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Reliability Report (Q2020-001)

CPC1561 Product Qualification 60V, 1A, Single Pole, Normally Open, Current Limiting Relay with Thermal Shutdown

January 13, 2020

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Summary

The CPC1561 product has successfully passed IXYS ICD's requirements for product reliability test.

Table 1: Device Information

Product Number	CPC1561
Package Type	16L SOIC
Assembly Site	ATEC, 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	CPC1561 TE3761 TE3768 TE3776	315	0
HAST	110C, 85%, 3 psi, 264hrs	JESD22-A110-C	CPC1561 TE3776 TE3784 TE3785	231	0
Temperature Cycle	-55 to 125°C, 10/10 dwells, 300 cycles	Mil-Std-883, M1010, "B"	CPC1561 TE3776 TE3784 TE3785	55	0
Hot Storage	125C, 1000 hrs	JESD22-A103-C	CPC1561 TE3761 TE3768 TE3776	150	0
MSL	IR Reflow, Level 3	J-STD-020D.1	CPC1561 TE3776 TE3784 TE3785	75	0

Table 3: ESD Results – 16L SOIC

Stress Test	Stress Conditions	Applicable Specs	Product/ Package	Highest Passed	Class
HBM	All Pins, 1.5kΩ, 100pF	JS-001-2017	CPC1561 TE3761	+/-3000V	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	80,452,879	11.44*
2	HAST	231	0	264	30,475,477	30.19**

* 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 110°C test temperature and 40°C use temperature.

Approvals

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