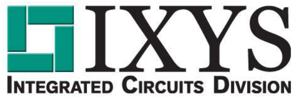

Reliability Report

Reliability Data for CPC5712

Report Title: Reliability Data for CPC5712

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Introduction:

This report summarizes the Reliability data of IXYS IC Division CPC5712. The Reliability data presented here were collected during IXYS IC Division product qualification. The purpose of this qualification was to verify IXYS IC Division Quality and Reliability requirements as outlined in IXYS IC Division internal specifications. The CPC5712 silicon is foundered at X-Fab Semiconductor Foundries AG in Dresden, Germany using the C7A process and assembled at Millenium Microtech in Shanghai, China available on 16-Lead QSOP package.

Reliability Tests:

Table 1 below provides the qualification tests that were performed. The stress tests and sample size are chosen based on IXYS IC Division internal specifications and with the approval of the product development team and quality assurance.

Table 1: Product CPC5712 Reliability Tests

Stress Test	Applicable Specs	Stress Conditions	Product/ Package	Number of Lots	Sample Size (SS)	Total SS
Thermal Shock (T/S)	Mil-Std-883, M1011	0 to 100°C, 10/10 dwells, 15 cycles	CPC5712 16L QSOP	2	55	110
Temp Cycle (T/C)	Mil-Std-883, N1010, “B”	-55 to 125°C, 10/10 dwells, 300 cycles	CPC5712 16L QSOP	2	55	110
ESD HBM	JESD22, A114-E	1.5kΩ, 100pF	CPC5712 16L QSOP	1	8	8

Reliability Test Results:

The stress tests and associated results for the product CPC5712 qualification are summarized in Table 2. The devices chosen for the qualification were from standard material manufactured through normal production test flow and electrically tested to datasheet limits prior to stressing. Then reliability stresses were conducted and electrically tested to datasheet limit at each interval and final readpoints.

Table 2: Product CPC5712 Reliability Test Results

Stress Test	Product/Kit Number	Readpoint / (Reject/ SS)	Comments
Thermal Shock	CPC5712 ME0007	15 Cycles	Qual Lot#1 Data
		0/55	

Stress Test	Product/Kit Number	Readpoint / (Reject/ SS)	Comments
Thermal Shock	CPC5712 ME0011	15 Cycles	Qual Lot#2 Data
		0/55	
Temp Cycle	CPC5712 ME0007	300 Cycles	Qual Lot#1 Data
		0/55	
Temp Cycle	CPC5712 ME0011	300 Cycles	Qual Lot#2 Data
		0/55	

ESD Testing Results:

As part of this qualification, the product CPC5712 was subjected to Human Body Model (HBM) ESD Sensitivity Classification testing using a KeyTek Zapmaster system. The results are summarized in Table 3. All samples were electrically tested to data sheet limits before and after ESD stressing and they passed after +/-4000V testing.

Table3: Product CPC5712 ESD Characterization Results

ESD Model	Product/Kit Number	Package	ESD Test Spec	RC Network	Highest Passed	Class
HBM	CPC5712 TE023	16L QSOP	JESD22, A114-E	1.5kΩ, 100pF	4000V	3A

Conclusion:

The qualification of the product CPC5712 has been successfully completed for the production release. Additional qualification reports are available through X-FAB Semiconductor and Millenium Microtech

APPROVAL:

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