

**Please note that Cypress is an Infineon Technologies Company.**

The document following this cover page is marked as “Cypress” document as this is the company that originally developed the product. Please note that Infineon will continue to offer the product to new and existing customers as part of the Infineon product portfolio.

**Continuity of document content**

The fact that Infineon offers the following product as part of the Infineon product portfolio does not lead to any changes to this document. Future revisions will occur when appropriate, and any changes will be set out on the document history page.

**Continuity of ordering part numbers**

Infineon continues to support existing part numbers. Please continue to use the ordering part numbers listed in the datasheet for ordering.

# Cypress Semiconductor Package Qualification Report

**QTP 100401 VERSION\*D**  
**October 2014**

**68-Lead Saw QFN (Quad Flat No-Lead)**

**(8 x 8 x 1.0mm)**

**NiPdAu, MSL3, 260°C Reflow**

**CML-RA**

**FOR ANY QUESTIONS ON THIS REPORT, PLEASE CONTACT**  
**[reliability@cypress.com](mailto:reliability@cypress.com) or via a CYLINK CRM CASE**

**Prepared By:**  
Honesto Sintos  
Reliability Engineer

**Reviewed By:**  
Rene Rodgers  
Reliability Manager

**Approved By:**  
Richard Oshiro  
Reliability Director

## PACKAGE QUALIFICATION HISTORY

QUAL REPORT	DESCRIPTION OF QUALIFICATION PURPOSE	DATE COMP.
100401	Qualify 68-Lead Saw QFN (8 x 8 x 1.0 mm), NiPdAu, using Nitto GE7470 Mold Compound, QMI519 Epoxy, MSL3, 260C Reflow assembled at CML-RA	March 2011

### MAJOR PACKAGE INFORMATION USED IN THIS QUALIFICATION

<b>Package Designation:</b>	LT68A
<b>Package Outline, Type, or Name:</b>	68-Lead Saw Quad Flat No Lead (QFN)
<b>Mold Compound Name/Manufacturer:</b>	GE7470 / Nitto
<b>Mold Compound Flammability Rating:</b>	V-O per UL94
<b>Mold Compound Alpha Emission Rate:</b>	<0.1 cm <sup>2</sup> /h
<b>Oxygen Rating Index:</b>	N/A
<b>Lead Frame Material:</b>	Copper
<b>Lead Finish, Composition / Thickness:</b>	NiPdAu
<b>Die Backside Preparation Method/Metallization:</b>	Backgrind
<b>Die Separation Method:</b>	Wafer Saw
<b>Die Attach Supplier:</b>	Henkel
<b>Die Attach Material:</b>	QMI519
<b>Die Attach Method:</b>	Epoxy
<b>Bond Diagram Designation</b>	001-54870
<b>Wire Bond Method:</b>	Thermosonic
<b>Wire Material/Size:</b>	0.8mil / Au
<b>Thermal Resistance Theta JA °C/W:</b>	45°C/W
<b>Package Cross Section Yes/No:</b>	Yes
<b>Assembly Process Flow:</b>	11-21099
<b>Name/Location of Assembly (prime) facility:</b>	CML-RA
<b>MSL Level</b>	3
<b>Reflow Profile</b>	260C

### ELECTRICAL TEST / FINISH DESCRIPTION

<b>Test Location:</b>	CML-RA
-----------------------	--------

**Note:** Please contact a Cypress Representative for other packages availability.

### RELIABILITY TESTS PERFORMED PER SPECIFICATION REQUIREMENT

Stress/Test	Test Condition (Temp/Bias)	Result P/F
Temperature Cycle	MIL-STD-883C, Method 1010, Condition C, -65 C to 150 C Precondition: JESD22 Moisture Sensitivity MSL3 (192 Hrs., 30C, 60% RH)	P
Pressure Cooker Test	JESD22-A102: 121°C, 100%RH, 15 Psig Precondition: JESD22 Moisture Sensitivity MSL3 (192 Hrs., 30C, 60% RH)	P
Electrostatic Discharge Human Body Model (ESD HBM)	(750V) JEDEC EIA/JESD22-A114-B	P
Electrostatic Discharge Charge Device Model (ESD CDM)	(500V) JESD22-C101	P
High Accelerated Saturation Test (HAST)	JEDEC STD 22-A110: 130 C, 85%RH, 3.63V Precondition: JESD22 Moisture Sensitivity Level (192 Hrs., 30C, 60% RH)	P
High Temp Storage	JESD22-A103: 150C, no bias	P
Ball Shear	JESD22-B116A, Cpk : 1.33, Ppk : 1.66	P
Bond Pull	MIL-STD-883 – Method 2011, Cpk : 1.33, Ppk : 1.66	P
Constructional Analysis	Criteria: Meet external and internal characteristics of Cypress package	P
Die Shear	MIL-STD-883, Method 2019 Per die size: <ul style="list-style-type: none"> <li>&lt;3000 sq. mils = 1.2 kgf</li> <li>30001-5000 sq. mils = 1.2 kgf</li> <li>&gt;5001 sq. mils = 1.2 kgf</li> </ul>	P
Dye Penetrant Test	Test to determine the existence and extent of cracks, Criteria: No Package Crack	P
Physical Dimension	MIL-STD-1835, JESD22-B100	P
Solderability , Steam Aged	J-STD-002, JESD22-B102 95% solder coverage minimum	P
Thermal Shock	MIL-STD-883C, Method 1011, Condition B, -55 C to 125C and JESD22-A106B, Condition C, -55 C to 125C	P
X-ray	MIL-STD-883 2012	P

## Reliability Test Data

**QTP #: 100401**

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
--------	-----------	------------	----------	----------	------	-----	-------------------

### STRESS: ACOUSTIC, MSL3

CY8C3866LTI (8C38661BC)	4942670	611006167-1	CML-RA	COMP	15	0	
CY8C3866LTI (8C38661BC)	4942670	611006167-2	CML-RA	COMP	15	0	
CY8C3866LTI (8C38661BC)	4942670	611006167-3	CML-RA	COMP	15	0	

### STRESS: BOND PULL

CY8C3866LTI (8C38661BC)	4942670	611006167-1	CML-RA	COMP	10	0	
-------------------------	---------	-------------	--------	------	----	---	--

### STRESS: BALL SHEAR

CY8C3866LTI (8C38661BC)	4942670	611006167-1	CML-RA	COMP	10	0	
-------------------------	---------	-------------	--------	------	----	---	--

### STRESS: CONSTRUCTIONAL ANALYSIS

CY8C3866LTI (8C38661BC)	4942670	611006167-1	CML-RA	COMP	5	0	
-------------------------	---------	-------------	--------	------	---	---	--

### STRESS: DIE SHEAR

CY8C3866LTI (8C38661BC)	4942670	611006167-1	CML-RA	COMP	15	0	
-------------------------	---------	-------------	--------	------	----	---	--

### STRESS: DYE PENETRANT TEST

CY8C3866LTI (8C38661BC)	4942670	611006167-1	CML-RA	COMP	15	0	
CY8C3866LTI (8C38661BC)	4942670	611006167-2	CML-RA	COMP	15	0	
CY8C3866LTI (8C38661BC)	4942670	611006167-3	CML-RA	COMP	15	0	

### STRESS: ESD-CHARGE DEVICE MODEL, (500V)

CY8C3866LTI (8C38661BC)	4942670	611006167-1	CML-RA	COMP	9	0	
-------------------------	---------	-------------	--------	------	---	---	--

### STRESS: ESD-HUMAN BODY CIRCUIT PER JESD22, METHOD A114-E, 750V

CY8C3866AXI (8C38661CC)	4016039	WAFER 21	CML-RA	COMP	10	0	
-------------------------	---------	----------	--------	------	----	---	--

### STRESS: HI-ACCEL SATURATION TEST, 130C, 3.63V, 60%RH, PRE COND 192 HR 30C/60%RH, MSL3

CY8CTMA301E (8C20323D)	4937898	610944485-1	CML-RA	128	75	0	
------------------------	---------	-------------	--------	-----	----	---	--

### STRESS: HIGH TEMP STORAGE

CY7C65640A (7C65642EC)	4841890	610902567-1	CML-RA	500	76	0	
CY7C65640A (7C65642EC)	4841890	610902567-1	CML-RA	1000	76	0	

### STRESS: INTERNAL VISUAL

CY8C3866LTI (8C38661BC)	4942670	611006167-1	CML-RA	COMP	5	0	
-------------------------	---------	-------------	--------	------	---	---	--

### STRESS: PRESSURE COOKER TEST (121C, 100%RH), 15 Psig, PRE COND 192 HR 30C/60%RH (MSL3)

CY8C3866LTI (8C38661BC)	4942670	611006167-1	CML-RA	168	70	0	
-------------------------	---------	-------------	--------	-----	----	---	--

## Reliability Test Data

**QTP #: 100401**

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
--------	-----------	------------	----------	----------	------	-----	-------------------

**STRESS: PHYSICAL DIMENSION**

CY8C3866LTI (8C38661BC)	4942670	611006167-1	CML-RA	COMP	30	0	
-------------------------	---------	-------------	--------	------	----	---	--

**STRESS: SOLDERABILITY**

CY8C3866LTI (8C38661BC)	4942670	611006167-1	CML-RA	COMP	3	0	
-------------------------	---------	-------------	--------	------	---	---	--

CY8C3866LTI (8C38661BC)	4942670	611006167-2	CML-RA	COMP	3	0	
-------------------------	---------	-------------	--------	------	---	---	--

CY8C3866LTI (8C38661BC)	4942670	611006167-3	CML-RA	COMP	3	0	
-------------------------	---------	-------------	--------	------	---	---	--

**STRESS: TC COND. C -65C TO 150C, PRE COND 192 HR 30C/60%RH, MSL3**

CY8C3866LTI (8C38661BC)	4942670	611006167-1	CML-RA	500	80	0	
-------------------------	---------	-------------	--------	-----	----	---	--

CY8C3866LTI (8C38661BC)	4942670	611006167-2	CML-RA	500	80	0	
-------------------------	---------	-------------	--------	-----	----	---	--

CY8C3866LTI (8C38661BC)	4942670	611006167-3	CML-RA	500	80	0	
-------------------------	---------	-------------	--------	-----	----	---	--

**STRESS: THERMAL SHOCK**

CY8C3866LTI (8C38661BC)	4942670	611006167-1	CML-RA	200	80	0	
-------------------------	---------	-------------	--------	-----	----	---	--

CY8C3866LTI (8C38661BC)	4942670	611006167-1	CML-RA	1000	80	0	
-------------------------	---------	-------------	--------	------	----	---	--

**STRESS: X-RAY**

CY8C3866LTI (8C38661BC)	4942670	611006167-1	CML-RA	COMP	15	0	
-------------------------	---------	-------------	--------	------	----	---	--

## Document History Page

Document Title: QTP 100401: 68-Lead Saw QFN (Quad Flat No-Lead) - 8 X 8 X 1.0mm NiPdAu, MSL3, 260C  
Reflow CML-RA  
Document Number: 001-64406

Rev.	ECN No.	Orig. of Change	Description of Change
**	3041906	NRG	Initial spec release
*A	3072361	NRG	Modified HBM data to reflect 750V readpoint.
*B	3184909	NRG	Removed the word "Preliminary Qualification Report" Modified the reliability test table using the new template Updated the completion date and PCT result Updated the mold compound name to exclude the alphabetic revision.
*C	3761797	NSR	Removed reference Cypress specs in reliability tests performed table and replace with industry standards. Removed VERSION 2.0 in the title page. Removed obsolete specs.
*D	4550042	HSTO	Align qualification report based on the new template in the front page

Distribution: WEB

Posting: None