

RELIABILITY TEST PROCEDURES FOR ECS-327MVATX Series



NO.	TEST NAME	TEST PROCEDURES	REQUIREMENTS
1	SHOCK	Drop 3 times from the height of 100cm onto hard wooden board.	Frequency Drift ± 5 PPM Max.
2	VIBRATION	Vibration Frequency: 10 to 55Hz, 1.5mm, full wave Cycle: 2 min. Direction: X.Y.Z. Time: 2 hours in each direction	Frequency Drift ± 5 PPM Max.
3	STORAGE IN HIGH TEMPERATURE	+125 $\pm 2^{\circ}\text{C}$ for 500 hours.	Frequency Drift ± 5 PPM Max.
4	STORAGE IN LOW TEMPERATURE	-55 $\pm 2^{\circ}\text{C}$ for 500 hours.	Frequency Drift ± 5 PPM Max.
5	RESISTANCE TO SOLDERING HEAT	Pass through reflow for 10s (Max.) which is pre-heated at a temperature of 160 $^{\circ}\text{C} \pm 10^{\circ}\text{C}$ and 240 $^{\circ}\text{C} \pm 5^{\circ}\text{C}$	Frequency Drift ± 5 PPM Max.
6	HUMIDITY	+ 60 $\pm 2^{\circ}\text{C}$ in humidity 95% for 500 hours.	Frequency Drift ± 5 PPM Max.
7	THERMAL SHOCK	Supply 500 cycles as follows: Temperature shift shall be done within 30 sec. -40 $\pm 2^{\circ}\text{C}$ +85 $\pm 2^{\circ}\text{C}$ (30 min) <-----> (30 min)	Frequency Drift ± 5 PPM Max.
8	TEMPERATURE CYCLE	<p>Supply 100 cycles as follows:</p> <p>The graph shows a temperature cycle starting at +25 $\pm 5^{\circ}\text{C}$ for 10 min, dropping to -40 $\pm 3-5^{\circ}\text{C}$ for 30 min, rising to +25 $\pm 5^{\circ}\text{C}$ for 10 min, and finally rising to +85 + 5 -2$^{\circ}\text{C}$ for 30 min. This sequence is labeled as '1 Cycle'.</p>	Frequency Drift ± 5 PPM Max.
9	SEALING TIGHTNESS MIL-STD 202F METHOD 112D TEST C AND D	1) Dipping in Florinert at: +125 $\pm 5^{\circ}\text{C}$ for 5 min. (Gross Leak)	There are no visual abnormalities.
		2) Leak rate shall be measured by using: Helium leak Detector (Fine Leak)	There are no visual abnormalities.
10	Mean Time Between Failures (MTBF)	$\text{MTBF (25}^{\circ}\text{C)} = \frac{E_a \times (1/T_1 - 1/T_2) / K}{\pi \times H_s X_e^{\circ} C_e}$	16396600 Hours