

Cypress Semiconductor Package Qualification Report

**QTP# 150410 VERSION*A
August 2016**

**44L TSOP II
Pure Sn Leadfinish, CuPd Wire
MSL3, 260°C Reflow
JCET-China (JT)**

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

QTP Number	DESCRIPTION OF QUALIFICATION PURPOSE	Date
150410	Qualification of 44L TSOPII at JCET-China using EME-G631SH TypeQ Mold Compound, QMI 509 Die Attach Epoxy, Pure Sn Leadfinish, 0.8 mil CuPd Wire at MSL3, 260°C Reflow Temperature.	August 2015

MAJOR PACKAGE INFORMATION USED IN THIS QUALIFICATION	
Package Designation:	ZW44A
Package Outline, Type, or Name:	TSOP II (Thin Small Outline Package Type)
Mold Compound Name/Manufacturer:	EME-G631SH Type Q/Sumitomo
Mold Compound Flammability Rating:	V-0 / UL94
Oxygen Rating Index:	>28%
Leadframe Material:	Copper
Lead Finish, Composition / Thickness:	Pure Sn
Die Backside Preparation Method/Metallization:	Backgrind
Die Separation Method:	Saw
Die Attach Supplier:	Henkel
Die Attach Material:	QMI 509
Bond Diagram Designation:	001-95753
Wire Bond Method:	Thermosonic
Wire Material/Size:	CuPd, 0.8 mil
Thermal Resistance Theta JA °C/W:	68.85°C/W
Package Cross Section Yes/No:	N/A
Assembly Process Flow:	001-99393
Name/Location of Assembly (prime) facility:	JCET-China (JT)
MSL Level	3
Reflow Profile	260C

ELECTRICAL TEST / FINISH DESCRIPTION	
Test Location:	JCET-China (JT)

RELIABILITY TESTS PERFORMED PER SPECIFICATION REQUIREMENT

Stress/Test	Test Condition (Temp/Bias)	Result P/F
Acoustic Microscopy	J-STD-020 Precondition: JESD22 Moisture Sensitivity Level (192 Hrs., 30°C, 60% RH, 260°C Reflow)	P
Ball Shear	JESD22-B116	P
Bond Pull	MIL-STD-883 – Method 2011	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"> • <3000 sq. mils = 1.2 kgf • 30001-5000 sq. mils = 1.2 kgf • >5001 sq. mils = 1.2 kgf 	P
Dye Penetrant Test	Test to determine the existence and extent of cracks, Criteria: No Package Crack	P
Electrostatic Discharge Charge Device Model (ESD-CDM)	500/1000/1250V JESD22-C101	P
Final Visual	JESD22-B101	P
Highly Accelerated Saturation Test (HAST)	JEDEC STD 22-A110: 130°C, 85%RH, 5.5V Precondition: JESD22 Moisture Sensitivity Level (192 Hrs., 30°C, 60% RH, 260°C Reflow)	P
High Temperature Storage	JESD22-A103:150°C No bias	P
Internal Visual	MIL-STD-883-2014	P
Physical Dimension	MIL-STD-1835, JESD22-B100	P
Pressure Cooker Test	JESD22-A102: 121°C, 100%RH, 15 PSIG Precondition: JESD22 Moisture Sensitivity Level (192 Hrs., 30°C, 60% RH, 260°C Reflow)	P
Solderability, Steam Aged	J-STD-002, JESD22-B102 95% solder coverage minimum	P
Temperature Cycle	MIL-STD-883, Method 1010, Condition C, -65°C to 150°C Precondition: JESD22 Moisture Sensitivity Level (192 Hrs., 30°C, 60% RH, 260°C Reflow)	P
X-Ray	MIL-STD-883 - 2012	P

Reliability Test Data

QTP #: 150410

<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>
STRESS: ACOUSTIC, MSL3							
CY7S1041G30 (7CP1710414A)	9507001	611513575	JT-China	COMP	15	0	
CY621472G30 (7CP1721472A)	9507001	611515678	JT-China	COMP	15	0	
CY7S1049GE30(7CP1710496A)	9507001	611515679	JT-China	COMP	15	0	
STRESS: BALL SHEAR							
CY7S1041G30 (7CP1710414A)	9507001	611513575	JT-China	COMP	100	0	
CY621472G30 (7CP1721472A)	9507001	611515678	JT-China	COMP	100	0	
CY7S1049GE30(7CP1710496A)	9507001	611515679	JT-China	COMP	100	0	
STRESS: BOND PULL							
CY7S1041G30 (7CP1710414A)	9507001	611513575	JT-China	COMP	100	0	
CY621472G30 (7CP1721472A)	9507001	611515678	JT-China	COMP	100	0	
CY7S1049GE30(7CP1710496A)	9507001	611515679	JT-China	COMP	100	0	
STRESS: CONSTRUCTIONAL ANALYSIS							
CY7S1041G30 (7CP1710414A)	9507001	611513575	JT-China	COMP	5	0	
STRESS: DIE SHEAR							
CY7S1041G30 (7CP1710414A)	9507001	611513575	JT-China	COMP	15	0	
CY621472G30 (7CP1721472A)	9507001	611515678	JT-China	COMP	15	0	
CY7S1049GE30(7CP1710496A)	9507001	611515679	JT-China	COMP	15	0	
STRESS: DYE PENETRANT TEST							
CY7S1041G30 (7CP1710414A)	9507001	611513575	JT-China	COMP	15	0	
CY621472G30 (7CP1721472A)	9507001	611515678	JT-China	COMP	15	0	
CY7S1049GE30(7CP1710496A)	9507001	611515679	JT-China	COMP	15	0	
STRESS: ESD-CHARGE DEVICE MODEL							
CY7S1041G30 (7CP1710414A)	9507001	611513575	JT-China	500	9	0	
CY7S1041G30 (7CP1710414A)	9507001	611513575	JT-China	1000	3	0	
CY7S1041G30 (7CP1710414A)	9507001	611513575	JT-China	1250	3	0	
STRESS: FINAL VISUAL							
CY7S1041G30 (7CP1710414A)	9507001	611513575	JT-China	COMP	662	0	
CY621472G30 (7CP1721472A)	9507001	611515678	JT-China	COMP	415	0	
CY7S1049GE30(7CP1710496A)	9507001	611515679	JT-China	COMP	360	0	

Reliability Test Data

QTP #: 150410

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: HI-ACCEL SATURATION TEST, 130C, 5.5V, 85%RH, PRE COND 192 HR 30C/60%RH, MSL							
CY7S1041G30 (7CP1710414A)	9507001	611513575	JT-China	96	25	0	
STRESS: HIGH TEMPERATURE STORAGE, PLASTIC, 150C							
CY7S1041G30 (7CP1710414A)	9507001	611513575	JT-China	500	80	0	
CY7S1041G30 (7CP1710414A)	9507001	611513575	JT-China	1000	80	0	
STRESS: INTERNAL VISUAL							
CY7S1041G30 (7CP1710414A)	9507001	611513575	JT-China	COMP	5	0	
STRESS: PHYSICAL DIMENSION							
CY7S1041G30 (7CP1710414A)	9507001	611513575	JT-China	COMP	30	0	
CY621472G30 (7CP1721472A)	9507001	611515678	JT-China	COMP	30	0	
CY7S1049GE30(7CP1710496A)	9507001	611515679	JT-China	COMP	30	0	
STRESS: PRESSURE COOKER TEST (121C, 100%RH), 15 Psig, PRE COND 192 HR 30C/60%RH (MSL3)							
CY7S1041G30 (7CP1710414A)	9507001	611513575	JT-China	168	80	0	
CY7S1041G30 (7CP1710414A)	9507001	611513575	JT-China	288	80	0	
STRESS: SOLDERABILITY							
CY7S1041G30 (7CP1710414A)	9507001	611513575	JT-China	COMP	3	0	
CY621472G30 (7CP1721472A)	9507001	611515678	JT-China	COMP	3	0	
CY7S1049GE30(7CP1710496A)	9507001	611515679	JT-China	COMP	3	0	
STRESS: TEMPERATURE CYCLE COND. C -65C TO 150C, PRE COND 192 HRS 30C/60%RH, MSL3							
CY7S1041G30 (7CP1710414A)	9507001	611513575	JT-China	500	80	0	
CY7S1041G30 (7CP1710414A)	9507001	611513575	JT-China	1000	80	0	
CY621472G30 (7CP1721472A)	9507001	611515678	JT-China	500	80	0	
CY621472G30 (7CP1721472A)	9507001	611515678	JT-China	1000	80	0	
CY7S1049GE30(7CP1710496A)	9507001	611515679	JT-China	500	80	0	
STRESS: X-RAY							
CY7S1041G30 (7CP1710414A)	9507001	611513575	JT-China	COMP	15	0	
CY621472G30 (7CP1721472A)	9507001	611515678	JT-China	COMP	15	0	
CY7S1049GE30(7CP1710496A)	9507001	611515679	JT-China	COMP	15	0	

Reliability Test Data

NR #: 154005

<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>
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STRESS: HI-ACCEL SATURATION TEST, 130C, 5.5V, 85%RH, PRE COND 192 HR 30C/60%RH, MSL

CY621472G30 (7CP1721472A)	9509003	611530919	JT-China	96	25	0	
CY62147G30 (7CP172147A)	9509003	611530915	JT-China	96	25	0	
CY7C1041G30 (7CP171041A)	9509003	611530917	JT-China	96	25	0	



Document History Page

Document Title: QTP #150410: 44L TSOP II, PURE SN LEADFINISH, CUPD WIRE, MSL3, 260C REFLOW, JT-CHINA

Document Number: 001-99396

Rev.	ECN No.	Orig. of Change	Description of Change
**	4866120	JYF	Initial spec release.
*A	5420288	JYF	Added HAST data from NR154005.