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# Cypress Semiconductor Package Qualification Report

**QTP# 093403 VERSION\*A  
October 2014**

**54L TSOP II  
Pure Sn, Au wire  
MSL3, 260C Reflow  
ASE- Taiwan (G)**

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

<b>QUAL REPORT</b>	<b>DESCRIPTION OF QUALIFICATION PURPOSE</b>	<b>DATE COMP.</b>
093403	Package Qualification for 54L TSOP II Stack Die, assembled at ASE-Taiwan using FH-900 Tape Die attach Material, Hitachi CEL9200 THF Mold Compound, Pure Sn lead finished at MSL3 260C.	Nov 09

MAJOR PACKAGE INFORMATION USED IN THIS QUALIFICATION	
Package Designation:	ZW54
Package Outline, Type, or Name:	54L TSOP II
Mold Compound Name/Manufacturer:	Cel9200 / Hitachi
Mold Compound Flammability Rating:	V-0
Oxygen Rating Index:	N/A
Lead Frame Material:	Alloy 42
Lead Finish, Composition / Thickness:	Pure Sn
Die Backside Preparation Method/Metallization:	Backgrind
Die Separation Method:	100% Saw Through
Die Attach Supplier:	Hitachi
Die Attach Material:	FH-900
Die Attach Method:	Die Attach Film
Bond Diagram Designation	001-52423
Wire Bond Method:	Thermosonic
Wire Material/Size:	Au / 0.8mil
Thermal Resistance Theta JA °C/W:	44.22C/W
Package Cross Section Yes/No:	No
Name/Location of Assembly (prime) facility:	ASE-G Taiwan
MSL Level	3
Reflow Profile	260C

ELECTRICAL TEST / FINISH DESCRIPTION	
Test Location:	CML-R

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

### RELIABILITY TESTS PERFORMED PER SPECIFICATION REQUIREMENTS

Stress/Test	Test Condition (Temp/Bias)	Result P/F
Die Shear	MIL-STD-883, Method 2019	P
Bond Pull	MIL-STD-883 – Method 2011	P
Acoustic Microscopy	J-STD-020	P
Electrostatic Discharge Human Body Model (ESDHBM)	JEDEC EIA/JESD22-A114-B	P
Electrostatic Discharge Charge Device Model (ESDCDM)	JESD22-C101	P
High Temp Storage	JESD22-A103: 150 C, no bias	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
Pressure Cooker Test	JESD22-A102: 121 C, 100%RH, 15 PSIG	P
High Accelerated Saturation Test (HAST)	JEDEC STD 22-A110: 130C, 85%RH, 3.3V	P
Final Visual Inspection	JESD22-B101B	P
X-Ray	MIL-STD-883 - 2012	P
Solderability	J-STD-002, JESD22-B102	P
Ball Shear	JESD22-B116A	P
External Visual	MIL-PRF-38535, MILSTD-883, METHOD 2009	P
Internal Visual	MIL-STD-883-2014	P
Thermal Shock	MIL-STD-883C, Method 1011	P



## Reliability Test Data

**QTP #:093403**

<b>Device</b>	<b>Fab Lot #</b>	<b>Assy Lot #</b>	<b>Assy Loc</b>	<b>Duration</b>	<b>Samp</b>	<b>Rej</b>	<b>Failure Mechanism</b>
<b>STRESS: ACOUSTIC</b>							
7C1408B7CC	4919815	610926459	ASE-G	COMP	15	0	
7C1408B7CC	4917005	610926453	ASE-G	COMP	15	0	
7C1408B7CC	4917005	610926452	ASE-G	COMP	15	0	
<b>STRESS: BALL SHEAR</b>							
7C1408B7CC	4919815	610926459	ASE-G	COMP	10	0	
<b>STRESS: BOND PULL</b>							
7C1408B7CC	4919815	610926459	ASE-G	COMP	10	0	
<b>STRESS: CONSTRUCTIONAL ANALYSIS</b>							
7C1408B7CC	4919815	610926459	ASE-G	COMP	5	0	
<b>STRESS: DIE SHEAR</b>							
7C1408B7CC	4919815	610926459	ASE-G	COMP	15	0	
<b>STRESS: DYE PENETRATION</b>							
7C1408B7CC	4919815	610926459	ASE-G	COMP	15	0	
7C1408B7CC	4917005	610926453	ASE-G	COMP	15	0	
7C1408B7CC	4917005	610926452	ASE-G	COMP	15	0	
<b>STRESS: HAST</b>							
7C1408B7CC	4919815	610926459	ASE-G	128	74	0	
7C1408B7CC	4917005	610926453	ASE-G	128	77	0	
<b>STRESS: HTS</b>							
7C1408B7CC	4919815	610926459	ASE-G	500	15	0	
7C1408B7CC	4919815	610926459	ASE-G	1000	15	0	
<b>STRESS: INTERNAL VISUAL</b>							
7C1408B7CC	4919815	610926459	ASE-G	COMP	5	0	
<b>STRESS: PRESSURE COOKER TEST</b>							
7C1408B7CC	4919815	610926459	ASE-G	168	77	0	
7C1408B7CC	4917005	610926452	ASE-G	168	77	0	

## Reliability Test Data

### QTP #:093403

<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: PHYSICAL DIMENSION</b>							
7C1408B7CC	4919815	610926459	ASE-G	COMP	5	0	
<b>STRESS: SOLDERABILITY</b>							
7C1408B7CC	4919815	610926459	ASE-G	COMP	5	0	
7C1408B7CC	4917005	610926453	ASE-G	COMP	5	0	
7C1408B7CC	4917005	610926452	ASE-G	COMP	5	0	
<b>STRESS: TEMPERATURE CYCLING</b>							
7C1408B7CC	4919815	610926459	ASE-G	500	77	0	
7C1408B7CC	4919815	610926459	ASE-G	1000	77	0	
7C1408B7CC	4917005	610926453	ASE-G	500	77	0	
7C1408B7CC	4917005	610926453	ASE-G	1000	77	0	
7C1408B7CC	4917005	610926452	ASE-G	500	77	0	
7C1408B7CC	4917005	610926452	ASE-G	1000	77	0	
<b>STRESS: THERMAL SHOCK</b>							
7C1408B7CC	4919815	610926459	ASE-G	200	77	0	
7C1408B7CC	4919815	610926459	ASE-G	1000	77	0	
<b>STRESS: X-RAY</b>							
7C1408B7CC	4919815	610926459	ASE-G	COMP	15	0	
7C1408B7CC	4917005	610926453	ASE-G	COMP	15	0	



## Document History Page

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Rev.	ECN No.	Orig. of Change	Description of Change
**	4149061	HSTO	Initial Spec Release.
*A	4544959	HSTO	Align qualification report based on the new template in the front page

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