

# RELIABILITY TEST PROCEDURES FOR ECS-LVDS25, ECS-LVDS33 Series



<u>NO.</u>	<u>TEST NAME</u>	<u>TEST PROCEDURES</u>	<u>REQUIREMENTS</u>
1	SHOCK	Drop 3 times from the height of 100cm onto hard wooden board.	Frequency Drift ±5 PPM Max. Resistance Drift ±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 ±15% Max.
3	STORAGE IN HIGH TEMPERATURE	+85 ±2°C for 500 hours.	Frequency Drift ±5 PPM Max. Resistance Drift ±15% Max.
4	STORAGE IN LOW TEMPERATURE	-40 ±2°C for 500 hours.	Frequency Drift ±5 PPM Max. Resistance Drift ±15% Max.
5	RESISTANCE TO SOLDERING HEAT	Pass through reflow for 10s (Max.) which is pre-heated at a temperature of 160°C ± 10°C and 240°C ± 5°C	Frequency Drift ±5 PPM Max. Resistance Drift ±15% Max.
6	HUMIDITY	+ 60 ± 2°C in humidity 95% for 500 hours.	Frequency Drift ±5 PPM Max. Resistance Drift ±15% Max.
7	THERMAL SHOCK	Supply 500 cycles as follows: Temperature shift shall be done within 30 sec. -55 ±2°C                                      +125 ±2°C (30 min) <-----> (30 min)	Frequency Drift ±5 PPM Max. Resistance Drift ±15% Max.
8	TEMPERATURE CYCLE	Supply 100 cycles as follows: <p>Graph description: A single cycle of a temperature profile. It starts at a ramp up to +25 ±5°C (10 min), holds at +25 ±5°C (10 min), ramps down to -55 ±3.5°C (30 min), holds at -55 ±3.5°C (30 min), ramps up to +125 +5 -2°C (30 min), and holds at +125 +5 -2°C (30 min) before ramping down.</p>	Frequency Drift ±5 PPM Max. Resistance Drift ±15% Max.
9	SEALING TIGHTNESS MIL-STD 202F METHOD 112D TEST C AND D	1) Dipping in Florinert at: +125 ±5°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