IXYS
INTEGRATED CIRCUITS DIVISION

Reliability Report (Q2017-012)

4-Pin SOP New Mold Epoxy, New LED Qualification

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Summary

The CPC1008N, CPC1017N products with new mold epoxy and new LED have successfully passed IXYS ICD's requirements for product qualification.

Table 1: Device Information

Product Number	CPC1008N, CPC1017N
Package Type	4 Pin SOP
Assembly Site	Atec, Laguna, Philippines
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	CPC1017N TE3610 TE3611 TE3612 TE3613	398	0
			CPC1008N TE3617	105	0
HTFB	Ta = 125C LED Bias = 28V / ~10mA per device Duration 1000hrs	Mil-Std-883 M1005 JESD22-A-108	CPC1017N TE3612	37	0
			CPC1035N TE3615	37	0
			CPC1008N TE3617	37	0
HAST	130°C, 85%, 18.8PSI, 96 hrs	JESD22-A110-C	CPC1017N TE3611 TE3612 TE3613	231	0
Construction Analysis	Die Coat, Bond Quality, Die Attach, Bondline	N/A	CPC1017N TE3611 TE3612 TE3613	9	0
			CPC1008N TE3516	3	0

Stress Test	Stress Conditions	Applicable Specs	Product/ Package	Sample Size (SS)	# of Failures
Thermal Shock	0 to 100°C, 10/10 dwells, 15 cycles	Mil-Std-883, M1011	CPC1017N TE3611 TE3612 TE3613	165	0
			CPC1008N TE3516	55	0
Temperature Cycle	-55 to 125°C, 10/10 dwells, 300 cycles	Mil-Std-883, M1010, "B"	CPC1017N TE3611 TE3612 TE3613	165	0
			CPC1008N TE3516	55	0
Hot Storage	125C, 1000 hrs	JESD22-A103-C	CPC1017N TE3611 TE3612 TE3613	150	0
			CPC1008N TE3616 TE3617	100	0
MSL	IR Reflow, Level 3	J-STD-020D.1	CPC1017N TE3611 TE3612 TE3613	75	0
			CPC1008N TE3516	25	0

Table 3: FIT Rate Summary

Qual Lot #	Stress Test	# of Devices	# of Fail	Hours Tested	Equivalent Dev. Hours	FIT Rate @ 60% CL
1	HTRB	503	0	1080	138,746,737	6.63*
1	HTFB (LED)	111	0	1000	28,350,062	32.45*
1	HAST	231	0	96	31,751,277	28.98**

* HTRB/HTFB 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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