

RELIABILITY TEST PROCEDURES FOR ECS-200X 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. Resistance Drift $\pm 15\%$ 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. Resistance Drift $\pm 15\%$ Max.
3	STORAGE IN HIGH TEMPERATURE	$+85 \pm 2^\circ\text{C}$ for 500 hours.	Frequency Drift ± 5 PPM Max. Resistance Drift $\pm 15\%$ Max.
4	STORAGE IN LOW TEMPERATURE	$-40 \pm 2^\circ\text{C}$ for 500 hours.	Frequency Drift ± 5 PPM Max. Resistance Drift $\pm 15\%$ Max.
5	HUMIDITY	$+ 60 \pm 2^\circ\text{C}$ in humidity 95% for 500 hours.	Frequency Drift ± 5 PPM Max. Resistance Drift $\pm 15\%$ Max.
6	THERMAL SHOCK	Supply 500 cycles as follows: Temperature shift shall be done within 30 sec. $-55 \pm 2^\circ\text{C}$ $+125 \pm 2^\circ\text{C}$ (30 min) <-----> (30 min)	Frequency Drift ± 5 PPM Max. Resistance Drift $\pm 15\%$ Max.
7	TEMPERATURE CYCLE	Supply 100 cycles as follows: <p>The graph shows a single cycle of temperature fluctuations. It starts at $+25 \pm 5^\circ\text{C}$ for 10 minutes, drops to $-55 \pm 3.5^\circ\text{C}$ for 30 minutes, rises to $+25 \pm 5^\circ\text{C}$ for 10 minutes, and finally reaches $+125 \pm 5 - 2^\circ\text{C}$ for 30 minutes. This sequence is repeated 100 times.</p>	Frequency Drift ± 5 PPM Max. Resistance Drift $\pm 15\%$ Max.
8	STRENGTH OF TERMINALS/LEAD WIRES	1) Lead Pull: Weight: 1 Kg Time: 30 sec.	There are no visual abnormalities.
		2) Lead Bend: Weight: 225 g Bending Angle: 90 degrees Bending Count: 2 times	There are no visual abnormalities.
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)	$\text{MTBF} (25^\circ\text{C}) = \frac{E_a \times (1/T_1 - 1/T_2) / K}{\pi \times H_s \times \text{Xe}^{\text{Ce}}}$	16396600 Hours