



maxim
integrated™

MAX20751 Qualification Report

Report approved:
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Sr. Principal Member of Technical Staff
Quality and Reliability
Maxim Integrated
1/22/2014

Silicon Foundry: TSMC
 Assembly Sub-Contractor: Carsem

Process Technology: 0.18 μm , 1 Poly, 4 Metal, 1.8/3.3V
 Package Type: QFN-36, SAC105 (MSL Level = 3)

Summary of Results (Product Related Stress Test)

Test(s)	Spec. Ref.	Conditions	Read Points	Pass Criteria	Lot 1	Lot 2	Lot 3	Comments
High Temperature Operational Life (HTOL)	JESD22-A108	$T_A = 125^\circ\text{C}$ $V_{DD} = 2.1\text{V}$ $V_{DD3.3} = 3.63\text{V}$	168 Hours 500 Hours 1000 Hours	0/77 0/77 0/77	0/77 0/77 0/77	0/77 0/77 0/77	0/77 0/77 0/77	Pass
Electro Static Discharge Human Body Model (HBM)	JS-001-2012 Formerly JESD22-A114	HBM	Post-ESD 500 Volts 1000 Volts 1500 Volts 2000 Volts	0/24 0/24 0/24 0/24	0/24 0/24 0/24 0/24	0/24 0/24 0/24 0/24	0/24 0/24 0/24 0/24	Pass HBM ESD Rating > 2000 Volts
ESD Characterization Charge Device Model	JESD22-C101	CDM	Post-ESD 100 Volts 200 Volts 500 Volts 1000 Volts 1500 Volts 2000 Volts	0/3 0/3 0/3 0/3 0/3 0/3	0/3 0/3 0/3 0/3 0/3 0/3	0/3 0/3 0/3 0/3 1/3 2/3	0/3 0/3 0/3 0/3 0/3 1/3	Pass CDM ESD Rating > 1000 Volts
Latch-Up (LU)	JESD78	$T_A=125^\circ\text{C}$ at $V_{DD} = \text{Max.}$ Max clamp = $\pm 100\text{mA}$	Post-LU Pass ATE	0/30	0/30	0/30	0/30	Pass Class 2

Summary of Results (Package Related Stress Test)

Test(s)	Spec. Ref.	Conditions	Read Points	Pass Criteria	Lot 1	Lot 2	Lot 3	Comments QFN-64, Carsem, Au Wire
Temperature Cycling (TC) *	JESD22-A104	Condition B -55°C to 125°C	500 Cycles 1000 Cycles	0/77 0/77	0/77 0/77	0/77 0/77	0/77 0/77	Pass
High Temperature Storage (HTS) *	JESD22-A103	Condition B 150°C	500 Hours 1000 Hours	0/77 0/77	0/77 0/77	0/77 0/77	0/77 0/77	Pass
Highly Accelerated Stress Test (HAST) *	JESD22-A110	130°C, 2 ATM, 85% RH, $V_{DD} = 1.8 \text{ V}$	96 Hours	0/77	0/77	0/77	0/77	Pass

* Pre-conditioning prior to TC, HTS and HAST stress tests (per JESD22-A113 and J-STD-020) Level 3 at 260°C.