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 Part Number:	PI5A23159UE
Supplier (Code):	NFME (K)
Pkg Type - Code:	MSOP10 (U10)
Outline Drawing:	PD-1262
By Extension Pkg:	U08

Qual Test Date:	Jun-2015
Die Attach Material:	8290
Wire Size & Material:	0.8 mil Cu
Mold Compound:	G600F
Leadframe Material:	Copper (A194)
Lead Finish:	100% matte tin (Sn)
Date Codes	KEKG

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	253	759 / 0
CSAM	J-STD-020	No delamination of Die Top, Wire bond, Down bond areas	NA	3	22	66 / 0
PreCon PUHAST	JESD22-A118	130C, 85% RH, 96Hrs, 33.3 psia (230kPa)	96 hrs	3	77	231 / 0
PreCon BHAST	JESD22-A110	130C, 85% RH, 33.3 psia (230kPa), Vmax	96 hrs	3	77	231 / 0
		130C, 85% RH, 33.3 psia (230kPa), Vmax	192 hrs	3	77	231 / 0
PreCon Temp Cycle	JESD22-A104	-65°C to +150°C	100 cycles	3	77	231 / 0
		-65°C to +150°C	500 cycles	3	77	231 / 0
HTSL (no PreCon)	JESD22-A103	1000hrs, 0V, 150°C	500 hrs	3	77	231 / 0
		1000hrs, 0V, 150°C	1000 hrs	3	77	231 / 0
Physical Dimension	JESD22-B100	Per Datasheeet	NA	3	5	15 / 0
External Visual Insp	JESD22-B101	NA	NA	3	5	15 / 0
Solderability	J-STD-020 JESD22-B102	Pb-Free Solder Dip 245°C	NA	3	5	15 / 0

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

PH: 1.408.232-9100 | FAX: 408.434.1040 | 1545 Barber Lane, Milpitas, CA 95035

Date: **Jun-2015**

Subject: **Pericom Package Qualification Report**

Qual Device: **PI5A23159UE**

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

PI3C3305UE				
PI3C3306UE				
PI3CH3305UE				
PI4ULS5V102UE				
PI4ULS5V202UE				
PI5A23159UE				
PI5C3309UE				
PI6ULS5V9509UE				
PI6ULS5V9515AUE				
PI6ULS5V9517AUE				
PI6ULS5V9617AUE				
PT7C4337UE				
PT7C4337UE				
PT7C433833UE				
PT7C4563UE				
PT7C4563UE				
PT7M6709OUE				
PT7M6714CUE				
PI6ULS5V9306UE				

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Package Qualification Report

Reliability By Design

Qualification Description:

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Lot Background Information:

Qual Part Number:	PI5A23159UE	Qual Test Date:	May-2016
Supplier (Code):	SAT (S)	Die Attach Material:	84-1LMISR4
Pkg Type - Code:	MSOP-10 (U10)	Wire Size & Material:	0.8 mil PdCu
Outline Drawing:	PD-1262	Mold Compound:	EME-G600
By Extension Pkg:	U08	Leadframe Material:	Copper
		Lead Finish:	100% Matte Sn
		Date Codes	1552SG, 1601SG, 1602SG

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	253	759 / 0
CSAM	J-STD-020	No delamination of Die Top, Wire bond, Down bond areas	NA	3	22	66 / 0
PreCon UHAST	JESD22-A118	130C, 85% RH, 96Hrs, 33.3 psia (230kPa)	96 hrs	3	77	231 / 0
PreCon BHAST	JESD22-A110	130C, 85% RH, 33.3 psia (230kPa), Vmax	96 hrs	3	77	231 / 0
		130C, 85% RH, 33.3 psia (230kPa), Vmax	192 hrs	3	77	231 / 0
PreCon Temp Cycle	JESD22-A104	-65°C to +150°C	100 cycles	3	77	231 / 0
		-65°C to +150°C	500 cycles	3	77	231 / 0
HTSL (no PreCon)	JESD22-A103	1000hrs, 0V, 150°C	500 hrs	3	77	231 / 0
		1000hrs, 0V, 150°C	1000 hrs	3	77	231 / 0
Physical Dimension	JESD22-B100	Per Datasheeet	NA	3	5	15 / 0
External Visual Insp	JESD22-B101	Workmanship, Marking, etc.	NA	3	5	15 / 0
Solderability	J-STD-020 JESD22-B102	Pb-Free Solder Dip 245°C	NA	3	5	15 / 0

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@diodes.com

PERICOM A PRODUCT LINE OF DIODES INCORPORATED
ENABLING SERIAL CONNECTIVITY

Date: **May-2016**

Subject: **MSOP-10 (U10)** QBE: U08

Qual Device: **PI5A23159UE**

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

PT7M6714CUEX				
PI5A23159UEX				
PT7M6709OUEX				
PI4ULS5V102UEX				
PI6ULS5V9617AUEX				
PT7C433833UEX				
PT7C4337UEX				
PI3C3306UEX				
PI6ULS5V9515AUEX				
PI3C3305UEX				
PI4ULS5V202UEX				
PI6ULS5V9517AUEX				
PI5C3305UEX				
PI3VT3306UEX				
PI6ULS5V9509UEX				
PI5C3309UEX				
PI3VST01UEX				
PT7C4563UEX				
PI3CH3305UEX				
PI4MSD5V9540BUEX				
PT7C4339UEX				

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Package Qualification Report

Reliability By Design

Qualification Description:

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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 Part Number:	PI5A23159UE	Qual Test Date:	Apr-2016
Supplier (Code):	CAT (T)	Die Attach Material:	H9607
Pkg Type - Code:	MSOP-10 (U10)	Wire Size & Material:	0.8 mil PdCu
Outline Drawing:	PD-1262	Mold Compound:	CEL-1700-D3 (M2)
By Extension Pkg:	U08	Leadframe Material:	Copper
		Lead Finish:	100% Matte Sn
		Date Codes:	1603TG, 1604TG, 1605TG

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	253	759 / 0
CSAM	J-STD-020	No delamination of Die Top, Wire bond, Down bond areas	NA	3	22	66 / 0
PreCon UHAST	JESD22-A118	130C, 85% RH, 96Hrs, 33.3 psia (230kPa)	96 hrs	3	77	231 / 0
PreCon BHAST	JESD22-A110	130C, 85% RH, 33.3 psia (230kPa), Vmax	96 hrs	3	77	231 / 0
		130C, 85% RH, 33.3 psia (230kPa), Vmax	192 hrs	3	77	231 / 0
PreCon Temp Cycle	JESD22-A104	-65°C to +150°C	100 cycles	3	77	231 / 0
		-65°C to +150°C	500 cycles	3	77	231 / 0
HTSL (no PreCon)	JESD22-A103	1000hrs, 0V, 150°C	500 hrs	3	77	231 / 0
		1000hrs, 0V, 150°C	1000 hrs	3	77	231 / 0
Physical Dimension	JESD22-B100	Per Datasheeet	NA	3	5	15 / 0
External Visual Insp	JESD22-B101	Workmanship, Marking, etc.	NA	3	5	15 / 0
Solderability	J-STD-020 JESD22-B102	Pb-Free Solder Dip 245°C	NA	3	5	15 / 0

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@diodes.com

DIODES INCORPORATED | PERICOM A PRODUCT LINE OF DIODES INCORPORATED ENABLING SERIAL CONNECTIVITY

Date: **Apr-2016**

Subject: **MSOP-10 (U10)** QBE: U08

Qual Device: **PI5A23159UE**

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

PT7M6714CUEX				
PI5A23159UEX				
PT7M6709OUEX				
PI4ULS5V102UEX				
PI6ULS5V9617AUEX				
PT7C433833UEX				
PT7C4337UEX				
PI3C3306UEX				
PI6ULS5V9515AUEX				
PI3C3305UEX				
PI4ULS5V202UEX				
PI6ULS5V9517AUEX				
PI5C3305UEX				
PI3VT3306UEX				
PI6ULS5V9509UEX				
PI5C3309UEX				
PI3VST01UEX				
PT7C4563UEX				
PI3CH3305UEX				
PI4MSD5V9540BUEX				
PT7C4339UEX				

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