

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:	Oct-214 updated Jun-2016
Process Technology:	0.09um 1P8M (90nm)
Foundry & Code:	TSMC (T)
Qual Test Number:	TN90CLQR002 QPE12010

By Ext. Process:	0.09um 1P8M 0.90um 1PxM
Qual Vehicle:	TSMC part number PI7C9X2G304SLAFDE PI7C9X2G404SLBFDE ORM testing lots (various)

Lot Numbers: N6H511.00 NHA185.06.1 NHA185.06.5

Pericom's Qualification Test Results:

Stress Test	Test Procedure	Test Conditions	Duration	# of Lots	Samples per Lot	Results Pass/Fail
Accelerated High Temp	JESD22-A108	1000 hrs 3.5V 1.2V(Core) 125°C	168 hrs	3	99	297 / 0
Operating Life		1000 hrs 3.5V 1.2V(Core) 125°C	500 hrs	3	99	297 / 0
(TSMC - AHTOL)		1000 hrs 3.5V 1.2V(Core) 125°C	1000 hrs	3	99	297 / 0
High Temp Operating	JESD22-A108	1000 hrs 1.2V 125°C	168 hrs	3	77	231 / 0
Life (HTOL)		1000 hrs 1.2V 125°C	500 hrs	3	77	231 / 0
(PI7C9X2G304SLA) (PI7C9X2G404SLB)		1000 hrs 1.2V 125°C	1000 hrs	3	77	231 / 0
	ELFR based on 528 units completed 168 hrs HTOL	ELF Rate (55C, 0.7 eV, 3.5V, 60% CL)		104		
	FIT based on 528 units completed 1,000 hrs HTOL	FIT Rate (55C, 0.7 eV, 3.5V, 60% CL)		20		
		Calculated MTBF (hours)		50,927,360		
Temp Cycle Test	JESD22-A104	-65°C to 150°C, 100cycles, 0V	200 cycles	3	77	231 / 0
	(Air to Air)	-65°C to 150°C, 100cycles, 0V	500 cycles	3	77	231 / 0
		-65°C to 150°C, 100cycles, 0V	1000 cycles	3	77	231 / 0
Temp Cycle Test	JESD22-A104	-65°C to 150°C, 100cycles, 0V	200 cycles	4	77	308 / 0
(ORM testing)	(Air to Air)	-65°C to 150°C, 100cycles, 0V	500 cycles	4	77	308 / 0
High Temp Storage	JESD22-A103	1000hrs, 0V, 150°C	168 hrs	3	77	231 / 0
(HTS)	MIL-STD-883, M1008	1000hrs, 0V, 150°C	500 hrs	3	77	231 / 0
		1000hrs, 0V, 150°C	1000 hrs	3	77	231 / 0
High Temp Storage	JESD22-A103	1000hrs, 0V, 150°C	168 hrs	4	77	308 / 0
(HTS)	MIL-STD-883, M1008	1000hrs, 0V, 150°C	500 hrs	4	77	308 / 0
(ORM testing)		1000hrs, 0V, 150°C	1000 hrs	4	77	308 / 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

Date: Oct-214 updated Jun-2016
 Subject: Pericom Process Qualification Report
 Mfg-Fab-Process: TSMC (T) 0.09um 1P8M (90nm)
 Qual Vehicle: TSMC part number, PI7C9X2G304SLAFDE, PI7C9X2G404SLBFDE

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

PI7C9X2G303ELZXEX				
PI7C9X2G304ELZXAEX				
PI7C9X2G312GPNJE				
PI7C9X2G312GPNJEX				
PI7C9X2G404ELZXAEX				
PI7C9X2G606PRANJE				
PI7C9X2G606PRANJEX				
PI7C9X2G606PRBNJE				
PI7C9X2G606PRBNJEX				
PI7C9X2G608ELAZXAE				
PI7C9X2G608ELAZXAEX				
PI7C9X2G608ELZXAE				
PI7C9X2G608ELZXAEX				
PI7C9X2G608GPNJE				
PI7C9X2G608GPNJEX				
PI7C9X2G612GPANJE				
PI7C9X2G612GPANJEX				
PI7C9X2G612GPBNJE				
PI7C9X2G612GPBNJEX				
PI7C9X2G612GPNJE				
PI7C9X2G612GPNJEX				
PI7C9X2G303ELAZXE				
PI7C9X2G303ELAZXEX				
PI7C9X2G303ELBZXE				
PI7C9X2G303ELBZXEX				
PI7C9X2G304SLBFDE				
PI7C9X2G304SLBFDEX				
PI7C9X2G404SLBFDE				
PI7C9X2G404SLBFDEX				
PI7C9X2G304ELZXAE				
PI7C9X2G308GPNJE				
PI7C9X2G308GPNJEX				
PI7C9X2G312GPANJE				
PI7C9X2G312GPANJEX				
PI7C9X2G404ELZXAE				
PI7C9X2G608GPANJE				
PI7C9X2G608GPANJEX				
PI7C9X2G304SLAFDE				
PI7C9X2G304SLAFDEX				
PI7C9X2G404SLAFDE				
PI7C9X2G404SLAFDEX				

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