

When required by the customer, Xsis Oscillators can be subjected to the following screening tests on a 100% basis. PDA for Burn-in & Non-Destruct Bond Pull are in accordance with the requirements of MIL-PRF-55310 for "Class S" products.

HI-REL SCREENING (Similar to MIL-PRF-55310, "Class S" Screening)	
Non-Destruct Bond Pull	MIL-STD-883, Method 2023 (PDA=2% or 1 wire whichever is greater)
Internal Visual	MIL-STD-883, Method 2017, Class "S", Except Class "B" for Elements
Stabilization Bake	MIL-STD-883, Method 1008, Cond. C, 48 Hours Minimum
Thermal Shock	MIL-STD-883, Method 1011, Cond. A
Temperature Cycling	MIL-STD-883, Method 1010, Cond. C
Constant Acceleration	MIL-STD-883, Method 2001, Cond. A, Y ₁ only, (5000 G)
Seal - fine & gross leak	MIL-STD-883, Method 1014
PIND	MIL-STD-883, Method 2020, Cond. A
Radiographic Insp.	MIL-STD-883, Method 2012
Electrical Tests	MIL-PRF-55310, Class B
Burn-in	+125 °C, Nominal Supply Voltage & Burn-in Load, 320 Hours Min.
Electrical Tests	MIL-PRF-55310, Class B

Updated Nov 10, 2019

When 883B Screening is specified, Xsis Oscillators are subjected to the following tests on a 100% basis. PDA for Burn-in is in accordance with the requirements of MIL-PRF-55310 for "Class B" products.

883B SCREENING (Same as MIL-PRF-55310, Class B Screening)	
Internal Visual	MIL-STD-883, Method 2017, Class B
Stabilization Bake	MIL-STD-883, Method 1008, Cond. C, 24 Hours Minimum
Temperature Cycling	MIL-STD-883, Method 1010, Cond. B
Constant Acceleration	MIL-STD-883, Method 2001, Cond. A, Y ₁ only,(5000 G)
Seal (fine & gross leak)	MIL-STD-883, Method 1014
Electrical Tests	MIL-PRF-55310, Class B
Burn-in	+125 °C, Nominal Supply Voltage & Burn-in Load, 160 Hours Min.
Electrical Tests	MIL-PRF-55310, Class B

Updated Nov 10, 2019



High Reliability Hybrid Microcircuit
Crystal Oscillators & Crystal Units



Environmental Specifications are derived from MIL-PRF-55310 and are generally performed on a sampling basis for qualification to insure that all units in production meet or exceed the required specifications. This sampling method, coupled with Workmanship Standards to MIL-PRF-38534, a Product Assurance Plan in accordance with MIL-STD-790, and a Quality System certified to AS9100/ISO9001, insures a consistently superior product.

STANDARD ENVIRONMENTAL SPECIFICATIONS

VIBRATION	.06" DA, 30G Peak, 10-2000 Hz, MIL-STD-202, Method 204, Cond. G
SHOCK	1/2 Sine, 1500G Peak, MIL-STD-883, Method 2002, Cond. B
THERMAL SHOCK	MIL-STD-202, Method 107, Cond. B
ALTITUDE	MIL-STD-202, Method 105, Cond. C
MOISTURE RESISTANCE	MIL-STD-202, Method 106, Vibration Sub cycle Omitted
SALT SPRAY	MIL-STD-883, Method 1009, Cond. A
CONSTANT ACCELERATION	MIL-STD-883, Method 2001, 5000G
SOLDERABILITY	MIL-STD-202, Method 208
RESISTANCE TO SOLDERING HEAT	MIL-STD-202, Method 210, Cond. C or B as Applicable
RESISTANCE TO SOLVENTS	MIL-STD-202, Method 215
INTERNAL WATER VAPOR CONTENT	MIL-STD-883, Method 1018

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CRYSTAL OSCILLATOR TERMINOLOGY

Nominal Frequency	Customer specified frequency
Frequency Accuracy @ +25 °C (Calibration Tolerance)	Difference between the actual output frequency at +25 °C and the specified Nominal Frequency.
Frequency Stability Vs. Temperature	Maximum frequency deviation over a specified temperature range with respect to the frequency measured at +25 °C \pm 1 °C. This can be expressed as a percentage, PPM, or in scientific notation, e.g. \pm 0.005%, or \pm 50PPM, or \pm 50(10) ⁻⁶ .
Operating Temperature Range	Operating temperature range over which the frequency stability and other electrical parameters must remain within their specified limits.
Aging	Long term frequency changes which are due primarily to variations in the crystal and other oscillator components.
Input Current	Current drawn by the device from the power source at a specified supply voltage.
Rise Time (TTL)	Time required for the output voltage to rise from 0.6 VDC to 2.2 VDC.
Rise Time (CMOS & ECL)	Time required for the output voltage to rise from 10% to 90% of the peak to peak output.
Fall Time (TTL)	Time required for the output voltage to drop from 2.2 VDC to 0.6 VDC.
Fall Time (CMOS & ECL)	Time required for the output voltage to drop from 90% to 10% of the peak to peak output amplitude.
Symmetry (TTL)	Percentage of time the output voltage is above the TTL threshold (1.4VDC Level).
Symmetry (CMOS & ECL)	Percentage of time the output voltage is above the 50% of the peak to peak output amplitude
Startup Time	Time interval for the oscillator output to reach continuous waveform to within 90 percent of the final amplitude following application of power.
Phase Jitter	Undesired deviation of a signal timing or phase from its true position. Phase Jitter can be expressed as rms or peak to peak displacement.

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