

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:	Jun-2010, update Jun-2015	By Ext. Process:	0.35um 1P5M, 1PxM
Process Technology:	0.35um 2P5M		0.35um 2PxM
Foundry & Code:	MGN (G)		
Qual Test Number:	QDG09010 1P4M	Qual Vehicles:	PI3USB103ZLE, PI3A412ZHE, Generic PN,
	QDA12010 2P5M		PI3PD22920GBE, PI3PD22919GBE

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 3.6V 125°C	168 hrs	2 2	60 77	120 / 0 154 / 0
Operating Life (HTOL)		1000 hrs 3.6V 125°C	500 hrs	2 2	60 77	120 / 0 154 / 0
(PSC) PI3USB103ZLE -2010 (PSC) PI3USB103ZLE - 2015		1000 hrs 3.6V 125°C	1000 hrs	2 2	60 77	120 / 0 154 / 0
Dynamic High Temp	JESD22-A108	1000 hrs 3.6V 125°C	168 hrs	2	77	154 / 0
Operating Life (HTOL)		1000 hrs 3.6V 125°C	500 hrs	2	77	154 / 0
(PSC) PI3PD22920_Pi3PD229919 GBEX		1000 hrs 3.6V 125°C	1000 hrs	2	77	154 / 0
Dynamic High Temp	JESD22-A108	1000 hrs 4.2V 125°C	168 hrs	1	80	80 / 0
Operating Life (HTOL)		1000 hrs 4.2V 125°C	500 hrs	1	80	80 / 0
(PTI) PI3A412ZHE		1000 hrs 4.2V 125°C	1000 hrs	1	80	80 / 0
HTOL - MagnaChip WLR Generic part numbers	JESD22-A108	1000 hrs 3.6V 145°C	1000 hrs	3	77	231 / 0
	ELFR based on 739 units after 168hrs of DHTOL FIT based on 739 units after 1000hrs of DHTOL	ELFR Rate (55C, 0.7eV, 3.6V, 60%) FIT Rate (55C, 0.7eV, 3.6V, 60%) Calculated MTBF (hours)		47.9 8.0 124,292,982		
P-Temp Cycle Test	JESD22-A104	-65°C to 150°C, 500cyc	100 cycles	2 2	50 77	100 / 0 154 / 0
(PSC) PI3USB103ZLE		-65°C to 150°C, 500cyc	500 cycles	2 2	50 77	100 / 0 154 / 0
Temp Cycle Test	JESD22-A104	-65°C to 150°C, 500cyc	100 cycles	2	77	154 / 0
(PSC) PI3PD22920_Pi3PD229919 GBEX		-65°C to 150°C, 500cyc	500 cycles	2	77	154 / 0
High Temp Storage	JESD22-A103	1000hrs, 0V, 150°C	168 hrs	2 2	50 77	100 / 0 154 / 0
(HTS)		1000hrs, 0V, 150°C	500 hrs	2 2	50 77	100 / 0 154 / 0
(PSC) PI3USB103ZLE		1000hrs, 0V, 150°C	1000 hrs	2 2	50 77	100 / 0 154 / 0
High Temp Storage	JESD22-A103	1000hrs, 0V, 150°C	168 hrs	2	77	154 / 0
(HTS)		1000hrs, 0V, 150°C	500 hrs	2	77	154 / 0
(PSC) PI3PD22920_Pi3PD229919 GBEX		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				

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: Jun-2010, update Jun-2015
 Subject: PericomProcess Qualification Report
 Mfg-Fab-Process: MGN (G) 0.35um 2P5M
 Qual Vehicle: PI3USB103ZLE, PI3A412ZHE, Generic PN, PI3PD22920GBE, PI3PD22919GBE

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

PI3A114-AZLEX	PI3B32X245BEX	PI3V712-AZLE	PI6C49X0204BWIEX	
PI3A223ZMEX	PI3B32X384BE	PI3V712-AZLEX	PI6C49X0206TLIEX	
PI3A2268ZMEX	PI3B32X384BEX	PI3V713-AZLE	PI6C49X0208ZHIE	
PI3A268CZMEX	PI3B3384LE	PI3V713-AZLEX	PI6C49X0208ZHIEX	
PI3A3899ZTEX	PI3B3384LEX	PI3V724ZLE	PI6C49X0210-AZHIE	
PI3A412ZHE	PI3B3384QE	PI3V724ZLEX	PI6C49X0210-AZHIEX	
PI3A412ZHEX	PI3B3384QEX	PI3VST01UE	PI6C49X0210ZHIE	
PI3B3125LE	PI3B33X257BE	PI3VST01UEX	PI6C49X0210ZHIEX	
PI3B3125LEX	PI3B33X257BEX	PI3VST01ZEE	PI6CDBL401BZHIEX	
PI3B3125QE	PI3B34X245BE	PI3VST01ZEEX	PI6CDBL402BLIEX	
PI3B3125QEX	PI3B34X245BEX	PI5PD22965ZAEX	PI6CFGL201BZDIEX	
PI3B3125WE	PI3B3861LE	PI5PD22966ZJEX	PI6CFGL202BLIEX	
PI3B3125WEX	PI3B3861LEX	PI5USB14550-AZEE	PI6CFGL401BZHIEX	
PI3B3126QE	PI3B3861QE	PI5USB14550-AZEEX	PI6CFGL402BLIEX	
PI3B3126QEX	PI3B3861QEX	PI5USB14566AZAEX	PI6CFGL601BZHIEX	
PI3B3126WE	PI3L100QE	PI5USB1457AZAEX	PT7C4372ALE	
PI3B3126WEX	PI3L100QEX	PI5USB1457ZAEX	PT7C4372ALEX	
PI3B3244LE	PI3LVD1012BE	PI5USB1458AZAEX	PT7C4372AWE	
PI3B3244LEX	PI3LVD1012BEX	PI5USB1458ZAEX	PT7C4372AWEX	
PI3B3244QE	PI3LVD400ZFE	PI5USB1468AZAEX	PT7C4563LE	
PI3B3244QEX	PI3LVD400ZFEX	PI5USB1468ZAEX	PT7C4563LEX	
PI3B3245LE	PI3LVD512ZFE	PI5USB2058ZHE	PT7C4563UE	
PI3B3245LEX	PI3LVD512ZFEX	PI5USB2058ZHEX	PT7C4563UEX	
PI3B3245QE	PI3PD22919GBEX	PI5USB2543ZHEX	PT7C4563WE	
PI3B3245QEX	PI3PD22920GBEX	PI5USB268QEX	PT7C4563WEX	
PI3B3245SE	PI3USB102IZLEX	PI5USB268ZHEX		
PI3B3245SEX	PI3USB102ZLEX	PI5USB30216AXUAEX		
PI3B3251LE	PI3USB102ZMEX	PI5USB30216BXUAEX		
PI3B3251LEX	PI3USB103ZLEX	PI5USB30216XUAEX		
PI3B3251QE	PI3USB10LP-BEZMEX	PI5USB66TEX		
PI3B3251QEX	PI3USB10LP-BZMEX	PI5USB68AWEX		
PI3B3253LE	PI3USB14-ALE	PI5USB68SAWEX		
PI3B3253LEX	PI3USB14-ALEX	PI5USB68SWEX		
PI3B3253QE	PI3USB14-AQE	PI5USB68WEX		
PI3B3253QEX	PI3USB14-AQEX	PI5USB8000QZHEX		
PI3B3253WE	PI3USB14-AZHE	PI6C10806BLE		
PI3B3253WEX	PI3USB14-AZHEX	PI6C10806BLEX		
PI3B3257LE	PI3USB221XAEX	PI6C49X0201WIEX		
PI3B3257LEX	PI3USB221ZEE	PI6C49X0202WIE		
PI3B3257QE	PI3USB221ZEEX	PI6C49X0202WIEX		
PI3B3257QEX	PI3USB223ZMEX	PI6C49X0204-04LIEX		
PI3B3257WE	PI3USB32212ZLEX	PI6C49X0204AWIEX		
PI3B3257WEX	PI3USB32XAEX	PI6C49X0204B-AWE		
PI3B32X245BE	PI3USB42ZMEX	PI6C49X0204B-AWEX		

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