

Qualification Description:

The information contained herein represents proof of Reliability and Performance of the baseline process technology listed below in accordance with the Qualification Plan and test methods referenced in Section 8.0, after exposure to a variety of environments (electrical, thermal, humidity, etc) and mechanical events that may occur during installation and operational lifetime of the product. Upon conclusion of the testing the product continued to operate within specification limits, demonstrating its capability of reliable operation throughout its lifetime.

The purpose of this report is to present Qualification Test results of the of referenced process technology. The Pericom product data presented in this report qualifies all products manufactured using the exact semiconductor materials and processing techniques used in the baseline process and its off-shoot processes. The report describes the qualification test program, procedures used, criteria enforced (at the time of product validation), and the resulting test data obtained during the Qualification Test. The materials and processing techniques used in the baseline process are incorporated into the off-shoot processes, so the quality/integrity of the baseline and off-shoots (i.e.: 2PxM, 1PxM) processes will be equivalent.

Lot Background Information:

Qual Test Date:	April-2009 update Jun-2015	By Ext. Process:	0.13um xPxM
Process Technology:	0.13um 1P4M 1.2V (Pericom) 0.13um 1P6M 1.25V (CSM)	Qual Vehicle(s):	PI2EQX5804, PI2EQX5804C
Foundry & Code:	CSM6 (C)	CSM Qual Part No:	Global/CSM Internal PN
Qual Test Number:	QDC09008 0.13um 1P4M		
Qual Test Number:	Global/CSM Qual 0.13um 1P6M		

Pericom's Qualification Test Results:

Stress Test	Test Procedure	Test Conditions	Duration	# of Lots	Samples per Lot	Results Pass/Fail
Dynamic High Temp	JESD22-A108	1000 hrs 1.2V 125°C	168 hrs	2	162	324 / 0
Operating Life		1000 hrs 1.2V 125°C	500 hrs	2	162	324 / 0
	(DHTOL - PI2EQX5804)	1000 hrs 1.2V 125°C	1000 hrs	1	54	54 / 0 *
Dynamic High Temp	JESD22-A108	1000 hrs 1.2V/3.3V 125°C	168 hrs	3	100	300 / 0
Operating Life		1000 hrs 1.2V/3.3V 125°C	500 hrs	3	100	300 / 0
	(DHTOL - CSM Qual 0.13um 1P6M - HTOL)	1000 hrs 1.2V/3.3V 125°C	1000 hrs	3	100	300 / 0
	(DHTOL - CSM Qual 0.13um 1P6M - ELF)	1000 hrs 1.2V/3.3V 125°C	168 hrs	1	1864	1864 / 0
				1	1369	1369 / 0
	* ELF based 3,957 units with 168 hrs DHTOL	ELF Rate (55C, 0.7eV, 1.2V, 60% CL)		15		
	* FIT based on 354 units with 1000 hours DHTOL	FIT Rate (55C, 0.7eV, 1.2V, 60% CL)		28		
		Calculated MTBF (hours)		36,244,605		
Temp Cycle Test	JESD22-A104	-65°C to 150°C, 500cyc	100 cycles	1	150	150 / 0
		-65°C to 150°C, 500cyc	500 cycles	1	150	150 / 0
Temp Cycle Test	JESD22-A104	-65°C to 150°C, 500cyc	100 cycles	2	77	154 / 0
	(P-TC - from Ongoing Rel Monitor - 2014)	-65°C to 150°C, 500cyc	500 cycles	2	77	154 / 0
High Temp Storage	JESD22-A103	1000hrs, 0V, 150°C	168 hrs	1	95	95 / 0
		1000hrs, 0V, 150°C	500 hrs	1	95	95 / 0
		1000hrs, 0V, 150°C	1000 hrs	1	95	95 / 0
High Temp Storage	JESD22-A103	1000hrs, 0V, 150°C	168 hrs	2	77	154 / 0
		1000hrs, 0V, 150°C	500 hrs	2	77	154 / 0
	(HTS - from Ongoing Rel Monitor - 2014)	1000hrs, 0V, 150°C	1000 hrs	2	77	154 / 0
Latch Up Test	EIA JESD78	Report available by Device				
ESD-HBM Test	JESD22-A114	Report available by Device				

* = Error in Burn-in Board schematic was discovered and HTOL was halted at 500 hours to repair of the BIB. HTOL was restarted with 54 fresh units.

Qualification by Extension Information:

It is valid to use the reliability data of a particular process technology and apply to all products within this process technology family. All parts within the same family are designed to the same rules (layout & electrical), and manufacturing is controlled by SPC. Within a product family, a device can only be fabricated on one process technology option. See Appendix A for other qualified devices.

If there are any questions about this qualification, please contact Quality Support at: customerquestion@pericom.com

Date: April-2009 update Jun-2015
 Subject: Pericom Process Qualification Report
 Mfg-Fab-Process: CSM6 (C) 0.13um 1P4M (Pericom) and 0.13um 1P6M (CSM)
 Qual Vehicle(s): PI2EQX5804, PI2EQX5804C

By extension: Pericom active devices using the Fab/Process at the time of the Qualification:

PI2EQX5804CNJE			
PI2EQX5804CNJEX			
PI2EQX5804DNJE			
PI2EQX5804DNJEX			
PI2EQX5864CZFE			
PI2EQX5864CZFEX			
PI2EQX5864DZFE			
PI2EQX5864DZFEX			
PI2EQX5904NJE			
PI2EQX5904NJEX			
PI2EQX5964ZFE			
PI2EQX5964ZFEX			
PI2EQX5984ZLE			
PI2EQX5984ZLEX			
PI2EQX6804-ANJE			
PI2EQX6804-ANJEX			
PI2EQX6864-AZFE			
PI2EQX6864-AZFEX			
PI3EQX5701ZDE			
PI3EQX5701ZDEX			
PI3EQX6701AZDE			
PI3EQX6701AZDEX			
PI3EQX6701CZDE			
PI3EQX6701CZDEX			
PI3EQX6701DZDE			
PI3EQX6701DZDEX			
PI3EQX6701EZDE			
PI3EQX6701EZDEX			
PI3EQX6701ZDE			
PI3EQX6701ZDEX			
PI3EQX6741STBZDE			
PI3EQX6741STBZDEX			
PI3EQX6741STZDE			
PI3EQX6741STZDEX			
PI3EQX7502IZDE			
PI3EQX7502IZDEX			
PI3EQX7741IZDE			
PI3EQX7741IZDEX			
PI3EQX7741STZDE			
PI3EQX7741STZDEX			
PI3EQX7742STZHE			
PI3EQX7742STZHEX			
PI3EQX5801ZDE			
PI3EQX5801ZDEX			