

**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# 104815 VERSION \*B  
March 2014**

**28Ld TSOP (8x13.4x1.0)  
32Ld STSOP (8x13.4x1.0)  
NiPdAu, MSL3, 235°C Reflow  
JCET-China (JT)**

**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

QTP Number	Description of Qualification Purpose	Date
104816	Qualify New Assembly Site (JCET) Qual – for TSOPI (8X13.4), STSOP (8X13.4), <b>Pb-Free</b> (KEG6000, QMI509, 0.9 mil, NiPdAu)	Mar 2011
104815	Qualify New Assembly Site (JCET) Qual – for TSOPI (8X13.4), STSOP (8X13.4), <b>Standard</b> (KEG6000, QMI509, 0.9 mil, NiPdAu)	Mar 2011

<b>MAJOR PACKAGE INFORMATION USED IN THIS QUALIFICATION</b>	
Package Designation:	ZT28R / ZB32R
Package Outline, Type, or Name:	28L TSOP / 32L STSOP (8X13.4)
Mold Compound Name/Manufacturer:	KEG6000 / Kyocera
Mold Compound Flammability Rating:	V-O per UL94
Mold Compound Alpha Emission Rate:	N/A
Oxygen Rating Index: >28%	N/A
Lead Frame Designation:	Reduced Metal Pad
Lead Frame Material:	Copper
Substrate Material:	N/A
Lead Finish, Composition / Thickness:	NiPdAu
Die Backside Preparation Method/Metallization:	Backgrind
Die Separation Method:	Wafersaw
Die Attach Supplier:	Henkel
Die Attach Material:	QMI 509
Bond Diagram Designation	10-06224 , 001-44565, 001-44583
Wire Bond Method:	Thermosonic
Wire Material/Size:	0.9mil / Au
Thermal Resistance Theta JA °C/W:	11.3 °C/W
Package Cross Section Yes/No:	Yes
Assembly Process Flow:	001-64159
Name/Location of Assembly (prime) facility:	JT-JCET China
MSL LEVEL	3
REFLOW PROFILE	235C

<b>ELECTRICAL TEST / FINISH DESCRIPTION</b>	
Test Location:	CML-R

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

## RELIABILITY TESTS PERFORMED PER SPECIFICATION REQUIREMENTS

Stress/Test	Test Condition (Temp/Bias)	Result P/F
High Accelerated Saturation Test (HAST)	130 C, 85%RH, 5.50V Precondition: JESD22 Moisture Sensitivity Level (192 Hrs., 30 C°, 60% RH)	P
Pressure Cooker Test	121 C, 100%RH, 15 PSIG Precondition: JESD22 Moisture Sensitivity Level (192 Hrs., 30 C°, 60% RH)	P
Temperature Cycle	MIL-STD-883C, Method 1010, Condition C, -65 C to 150 C Precondition: JESD22 Moisture Sensitivity Level (192 Hrs., 30 C°, 60% RH)	P
High Temp Storage	150 C, no bias	P
Electrostatic Discharge Human Body Model (ESD-HBM)	(2200V) JEDEC EIA/JESD22-A114-B	P
Electrostatic Discharge Charge Device Model (ESD-CDM)	(500V) JESD22-C101	P
Acoustic Microscopy	J-STD-020	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
Dye Penetrant Test	Criteria: No Package Crack	P
Internal Visual	MIL-STD-883-2014	P
Final Visual Inspection	JESD22-B101B	P
Lead Integrity	JESD22-B105, MIL STD 883	P
Physical Dimension	MIL-STD-1835, JESD22-B100	P
Thermal Shock	MIL-STD-883C, Method 1011, Condition B, -55 C to 125C and JESD22-A106B, Condition C, -55 C to 125C	P
Solderability, Steam Aged	, J-STD-002, JESD22-B102 95% solder coverage minimum	P
X-Ray	MIL-STD-883 - 2012	P

### Reliability Test Data

### QTP #: 104816

<i>Device</i>	<i>Fab Lot #</i>	<i>Assy Lot #</i>	<i>Assy Loc</i>	<i>Duration</i>	<i>Samp</i>	<i>Rej</i>	<i>Failure Mechanism</i>
<b>STRESS: ACOUSTIC, MSL3</b>							
7C1995SMC	4029579	611056818	JT-CHINA	COMP	15	0	
CY62128ELL (7C62128KC)	4007701	611056817	JT-CHINA	COMP	15	0	
CY62256NLL (7C62256NFK)	4038465	611056819	JT-CHINA	COMP	15	0	
<b>STRESS: BALL SHEAR</b>							
7C1995SMC	4029579	611056818	JT-CHINA	COMP	30	0	
CY62128ELL (7C62128KC)	4007701	611056817	JT-CHINA	COMP	30	0	
CY62256NLL (7C62256NFK)	4038465	611056819	JT-CHINA	COMP	30	0	
<b>STRESS: BOND PULL</b>							
7C1995SMC	4029579	611056818	JT-CHINA	COMP	30	0	
CY62128ELL (7C62128KC)	4007701	611056817	JT-CHINA	COMP	30	0	
CY62256NLL (7C62256NFK)	4038465	611056819	JT-CHINA	COMP	30	0	
<b>STRESS: CONSTRUCTIONAL ANALYSIS</b>							
7C1995SMC	4029579	611056818	JT-CHINA	COMP	5	0	
CY62128ELL (7C62128KC)	4007701	611056817	JT-CHINA	COMP	5	0	
CY62256NLL (7C62256NFK)	4038465	611056819	JT-CHINA	COMP	5	0	
<b>STRESS: DYE PENETRATION TEST</b>							
7C1995SMC	4029579	611056818	JT-CHINA	COMP	15	0	
CY62128ELL (7C62128KC)	4007701	611056817	JT-CHINA	COMP	15	0	
CY62256NLL (7C62256NFK)	4038465	611056819	JT-CHINA	COMP	15	0	
<b>STRESS: ESD-CHARGE DEVICE MODEL, (500V)</b>							
7C1995SMC	4029579	611056818	JT-CHINA	COMP	9	0	
<b>STRESS: ESD-HUMAN BODY CIRCUIT PER JESD22, METHOD A114-E, 2,200V</b>							
7C1995SMC	4029579	611056818	JT-CHINA	COMP	8	0	
<b>STRESS: HI-ACCEL SATURATION TEST, 130C, 5.50V, 60%RH, PRE COND 192 HR 30C/60%RH, MSL3</b>							
7C1995SMC	4029579	611056818	JT-CHINA	128	77	0	
<b>STRESS: HIGH TEMP STORAGE</b>							
7C1995SMC	4029579	611056818	JT-CHINA	500	77	0	
7C1995SMC	4029579	611056818	JT-CHINA	1000	77	0	

### Reliability Test Data



### QTP #: 104816

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

#### STRESS: INTERNAL VISUAL

7C1995SMC		4029579	611056818	JT-CHINA	COMP	5	0
CY62128ELL (7C62128KC)		4007701	611056817	JT-CHINA	COMP	5	0
CY62256NLL (7C62256NFK)		4038465	611056819	JT-CHINA	COMP	5	0

#### STRESS: LEAD INTEGRITY

7C1995SMC		4029579	611056818	JT-CHINA	COMP	5	0
CY62128ELL (7C62128KC)		4007701	611056817	JT-CHINA	COMP	5	0
CY62256NLL (7C62256NFK)		4038465	611056819	JT-CHINA	COMP	5	0

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

7C1995SMC		4029579	611056818	JT-CHINA	168	77	0
CY62256NLL (7C62256NFK)		4038465	611056819	JT-CHINA	168	80	0

#### STRESS: PHYSICAL DIMENSION

7C1995SMC		4029579	611056818	JT-CHINA	COMP	30	0
CY62128ELL (7C62128KC)		4007701	611056817	JT-CHINA	COMP	30	0
CY62256NLL (7C62256NFK)		4038465	611056819	JT-CHINA	COMP	30	0

#### STRESS: SOLDERABILITY

7C1995SMC		4029579	611056818	JT-CHINA	COMP	3	0
CY62128ELL (7C62128KC)		4007701	611056817	JT-CHINA	COMP	3	0
CY62256NLL (7C62256NFK)		4038465	611056819	JT-CHINA	COMP	3	0

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

7C1995SMC		4029579	611056818	JT-CHINA	500	75	0
7C1995SMC		4029579	611056818	JT-CHINA	1000	75	0
CY62128ELL (7C62128KC)		4007701	611056817	JT-CHINA	500	80	0
CY62128ELL (7C62128KC)		4007701	611056817	JT-CHINA	1000	80	0
CY62256NLL (7C62256NFK)		4038465	611056819	JT-CHINA	500	80	0
CY62256NLL (7C62256NFK)		4038465	611056819	JT-CHINA	1000	80	0

#### STRESS: THERMAL SHOCK

7C1995SMC		4029579	611056818	JT-CHINA	200	77	0
7C1995SMC		4029579	611056818	JT-CHINA	1000	77	0

### Reliability Test Data



**QTP #: 104816**

<i>Device</i>	<i>Fab Lot #</i>	<i>Assy Lot #</i>	<i>Assy Loc</i>	<i>Duration</i>	<i>Samp Rej</i>	<i>Failure Mechanism</i>
---------------	------------------	-------------------	-----------------	-----------------	-----------------	--------------------------

**STRESS: X-RAY**

7C1995SMC		4029579	611056818	JT-CHINA	COMP	15	0
CY62128ELL (7C62128KC)		4007701	611056817	JT-CHINA	COMP	15	0
CY62256NLL (7C62256NFK)		4038465	611056819	JT-CHINA	COMP	15	0



## Document History Page

Document Title: QTP 104815: 28L TSOP / 32L STSOP, NiPdAu, MSL3 235C Reflow JCET- China (JT)  
Document Number: 001-67912

Rev.	ECN No.	Orig. of Change	Description of Change
**	3186813	NRG	Initial spec release
*A	3225468	RT	Revise Mold Compound from KEG3000 to KEG6000
*B	4318101	HSTO	Align qualification report based on the new template in the front page Deleted Cypress reference specs 25-00104, 12-00292, 25-20035, 25-20027, 25-00031, 25-00014 and 25-00018 retained/replaced with industry standard.

Distribution: WEB

Posting: None