models may be manufactured with cultured quartz and commercial grade components and are not screened (electrical verification only).
- <sup>7</sup> Crystal will utilize 4-point mount.
- <sup>8</sup> Vent hole shall be left open after seal. Do not leak test the unit.