

# Package Qualification Report

## Reliability By Design

### Qualification Description:

The information contained herein represents proof of Reliability and Performance of the Package Series listed below in accordance with the Qualification Plan and test methods referenced in Section 7.0, after exposure to a variety of environments and mechanical events that 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 referenced Package Series. The Pericom product data presented in this report qualifies the products manufactured in this package configuration, using the same bill of materials and assembled by the identified subcontractor location. The report describes the qualification test program, procedures utilized, criteria enforced (at the time of product validation), and specific result data obtained during the testing of three lots of semiconductors. The three lots consist of an equal number of units from different date codes, from the same production line and SubContractor to ensure manufacturing repeatability.

### Lot Background Information:

Qual Vehicle:	PI3VDP411LSZBE
Supplier (Code):	GTK (G)
Pkg Type - Code:	TQFN-48 (ZB48)
Process:	MGN 0.25um
Outline Drawing:	PD-2080
By Extension Pkg:	ZD24 ZH20 ZB20 ZA08 ZH16 ZL24 ZBS20 ZNA20 ZBB56 ZL40 ZL30

Qual Test Date:	May-2011 update Jul-2015
Die Attach Material:	1076DJ-G
Wire Size & Material:	0.8mil PdCu
Mold Compound:	G700HA
Leadframe Material:	A194 Copper
Lead Finish:	100% Matte Sn

### Pericom's Qualification Test Results:

Stress Test	Test Procedure	Test Conditions	Duration	# of Lots	Samples per Lot	Results Pass/Fail
Preconditioning	JESD22-A113	MSL1	NA	3	154	462 / 0
CSAM	J-STD-020	No delamination of Die Top, Wire bond, Down bond areas	NA	3	22	66 / 0
PreCon UHAST	JESD22-A118	130°C, RH 85%, 33.3 psia, 0V	96 hrs	3	77	231 / 0
PreCon B-HAST (via PI6LC48S5ZBBE)	JESD22-A110	130°C, RH 85%, 33.3 psia, Vmax	96 hrs	3	75	225 / 0
			192 hrs	3	15	45 / 0
PreCon Temp Cycle	JESD22-A104	-65°C to +150°C 500 Cycles	100 cycles	3	77	231 / 0
		-65°C to +150°C 500 Cycles	500 cycles	3	77	231 / 0
HTSL (no PreCon)	JESD22-A103	1000hrs, 0V, 150°C	500 hrs	3	77	231 / 0
			1000 hrs	3	77	231 / 0
Wire Strength, IMG		After 1000 hours HTSL	NA	3	2	6 / 0
Splash, Cratering		After Wire bonding	NA	3	3	9 / 0
Physical Dimension	JESD22-B100	Per Datasheet	NA	3	5	15 / 0
External Visual Insp	JESD22-B101	NA	NA	3	5	15 / 0
Solderability	J-STD-020	Pb-Free Solder Dip 245°C	NA	3	3	9 / 0
	JESD22-B102					

### Qualificaton by Extension Information:

Where a product of interest is not sampled during this period, it is valid to use the reliability data of the particular process technology or package type family to which the part belongs. All parts within the same family are designed to the same rules, and manufacturing is controlled by SPC. Within a product family, a device can only be fabricated on one process technology/ option, and only assembled on one package type process.

If there are any questions about this qualification, please contact Quality Support at:

[customerquestion@pericom.com](mailto:customerquestion@pericom.com)

Date: **May-2011 update Jul-2015**  
 PKG Type & Code: **TQFN-48 (ZB48)** QBE: ZD24 ZH20 ZB20 ZA08 ZH16 ZL24 ZBS20 ZNA20 ZBB56 ZL40 ZL30  
 Assembler-Code: **GTK (G)**  
 Qual Vehicle: **PI3VDP411LSZBE**

**By extension: Pericom active devices using the Package at the time of the Qualification:**

PI2EQX501EZAEX	PI1EQX7502AZDE	PI3USB14-AZHE	PI3HDX511AZLEX	
PI2EQX501TZAEX	PI1EQX7502AZDEX	PI3USB14-AZHEX	PI3HDX511BZLEX	
PI3EQX501IZAEX	PI2EQX7502EZDE	PI5USB2058ZHEX	PI3HDX511DZLE	
PI3EQX501SZAEX	PI2EQX7502EZDEX	PI5USB268ZHE	PI3HDX511DZLEX	
PI3EQX501ZAEX	PI2EQX7502FZDE	PI5USB268ZHEX	PI3PCIE3242ZLE	
PI5PD22965ZAEX	PI2EQX7502FZDEX		PI3PCIE3242ZLEX	
PI5USB14566AZAEX	PI2EQX7502TZDE	PI3DBS12212AZBSEX		
PI5USB1457AZAEX	PI2EQX7502TZDEX	PI3DBS12212ZBSE		
PI5USB1457BZAEX	PI3EQX12801ZDE			
PI5USB1457ZAEX	PI3EQX12801ZDEX	PI1EQX522ZLEX	PI4IOE5V9555ZHEX	
PI5USB1458AZAEX	PI3EQX7502AIZDE	PI3EQX522ZLEX		
PI5USB1458ZAEX	PI3EQX7502AIZDEX	PI3TB212ZLE		
PI5USB1468AZAEX	PI3EQX7502AZDE	PI3TB212ZLEX		
PI5USB1468ZAEX	PI3EQX7502AZDEX			
	PI3EQX7502BZDE	PI6LC48S25AZBBIIE		
PI3PCIE3212ZBEX	PI3EQX7502BZDEX	PI6LC48S25AZBBIEX		
PI3PCIE3215ZBE	PI3EQX7502MZDE	PI6LC48S25ZBBE		
PI3PCIE3215ZBEX	PI3EQX7502MZDEX	PI6LC48S25ZBBEX		
PI3USB302-AZBEX	PI6C59S6005ZDIE	PI6LC48S25ZBBIIE		
PI3USB302ZBEX	PI6C59S6005ZDIEX	PI6LC48S25ZBBIEX		
	PI6C59SENGZDIE			
PI3EQXDP1201ZBE	PI6CFGL201BZDIEX			
PI3EQXDP1201ZBEX	PI7C9X1170BZDE	PI3DBS3224ZNAEX		
PI3EQXDP8121ZBE	PI7C9X1170BZDEX			
PI3EQXDP8121ZBEX	PI7C9X760BZDE			
PI3HDMI1421ZBE	PI7C9X760BZDEX			
PI3HDMI1421ZBEX		PI3DBS12412AZLE		
PI3VDP1430ZBE	PI1EQX502AZHEX	PI3DBS12412AZLEX		
PI3VDP1430ZBEX	PI2EQX502EZHEX	PI3DBS12412ZLE		
PI3VDP411LSAZBE	PI2EQX502TZHEX	PI3DBS12412ZLEX		
PI3VDP411LSAZBEX	PI3EQX502IZHEX	PI3HDX511FZLE		
PI3VDP411LSRZBE	PI5USB2543ZHEX	PI3HDX511FZLEX		
PI3VDP411LSTRZBE	PI5USB2557ZHEX	PI3HDX511FZLIE		
PI3VDP411LSTRZBEX	PI5USB8000QZHEX	PI3HDX511FZLIEX		
PI3VDP411LSTZBE	PI6C557-01BZHIEX	PI3PCIE3442ZLE		
PI3VDP411LSTZBEX	PI6C5916004ZHIEX	PI3PCIE3442ZLEX		
PI3VDP411LSZBE	PI6C5922504ZHIEX	PI3USB30532ZLE		
PI3VDP411LSZBEX		PI3USB30532ZLEX		
PI7C9X754ZBE				
PI7C9X754ZBEX				

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