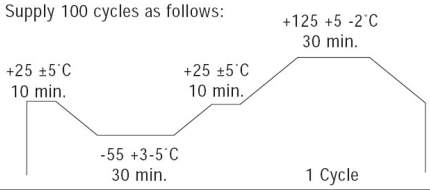
# RELIABILITY TEST PROCEDURES FOR ECS-TXO-2016MV Series

| NO. | TEST NAME | TEST PROCEDURES | REQUIREMENTS |
|---|---|---|---|
| 1 | SHOCK | Drop 3 times from the height of 100cm onto hard wooden board. | Frequency Drift ±1 PPM Max. |
| 2 | VIBRATION | Vibration Frequency: 10 to 55Hz, 1.5mm, full wave<br>Cycle: 2 min.<br>Direction: X.Y.Z.<br>Time: 2 hours in each direction | Frequency Drift ±1 PPM Max. |
| 3 | STORAGE IN HIGH TEMPERATURE | +85 ±2ºC for 500 hours. | Frequency Drift ±1 PPM Max. |
| 4 | STORAGE IN LOW TEMPERATURE | -40 ±2ºC for 500 hours. | Frequency Drift ±1 PPM Max. |
| 5 | RESISTANCE TO SOLDERING HEAT | Pass through reflow for 10s (Max.) which is pre-heated at a temperature of 160ºC ± 10ºC and 240ºC ± 5ºC | Frequency Drift ±1 PPM Max. |
| 6 | HUMIDITY | + 60 ± 2ºC in humidity<br>95% for 500 hours. | Frequency Drift ±1 PPM Max. |
| 7 | THERMAL SHOCK | Supply 500 cycles as follows:<br>Temperature shift shall be done within 30 sec.<br>-55 ±2ºC +125 ±2ºC<br>(30 min) <----------> (30 min) | Frequency Drift ±1 PPM Max. |
| 8 | TEMPERATURE CYCLE |  | Frequency Drift ±1 PPM Max. |
| 9 | SEALING TIGHTNESS MIL-STD 202F METHOD 112D TEST C AND D | 1) Dipping in Florinert at:<br>+125 ±5ºC for 5 min.<br>(Gross Leak) | There are no visual abnormalities. |
| | | 2) Leak rate shall be measured by using:<br>Helium leak Detector<br>(Fine Leak) | There are no visual abnormalities. |
| 10 | Mean Time Between Failures (MTBF) | $MTBF\ (25ºC) = \frac{HsXeºCe^{Ea \times (1/T1-1/T2) / K}}{\pi}$ | 16396600 Hours |