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Cypress Semiconductor Automotive Package Qualification Report

QTP# 093602 VERSION*A
October 2014

Automotive 32-Lead TSOP II (11.5 x20.8x1.2mm) Pure Sn, MSL3, 260C Reflow OSE-Taiwan (T)

FOR ANY QUESTIONS ON THIS REPORT, PLEAE CONTACT
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PACKAGE QUALIFICATION HISTORY

Qual Report	Description of Qualification Purpose	Date Comp
093602	Qualify Automotive Package 32-Lead TSOP II using device 7A1319G, Cel 9200THF Mold Compound, Ablestik 8340 DA Epoxy , Pure Sn, MSL3/260C, OSE-Taiwan (T)	Sep 09

MAJOR PACKAGE INFORMATION USED IN THIS QUALIFICATION	
Package Designation:	ZW32A
Package Outline, Type, or Name:	32-Lead TSOP II
Mold Compound Name/Manufacturer:	CEL 9200THF/ Hitachi
Mold Compound Flammability Rating:	V-O per UL94
Mold Compound Alpha Emission Rate:	Maximum 0.005 C/cm2.hr
Oxygen Rating Index:	50%
Lead Frame Material:	Copper
Lead Finish, Composition / Thickness:	Pure Sn
Die Backside Preparation Method/Metallization:	Backgrind
Die Separation Method:	Sawing
Die Attach Supplier:	Ablestik
Die Attach Material:	8340
Die Attach Method:	Epoxy
Bond Diagram Designation:	001-54166
Wire Bond Method:	Thermosonic
Wire Material/Size:	Au, 1.0mil
Thermal Resistance Theta JA °C/W:	68.67°C/W
Package Cross Section Yes/No:	Yes
Assembly Process Flow:	49-35029
Name/Location of Assembly (prime) facility:	OSE-Taiwan (T)
MSL Level:	3
Reflow Profile:	260C

ELECTRICAL TEST / FINISH DESCRIPTION	
Test Location:	CML-R

RELIABILITY TESTS PERFORMED PER SPECIFICATION REQUIREMENT

Stress/Test	Test Condition (Temp/Bias	Result P/F
High Accelerated Saturation Test (HAST)	JESD22-A110, 130C, 5.5V, 85%RH Precondition: JESD22-A113 Moisture Sensitivity MSL 3 192 Hrs, 30C/60%RH+3IR-Reflow, 260°C+0, -5°C	P
High Temperature Storage Life Test	JESD22-A103, 150 C	P
Temperature Cycle	JESD22-A104, -65°C to 150°C Precondition: JESD22-A113 Moisture Sensitivity MSL 3 192 Hrs, 30C/60%RH+3IR-Reflow, 260°C+0, -5°C	P
Pressure Cooker	JESD22-A102, 121C, 100%RH, 15 Psig Precondition: JESD22-A113 Moisture Sensitivity MSL 3 192 Hrs, 30C/60%RH+3IR-Reflow, 260°C+0, -5°C	P
Acoustic Microscopy	JEDEC JSTD-020	P
External Visual	MIL-PRF-38535, MILSTD-883, METHOD 2009	P
Solderability	JESD22-B102,	P

Reliability Test Data

QTP #:093602

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: ACOUSTIC, MSL3							
CY62148BLL (7C62148C)	4330154	610342548	T-TAIWAN	COMP	15	0	
CY62148BLL (7C62148C)	4330154	610342548M	T-TAIWAN	COMP	15	0	
CY62148BLL (7C62148C)	4330154	610342548M1	T-TAIWAN	COMP	15	0	
CY62167DV30LL (7C62164DC)	4330158	610349238	T-TAIWAN	COMP	15	0	
CY62148ELL (7C62148FC)	4745171	610813551	T-TAIWAN	COMP	15	0	
CY62148ELL (7C62148FC)	4736832	610761852	T-TAIWAN	COMP	15	0	
CY7C1019D (7C1019NC)	4709988	610743323	T-TAIWAN	COMP	15	0	
STRESS: EXTERNAL VISUAL							
CY62148BLL (7C62148C)	4330154	610342548	T-TAIWAN	COMP	15	0	
CY62148BLL (7C62148C)	4330154	610342548M	T-TAIWAN	COMP	15	0	
STRESS: PRESSURE COOKER TEST, 121C, 100%RH, 15 Psig, PRE COND 192 HR 30C/60%RH, MSL3							
CY62148BLL (7C62148C)	4330154	610342548	T-TAIWAN	168	46	0	
CY62148ELL (7C62148FC)	4745171	610813551	T-TAIWAN	168	80	0	
CY62148ELL (7C62148FC)	4736832	610761852	T-TAIWAN	168	80	0	
CY7C1019D (7C1019NC)	4709988	610743323	T-TAIWAN	168	80	0	
STRESS: HI-ACCEL SATURATION TEST, 130C, 85%RH, 5.5V, PRE COND 192 HR 30C/60%RH, MSL3							
CY62148BLL (7C62148C)	4330154	610342548	T-TAIWAN	128	50	0	
CY62148BLL (7C62148C)	4330154	610342548M	T-TAIWAN	128	45	0	
CY62148ELL (7C62148FC)	4745171	610813551	T-TAIWAN	128	80	0	
CY62148ELL (7C62148FC)	4736832	610761852	T-TAIWAN	128	72	0	
STRESS: HIGH TEMPERATURE STORAGE LIFE TEST, 150C							
CY62148ELL (7C62148FC)	4745171	610813551	T-TAIWAN	500	80	0	
CY62148ELL (7C62148FC)	4745171	610813551	T-TAIWAN	1000	80	0	
STRESS: SOLDERABILITY							
CY62148BLL (7C62148C)	4330154	610342548	T-TAIWAN	COMP	3	0	
CY62148BLL (7C62148C)	4330154	610342548M	T-TAIWAN	COMP	3	0	
CY62148BLL (7C62148C)	4330154	610342548M1	T-TAIWAN	COMP	3	0	

Reliability Test Data

QTP #:093602

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: TC COND. C -65C TO 150C, PRE COND 192 HRS 30C/60%RH, MSL3							
CY62148BLL (7C62148C)	4330154	610342548	T-TAIWAN	300	50	0	
CY62148BLL (7C62148C)	4330154	610342548	T-TAIWAN	500	50	0	
CY62148BLL (7C62148C)	4330154	610342548	T-TAIWAN	1000	50	0	
CY62148BLL (7C62148C)	4330154	610342548M	T-TAIWAN	300	45	0	
CY62148BLL (7C62148C)	4330154	610342548M	T-TAIWAN	500	45	0	
CY62148BLL (7C62148C)	4330154	610342548M	T-TAIWAN	1000	45	0	
CY62148BLL (7C62148C)	4330154	610342548M1	T-TAIWAN	300	50	0	
CY62148BLL (7C62148C)	4330154	610342548M1	T-TAIWAN	500	50	0	
CY62148BLL (7C62148C)	4330154	610342548M1	T-TAIWAN	1000	50	0	
CY62167DV30LL (7C62164DC)	4330158	610349238	T-TAIWAN	300	45	0	
CY62167DV30LL (7C62164DC)	4330158	610349238	T-TAIWAN	500	45	0	
CY62167DV30LL (7C62164DC)	4330158	610349238	T-TAIWAN	1000	45	0	
CY62148ELL (7C62148FC)	4745171	610813551	T-TAIWAN	500	80	0	
CY62148ELL (7C62148FC)	4745171	610813551	T-TAIWAN	1000	80	0	
CY62148ELL (7C62148FC)	4736832	610761852	T-TAIWAN	500	80	0	
CY62148ELL (7C62148FC)	4736832	610761852	T-TAIWAN	1000	80	0	
CY7C1019D (7C1019NC)	4709988	610743323	T-TAIWAN	500	80	0	
CY7C1019D (7C1019NC)	4709988	610743323	T-TAIWAN	1000	79	0	

Document History Page

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Document Number: 001-89579

Rev.	ECN No.	Orig. of Change	Description of Change
**	4149076	HSTO	Initial Spec Release. Initiate report as per memo HGA-956.
*A	4526481	HSTO	Align qualification report based on the new template in the front page

Distribution: WEB

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