

Process Qualification Report

Reliability By Design

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:	update Jun-2006
Process Technology:	0.25um 1P4M
Foundry & Code:	TSM3 (T)
Qual Test Number:	QDT06001

By Ext. Process:	0.25um 1PxM
Qual Part Number:	PI7C21P100BNHE

Date Code: 0439BT, 0524BT

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	3000 hrs 3.6V 125°C	168 hrs	1	105	105 / 0
Operating Life		3000 hrs 3.6V 125°C	500 hrs	1	105	105 / 0
(DHTOL - 0439BT)		3000 hrs 3.6V 125°C	1000 hrs	1	105	105 / 0
		3000 hrs 3.6V 125°C	2000 hrs	1	105	105 / 0
		3000 hrs 3.6V 125°C	3000 hrs	1	105	105 / 0
Dynamic High Temp	JESD22-A108	1000 hrs 3.6V 125°C	168 hrs	1	105	105 / 0
Operating Life		1000 hrs 3.6V 125°C	500 hrs	1	105	105 / 0
(DHTOL - 0524BT)		1000 hrs 3.6V 125°C	1000 hrs	1	105	105 / 0
	Based on 105 units completing 3000 hrs of DHTOL	FIT Rate (55°C, 0.5 eV, 3.3V, 60% CL)	85.2			
		Calculated MTBF (hours)	11,739,558			
Temp Cycle Test	JESD22-A104	-65°C to 150°C, 1000 cycles	100 cycles	3	77	77 / 0
		-65°C to 150°C, 1000 cycles	500 cycles	3	77	77 / 0
		-65°C to 150°C, 1000 cycles	1000 cycles	3	77	77 / 0
High Temp Storage	JESD22-A103	1000hrs, 0V, 175°C	168 hrs	3	77	77 / 0
(HTS)		1000hrs, 0V, 175°C	500 hrs	3	77	77 / 0
		1000hrs, 0V, 175°C	1000 hrs	3	77	77 / 0
Latch Up Test	EIA JESD78	Report available by Device				
ESD-HBM Test	JESD22-A114	Report available by Device				

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.

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