

RELIABILITY TEST PROCEDURES FOR ECS-327ATQMV Series



<u>NO.</u>	<u>TEST NAME</u>	<u>TEST PROCEDURES</u>	<u>REQUIREMENTS</u>
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1	Drop Test	Fall Height: 150cm, Weight: 50g on concrete plane. Fall Times: 10 times.	Frequency Drift ±5 PPM Max.
2	Mechanical Shock	Half-Sine wave with 0.3ms 3000G X, Y, Z each direction 1 time.	Frequency Drift ±5 PPM Max.
3	Vibration	Vibration Frequency: 10 to 55Hz Amplitude, 1.5mm, Frequency: 55~2000Hz Peak value, 20G Direction: X.Y.Z axis. Time: 4 hours in each direction	Frequency Drift ±5 PPM Max.
4	Storage in High Temperature	+125°C for 1000 hours.	Frequency Drift ±5 PPM Max.
5	Storage in Low Temperature	-40°C for 1000 hours.	Frequency Drift ±5 PPM Max.
6	Resistance to Solder Heat	The lead is immersed in a 260°C ±5°C solder bath within 10 ±1 seconds	Frequency Drift ±5 PPM Max.
7	Humidity	1000 hours, 85°C and 85% humidity (in use)	Frequency Drift ±5 PPM Max.
8	Thermal Shock	-55/125°C 300 cycles, transfer time 20 seconds, dwell time 5 minutes.	Frequency Drift ±5 PPM Max.
9	Temperature Cycle	1000 Cycles (-40 ~ +125°C)	Frequency Drift ±5 PPM Max.
10	Leakage	Gross leak (Air leak test), Fine leak (Helium leak test) He-pressure: 6kgf/cm ² 2 hours.	There are no visual abnormalities.
11	Board Flex	Shall be pressurized at a speed of approx. 0.5mm/sec in the direction indicated by the arrow until the bending width reaches 2mm and held for 5 sec.	There are no visual abnormalities.
12	Terminal Strength	Force 60s at 1, 8kg	There are no visual abnormalities.
13	Resistance to Solvents	With IPA to scrub the surface of the subject with brush 10 times.	There are no visual abnormalities.
14	Mean Time Between Failures (MTBF)	$MTBF (25^{\circ}C) = \frac{H_s X e^{\frac{E_a}{K} (1/T_1 - 1/T_2)}}{\pi}$	16396600 Hours