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Reliability Report (Q2019-003)

IX4351NE Product Reliability Test 9A SIC MOSFET Driver

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Summary

The IX4351NE product has successfully passed IXYS ICD's requirements for product reliability test.

Table 1: Device Information

Product Number	IX4351NE
Package Type	16L SOICN
Assembly Site	Greatek, Taiwan
Test Site	IXYS ICD BEV, Beverly, MA, USA

Table 2: Reliability Test Result

Stress Test	Stress Conditions	Applicable Specs	Product/Package	Sample Size (SS)	# of Failures
HTRB	125°C, 80% WVDC, 1000 hrs	Mil-Std-883 M1005 JESD22-A-108	IX4351NE GE0117	105	0
			IX4351NE GE0121	105	0
			IX4351NE GE0122	105	0
HAST	130C, 85%, 18.8 psi, 96hrs	JESD22-A110-C	IX4351NE GE0117	77	0
Thermal Shock	0 to 100°C, 10/10 dwells, 15 cycles	Mil-Std-883, M1011	IX4351NE GE0117	55	0
Temperature Cycle	-55 to 125°C, 10/10 dwells, 300 cycles	Mil-Std-883, M1010, "B"	IX4351NE GE0117	55	0
Hot Storage	125C, 1000 hrs	JESD22-A103-C	IX4351NE GE0117 GE0121 GE0122	150	0
MSL	IR Reflow, Level 1	J-STD-020D.1	IX4351NE GE0117 GE0121	50	0

Table 3: ESD Results – 16L SOICN

Stress Test	Stress Conditions	Applicable Specs	Product/Package	Highest Passed	Class
HBM	All Pins, 1.5kΩ, 100pF	JS-001-2017	IX4351NE GE0117	+/-2000V	2

Table 4: FIT Rate Summary

Qual Lot #	Stress Test	# of Devices	# of Fail	Hours Tested	Equivalent Dev. Hours	FIT Rate @ 60% CL
1	HTRB	315	0	1000	87,448,782	11.44*
2	HAST	77	0	96	10,583,759	86.93**

* HTRB FIT Rate was calculated based on the Acceleration Factor (AF) and equivalent device hours at 0.7eV of activation energy at 125°C test temperature and 40°C use temperature.

** HAST FIT Rate was calculated based on the Acceleration Factor (AF) and equivalent device hours at 0.7eV of activation energy at 130°C test temperature and 40°C use temperature.

Approvals

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