

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:	Apr-2005 updated Jun-2016	By Ext. Process:	0.25um 1P5M
Process Technology:	0.25um 1P4M		0.25um 1PxM
Foundry & Code:	MGN (G)		
Qual Test Number:	QDG04012	Qual Vehicle(s):	PI2DBS40VE PI3DBS3224ZNAE PI4ULS3V304ZME

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 2.75V 150°C	168 hrs	1	135	135 / 0
Operating Life		3000 hrs 2.75V 150°C	500 hrs	1	135	135 / 0
(DHTOL)		3000 hrs 2.75V 150°C	1000 hrs	1	135	135 / 0
(PI2DBS40VE - 2005)		3000 hrs 2.75V 150°C	2000 hrs	1	135	135 / 0
		3000 hrs 2.75V 150°C	3000 hrs	1	135	135 / 0
Dynamic High Temp	JESD22-A108	1000 hrs 4.0V 125°C	168 hrs	3	77	231 / 0
Operating Life		1000 hrs 4.0V 125°C	500 hrs	3	77	231 / 0
(PI3DBS3224ZNAE)		1000 hrs 4.0V 125°C	1000 hrs	3	77	231 / 0
Dynamic High Temp	JESD22-A108	1000 hrs 6.0V 125°C	168 hrs	1	77	77 / 0
Operating Life		1000 hrs 6.0V 125°C	500 hrs	1	77	77 / 0
(PI4ULS3V304ZME)		1000 hrs 6.0V 125°C	1000 hrs	1	77	77 / 0
Dynamic High Temp	JESD22-A108	1000 hrs 3.6V 145°C	168 hrs	3	77	231 / 0
Operating Life		1000 hrs 3.6V 145°C	500 hrs	3	77	231 / 0
(Process HTOL)		1000 hrs 3.6V 145°C	1000 hrs	3	77	231 / 0
ELFR (various lots)	JESD22-A108	48 hrs 6.0V 125°C	168 hrs	1	539	539 / 0
ELFR	JESD22-A108	48 hrs 4.0V 125°C	48 hrs	1	3000	3000 / 0
(PI3DBS3224ZNAE)						
ELFR	JESD22-A108	48 hrs 6.0V 125°C	48 hrs	1	1000	1000 / 0
(PI4ULS3V304ZME)						
ELFR Rate is based on 4000 ea > 48 hours, and 539 ea > 168 hours.		ELFR Rate (55°C, 0.7 eV, 4.0V, 60%CL)		38.7		
FIT Rate is based on 539 units > 1,000 hours		FIT Rate (55°C, 0.7 eV, 4.0V, 60%CL)		13.8		
		Calculated MTBF (hrs)		72,508,891		
Temp Cycle Test	JESD22-A104	-65°C to 150°C, 500cyc	100 cycles	1	76	76 / 0
		-65°C to 150°C, 500cyc	500 cycles	1	76	76 / 0
Temp Cycle Test	JESD22-A104	-65°C to 150°C, 500cyc	100 cycles	4	77	308 / 0
(Rel Monitor)		-65°C to 150°C, 500cyc	500 cycles	4	77	308 / 0
High Temp Storage	JESD22-A103	1000hrs, 0V, 150°C	168 hrs	1	100	100 / 0
(HTS)		1000hrs, 0V, 150°C	500 hrs	1	100	100 / 0
		1000hrs, 0V, 150°C	1000 hrs	1	100	100 / 0
High Temp Storage	JESD22-A103	1000hrs, 0V, 150°C	168 hrs	4	77	308 / 0
(HTS - Rel Monitor)		1000hrs, 0V, 150°C	500 hrs	4	77	308 / 0
		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: **Apr-2005 updated Jun-2016**
 Subject: **PericomProcess Qualification Report**
 Mfg-Fab-Process: **MGN (G) 0.25um 1P4M**
 Qual Vehicle: **PI2DBS40VE PI3DBS3224ZNAE PI4ULS3V304ZME**

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

PI2DBS212ZHE	PI3HDMI2410FFE	PI3VDP612-AZHE		
PI2DBS212ZHEX	PI3HDMI2410FFEX	PI3VDP612-AZHEX		
PI2DBS412ZHE	PI3HDMI245-AZLE	PI3VDP612ZHE		
PI2DBS412ZHEX	PI3HDMI245-AZLEX	PI3VDP612ZHEX		
PI2DBS6212ZHE	PI3HDMI301FFE	PI3VDP8200ZBE		
PI2DBS6212ZHEX	PI3HDMI301FFEX	PI3VDP8200ZBEX		
PI2DDR3212NCE	PI3HDMI301ZLE	PI3VEDP212ZLE		
PI2DDR3212NCEX	PI3HDMI301ZLEX	PI3VEDP212ZLEX		
PI2DDR3212ZLE	PI3HDMI336FBE	PI3WVR12412ZHE		
PI2DDR3212ZLEX	PI3HDMI336FBEX	PI3WVR12412ZHEX		
PI2PCIE2212ZHE	PI3HDMI412ADZBE	PI3WVR12612NEE		
PI2PCIE2212ZHEX	PI3HDMI412ADZBEX	PI3WVR12612NEEX		
PI2PCIE2214ZHE	PI3HDMI412FT-AZHE	PI3WVR12612ZLE		
PI2PCIE2214ZHEX	PI3HDMI412FT-AZHEX	PI3WVR12612ZLEX		
PI2PCIE2412ZHE	PI3HDMI412FT-BZHE	PI4ULS3V304ZMEX		
PI2PCIE2412ZHEX	PI3HDMI412FT-BZHEX	PI6C10804WE		
PI2PCIE2422ZHE	PI3PCIE2215ZHE	PI6C10804WEX		
PI2PCIE2422ZHEX	PI3PCIE2215ZHEX	PI6C10807HE		
PI2PCIE2442ZHE	PI3PCIE2415ZHE	PI6C10807HEX		
PI2PCIE2442ZHEX	PI3PCIE2415ZHEX	PI6C10810HE		
PI2PCIE412-CZHEX	PI3PCIE2612-AZFE	PI6C10810HEX		
PI2PCIE412-DZHE	PI3PCIE2612-AZFEX	PI6C10810LE		
PI2PCIE412-DZHEX	PI3USB3102ZLE	PI6C10810LEX		
PI2USB3212ZHE	PI3USB3102ZLEX	PI6C10810QE		
PI2USB3212ZHEX	PI3VDP12412NEE	PI6C10810QEX		
PI2USB4122ZHE	PI3VDP12412NEEX	PI6C4853111FAE		
PI2USB4122ZHEX	PI3VDP12412ZHE	PI6C4853111FAEX		
PI3DBS3224ZNAEX	PI3VDP12412ZHEX	PI6C485352FAE		
PI3EQXDP8121ZBE	PI3VDP1430ZBE	PI6C485352FAEX		
PI3EQXDP8121ZBEX	PI3VDP1430ZBEX	PI6CL10804WE		
PI3HDMI101-BZHE	PI3VDP3212ZLE	PI6CL10804WEX		
PI3HDMI101-BZHEX	PI3VDP3212ZLEX	PI4ULS3V302XVEX		
PI3HDMI101ZHE	PI3VDP411LSAZBE			
PI3HDMI101ZHEX	PI3VDP411LSAZBEX			
PI3HDMI1210-ABE	PI3VDP411LSRZBE			
PI3HDMI1210-ABEX	PI3VDP411LSRZBEX			
PI3HDMI1310-AZLE	PI3VDP411LSTRZBE			
PI3HDMI1310-AZLEX	PI3VDP411LSTRZBEX			
PI3HDMI1421ZBEX	PI3VDP411LSTZBE			
PI3HDMI1421ZHEX	PI3VDP411LSTZBEX			
PI3HDMI201ZFE	PI3VDP411LSZBE			
PI3HDMI201ZFEX	PI3VDP411LSZBEX			
PI3HDMI2310FFE	PI3VDP612-AZFE			
PI3HDMI2310FFEX	PI3VDP612-AZFEX			