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# Cypress Semiconductor Package Qualification Report

**QTP# 104816 VERSION\*C  
March, 2014**

**28Ld TSOP (8x13.4x1.0)  
32Ld STSOP (8x13.4x1.0)  
NiPdAu, MSL3, 260°C Reflow  
JCET-China (JT)**

**FOR ANY QUESTIONS ON THIS REPORT, PLEASE CONTACT**  
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**PACKAGE QUALIFICATION HISTORY**

<b>QTP Number</b>	<b>Description of Qualification Purpose</b>	<b>Date</b>
104816	Qualify New Assembly Site (JCET) Qual – for 28Ld TSOP (8X13.4x1.0), 32Ld STSOP (8X13.4x1.0), Pb-Free (KEG6000, QMI509, 0.9 mil, NiPdAu)	Mar 2011

MAJOR PACKAGE INFORMATION USED IN THIS QUALIFICATION	
Package Designation:	ZT28R / ZB32R
Package Outline, Type, or Name:	28L TSOP / 32L STSOP (8X13.4x1.0)
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:	QMI509
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	260C

ELECTRICAL TEST / FINISH DESCRIPTION	
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)	JEDEC STD 22-A110: 130°C, 85%RH, 5.5V Precondition: JESD22 Moisture Sensitivity MSL 3 192 Hrs, 30°C /60%RH+Reflow, 260°C +0, -5°C	P
Pressure Cooker Test	JESD22-A102: 121°C, 100%RH, 15 PSIG Precondition: JESD22 Moisture Sensitivity MSL 3 192 Hrs, 30°C /60%RH+Reflow, 260°C +0, -5°C	P
Temperature Cycle	MIL-STD-883, Method 1010, Condition C, -65°C to 150°C Precondition: JESD22 Moisture Sensitivity MSL 3 192 Hrs, 30°C /60%RH+Reflow, 260°C +0, -5°C	P
High Temp Storage	JESD22-A103: 150°C, no bias	P
Electrostatic Discharge Human Body Model (ESD-HBM)	2200V JEDEC EIA/JESD22-A114	P
Electrostatic Discharge Charge Device Model (ESD-CDM)	500V JESD22-C101	P
Acoustic Microscopy	J-STD-020 Precondition: JESD22 Moisture Sensitivity MSL 3 192 Hrs, 30°C /60%RH+Reflow, 260°C +0, -5°C	P
Ball Shear	JESD22-B116, 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	Test to determine the existence and extent of cracks, Criteria: No Package Crack	P
Internal Visual	MIL-STD-883-2014	P
Final Visual Inspection	JESD22-B101	P
Lead Integrity	JESD22-B105, MIL STD 883	P
Physical Dimension	MIL-STD-1835, JESD22-B100	P
Thermal Shock	MIL-STD-883, Method 1011, Condition B, -55°C to 125°C and JESD22-A106, Condition C, -55°C to 125°C	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, 2,200V</b>							
7C1995SMC	4029579	611056818	JT-CHINA	COMP	8	0	
<b>STRESS: HI-ACCEL SATURATION TEST, 130C, 5.50V, 85%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**

<b>Device</b>	<b>Fab Lot #</b>	<b>Assy Lot #</b>	<b>Assy Loc</b>	<b>Duration</b>	<b>Samp Rej</b>	<b>Failure Mechanism</b>
<b>STRESS: INTERNAL VISUAL</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: LEAD INTEGRITY</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: PRESSURE COOKER TEST (121C, 100%RH), 15 Psig, PRE COND 192 HR 30C/60%RH (MSL3)</b>						
7C1995SMC		4029579	611056818	JT-CHINA	168	77 0
CY62256NLL (7C62256NFK)		4038465	611056819	JT-CHINA	168	80 0
<b>STRESS: PHYSICAL DIMENSION</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: SOLDERABILITY</b>						
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
<b>STRESS: TC COND. C -65C TO 150C, PRE COND 192 HR 30C/60%RH, MSL3</b>						
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
<b>STRESS: THERMAL SHOCK</b>						
7C1995SMC		4029579	611056818	JT-CHINA	200	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
<b>STRESS: X-RAY</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



## Document History Page

Document Title: QTP 104816: 28L TSOP / 32L STSOP, NiPdAu, MSL3 260C Reflow JCET- China (JT)  
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Rev.	ECN No.	Orig. of Change	Description of Change
**	3186813	NRG	Initial spec release
*A	3224002	RT	Updated Mold Compound and Added Package dimensions
*B	3225468	RT	Page 2 – Changed package dimension in table from (8x13.4) to (8x13.4x1.0) Page 3 – Changed package dimension in table from (8x13.4) to (8x13.4x1.0), Changed Mold Compound number from KEG3000 TO KEG6000
*C	4318343	JYF	Sunset review: Alignment of QTP title page and Reliability Tests Performed table to standard template.

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