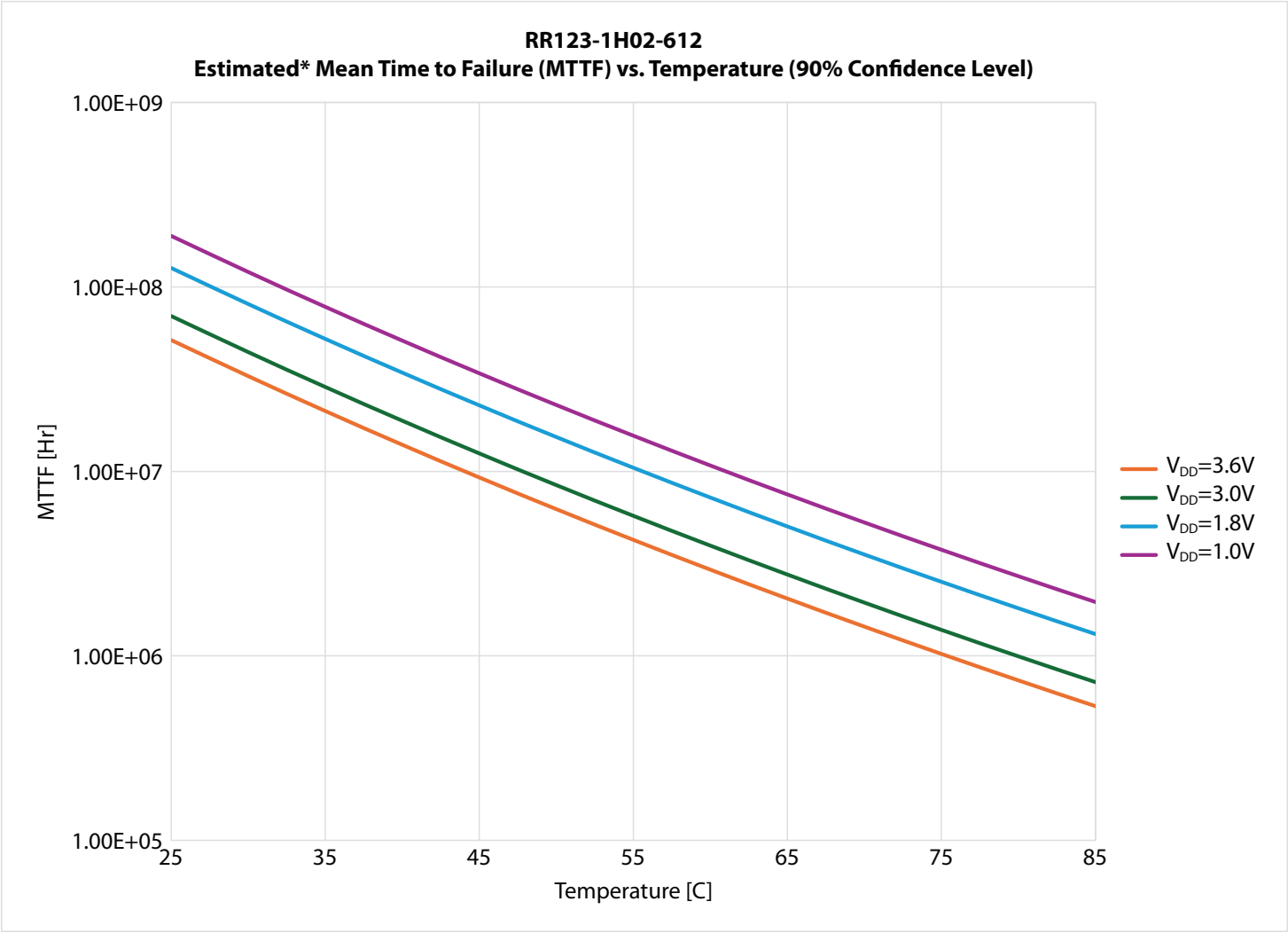
15 RedRock® RR123-1H02-612 Reliability Test Summary

Test	Abbreviation[1]	Reference Specification	Test Conditions	Sample Size/# Lots	Qty. Pass/Fail	Pass/Fail Criteria[2]	Notes
High-Temperature Operating Life	HTOL*	JESD22-A108D	Ta = +125°C Duration: 168/500/1000 hrs VDD=3.6V	80/1	80/0	Electrical/ Magnetic Attributes	Pass
High-Temperature Storage Life	HTSL*	JESD22-A103	Ta = +150°C Duration: 168/500/1000 hrs	90/1	90/0	Visual TSAM CSAM Electrical/ Magnetic Attributes	Pass
Biased Highly Accelerated Stress Test	B-HAST	JESD22-A110E	T=+130°C RH=85% P=230KPa Duration: 96 hrs VDD=3.6V	90/1	90/0	Visual TSAM CSAM Electrical/ Magnetic Attributes	Pass
Temperature Cycling	TC*	JESD22-A104	-65°C - +150°C Dwell time: 10 min Ramp Time: 5 min Duration: 500 cycles	90/1	90/0	Electrical/ Magnetic Attributes	Pass
Electrostatic Discharge Human Body Model	ESD-HBM	JS-001	500 V steps	3/1	3/0	Electrical/ Magnetic Attributes	Pass @ 2000 V
Electrostatic Discharge Charged Device Model	ESD-CDM	JESD22-C101	100 V steps	3/1	3/0	Electrical Magnetic Attributes	Pass @ 500 V
Latch-Up	LU	JESD78	50 mA steps	3/1	3/0	Electrical/ Magnetic Attributes	Class 1 (I_{TRIG} ≤ 100 mA @ V_{DD}=1.5V)

Notes:

1. For stress tests marked with an asterisk (*), the samples were pre-conditioned with a bake/soak/reflow process appropriate for MSL level 3 (per J-STD-020E) prior to the start of the indicated stress test.
   - Bake (unbiased): +125°C, 24 hours
   - Moisture Soak: +30°C, 60% RH, 192 hours
   - Simulated solder reflow: +260°C peak, ≥ 30 seconds dwell, 3 cycles

2. At the conclusion of the stress test, pass/fail of the samples was determined by the following screens:
   - Visual Inspection for gross defects, package/lead damage
   - CSAM/TSAM - Confocal/Transmission Scanning Acoustic Microscopy @ 75 MHz
   - Electrical/Magnetic Attributes:
     - Magnetic Sensitivity: B_{OP} ≤ ±9.0G, B_{RP} ≥ ±2.7G tested at V_{DD}=1.8V
     - Idle Supply Current: 7 nA ≤ I_{DD} ≤ 15 nA tested at V_{DD}=1.8V



B-HAST test samples (80 and 90 pieces, respectively) with zero failures over the test duration.