

RELIABILITY TEST PROCEDURES FOR HC-46X 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 $\pm 2^\circ\text{C}$ (30 min) <-----> +125 $\pm 2^\circ\text{C}$ (30 min)	Frequency Drift ± 5 PPM Max. Resistance Drift $\pm 15\%$ Max.
7	TEMPERATURE CYCLE	<p>Supply 100 cycles as follows:</p> <p>Graph description: The graph shows a temperature cycle starting at +25 $\pm 5^\circ\text{C}$ for 10 min, dropping to -55 $\pm 3.5^\circ\text{C}$ for 30 min, rising to +25 $\pm 5^\circ\text{C}$ for 10 min, then rising to +125 $\pm 5^\circ\text{C}$ for 30 min, and finally cooling back to +25 $\pm 5^\circ\text{C}$. This sequence is labeled as '1 Cycle'.</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)	$\text{MTBF (25}^\circ\text{C)} = \frac{E_a \times (1/T_1 - 1/T_2) / K}{\pi}$	16396600 Hours