

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# 104814 VERSION *D
March 2015

44-Lead TSOPII
NiPdAu, MSL3, 235°C Reflow
JCET-China (JT)

FOR ANY QUESTIONS ON THIS REPORT, PLEASE CONTACT
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
104813	Qualify New Assembly Site (JCET) Qual – for TSOPII 44L Pb-Free (KEG6000, QMI 509, 0.9 mil, NiPdAu)	Feb 2011
104814	Qualify New Assembly Site (JCET) Qual – for TSOPII 44L Standard (KEG6000, QMI 509, 0.9 mil, NiPdAu)	Feb 2011

MAJOR PACKAGE INFORMATION USED IN THIS QUALIFICATION	
Package Designation:	ZW44
Package Outline, Type, or Name:	44L TSOPII
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	10-06506 , 10-06664, 001-55882, 001-20539
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

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 Temperature Operating Life Latent Failure Rate	Dynamic Operating Condition, Vcc = 3.80V, 150 C	P
High Accelerated Saturation Test (HAST)	130 C, 85%RH, 3.65V Precondition: JESD22 Moisture Sensitivity Level (192 Hrs., 30 C°, 60% RH, 260C Reflow) Precondition: JESD22 Moisture Sensitivity Level (192 Hrs., 30 C°, 60% RH, 235C Reflow)	P
Pressure Cooker Test	121 C, 100%RH, 15 PSIG Precondition: JESD22 Moisture Sensitivity Level (192 Hrs., 30 C°, 60% RH, 260C Reflow) Precondition: JESD22 Moisture Sensitivity Level (192 Hrs., 30 C°, 60% RH, 235C Reflow)	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, 260C Reflow) Precondition: JESD22 Moisture Sensitivity Level (192 Hrs., 30 C°, 60% RH, 235C Reflow)	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 #: 104813

<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							
CY7C1041BN (7C1541SCC)	4025433	611056820	JT-CHINA	COMP	15	0	
CY7C1021DV33 (7C1321NC)	4035330	611057647	JT-CHINA	COMP	15	0	
CY14B256LA (7C1418B8CC)	4029851	611056814	JT-CHINA	COMP	15	0	
CY7C1010DV33 (7C13492NC)	4031009	611057350	JT-CHINA	COMP	15	0	
STRESS: BALL SHEAR							
CY7C1041BN (7C1541SCC)	4025433	611056820	JT-CHINA	COMP	30	0	
CY7C1021DV33 (7C1321NC)	4035330	611057647	JT-CHINA	COMP	30	0	
CY14B256LA (7C1418B8CC)	4029851	611056814	JT-CHINA	COMP	30	0	
CY7C1010DV33 (7C13492NC)	4031009	611057350	JT-CHINA	COMP	30	0	
STRESS: BOND PULL							
CY7C1041BN (7C1541SCC)	4025433	611056820	JT-CHINA	COMP	30	0	
CY7C1021DV33 (7C1321NC)	4035330	611057647	JT-CHINA	COMP	30	0	
CY14B256LA (7C1418B8CC)	4029851	611056814	JT-CHINA	COMP	30	0	
CY7C1010DV33 (7C13492NC)	4031009	611057350	JT-CHINA	COMP	30	0	
STRESS: CONSTRUCTIONAL ANALYSIS							
CY7C1041BN (7C1541SCC)	4025433	611056820	JT-CHINA	COMP	5	0	
CY7C1021DV33 (7C1321NC)	4035330	611057647	JT-CHINA	COMP	5	0	
CY14B256LA (7C1418B8CC)	4029851	611056814	JT-CHINA	COMP	5	0	
CY7C1010DV33 (7C13492NC)	4031009	611057350	JT-CHINA	COMP	5	0	
STRESS: DYE PENETRATION TEST							
CY7C1041BN (7C1541SCC)	4025433	611056820	JT-CHINA	COMP	15	0	
CY7C1021DV33 (7C1321NC)	4035330	611057647	JT-CHINA	COMP	15	0	
CY14B256LA (7C1418B8CC)	4029851	611056814	JT-CHINA	COMP	15	0	
CY7C1010DV33 (7C13492NC)	4031009	611057350	JT-CHINA	COMP	15	0	
STRESS: ESD-CHARGE DEVICE MODEL, (500V)							
CY7C1041BN (7C1541SCC)	4025433	611056820	JT-CHINA	COMP	9	0	
STRESS: ESD-HUMAN BODY CIRCUIT PER JESD22, METHOD A114-E, 2,200V							
CY7C1041BN (7C1541SCC)	4025433	611056820	JT-CHINA	COMP	8	0	

Reliability Test Data

QTP #: 104813

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: HIGH TEMP DYNAMIC OPERATING LIFE-EARLY FAILURE RATE, 150C, 3.80V, Vcc Core							
CY7C1041BN (7C1541SCC)	4025433	611056820	JT-CHINA	80	114	0	
CY7C1041BN (7C1541SCC)	4025433	611056820	JT-CHINA	500	114	0	
CY7C1021DV33 (7C1321NC)	4035330	611057647	JT-CHINA	80	116	0	
CY7C1021DV33 (7C1321NC)	4035330	611057647	JT-CHINA	500	116	0	
STRESS: HI-ACCEL SATURATION TEST, 130C, 3.65V, 60%RH, PRE COND 192 HR 30C/60%RH, MSL3							
CY7C1041BN (7C1541SCC)	4025433	611056820	JT-CHINA	128	77	0	
CY7C1021DV33 (7C1321NC)	4035330	611057647	JT-CHINA	128	77	0	
STRESS: HIGH TEMP STORAGE							
CY7C1041BN (7C1541SCC)	4025433	611056820	JT-CHINA	500	80	0	
CY7C1041BN (7C1541SCC)	4025433	611056820	JT-CHINA	1000	80	0	
STRESS: INTERNAL VISUAL							
CY7C1041BN (7C1541SCC)	4025433	611056820	JT-CHINA	COMP	5	0	
CY7C1021DV33 (7C1321NC)	4035330	611057647	JT-CHINA	COMP	5	0	
CY14B256LA (7C1418B8CC)	4029851	611056814	JT-CHINA	COMP	5	0	
CY7C1010DV33 (7C13492NC)	4031009	611057350	JT-CHINA	COMP	5	0	
STRESS: LEAD INTEGRITY							
CY7C1041BN (7C1541SCC)	4025433	611056820	JT-CHINA	COMP	5	0	
CY7C1021DV33 (7C1321NC)	4035330	611057647	JT-CHINA	COMP	5	0	
CY14B256LA (7C1418B8CC)	4029851	611056814	JT-CHINA	COMP	5	0	
CY7C1010DV33 (7C13492NC)	4031009	611057350	JT-CHINA	COMP	5	0	
STRESS: PRESSURE COOKER TEST (121C, 100%RH), 15 Psig, PRE COND 192 HR 30C/60%RH (MSL3)							
CY7C1041BN (7C1541SCC)	4025433	611056820	JT-CHINA	168	77	0	
CY14B256LA (7C1418B8CC)	4029851	611056814	JT-CHINA	168	76	0	
STRESS: PHYSICAL DIMENSION							
CY7C1041BN (7C1541SCC)	4025433	611056820	JT-CHINA	COMP	30	0	
CY7C1021DV33 (7C1321NC)	4035330	611057647	JT-CHINA	COMP	30	0	
CY14B256LA (7C1418B8CC)	4029851	611056814	JT-CHINA	COMP	30	0	
CY7C1010DV33 (7C13492NC)	4031009	611057350	JT-CHINA	COMP	30	0	

Company Confidential

A printed copy of this document is considered uncontrolled. Refer to online copy for latest revision.

Reliability Test Data

QTP #: 104813

<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: SOLDERABILITY							
CY7C1041BN (7C1541SCC)	4025433	611056820	JT-CHINA	COMP	3	0	
CY7C1021DV33 (7C1321NC)	4035330	611057647	JT-CHINA	COMP	3	0	
CY14B256LA (7C1418B8CC)	4029851	611056814	JT-CHINA	COMP	3	0	
CY7C1010DV33 (7C13492NC)	4031009	611057350	JT-CHINA	COMP	3	0	
STRESS: TC COND. C -65C TO 150C, PRE COND 192 HR 30C/60%RH, MSL3							
CY7C1041BN (7C1541SCC)	4025433	611056820	JT-CHINA	500	77	0	
CY7C1041BN (7C1541SCC)	4025433	611056820	JT-CHINA	1000	77	0	
CY7C1021DV33 (7C1321NC)	4035330	611057647	JT-CHINA	500	77	0	
CY7C1021DV33 (7C1321NC)	4035330	611057647	JT-CHINA	1000	76	0	
CY14B256LA (7C1418B8CC)	4029851	611056814	JT-CHINA	500	77	0	
CY14B256LA (7C1418B8CC)	4029851	611056814	JT-CHINA	1000	77	0	
CY7C1010DV33 (7C13492NC)	4031009	611057350	JT-CHINA	500	75	0	
CY7C1010DV33 (7C13492NC)	4031009	611057350	JT-CHINA	1000	75	0	
STRESS: THERMAL SHOCK							
CY7C1041BN (7C1541SCC)	4025433	611056820	JT-CHINA	200	77	0	
CY7C1041BN (7C1541SCC)	4025433	611056820	JT-CHINA	1000	77	0	
CY7C1021DV33 (7C1321NC)	4035330	611057647	JT-CHINA	200	76	0	
CY7C1021DV33 (7C1321NC)	4035330	611057647	JT-CHINA	1000	75	0	
STRESS: X-RAY							
CY7C1041BN (7C1541SCC)	4025433	611056820	JT-CHINA	COMP	15	0	
CY7C1021DV33 (7C1321NC)	4035330	611057647	JT-CHINA	COMP	15	0	
CY14B256LA (7C1418B8CC)	4029851	611056814	JT-CHINA	COMP	15	0	
CY7C1010DV33 (7C13492NC)	4031009	611057350	JT-CHINA	COMP	15	0	



Document History Page

Document Title: QTP 104814: 44-LEAD TSOP11 NIPDAU, MSL3 235C REFLOW JCET- CHINA (JT)
Document Number: 001-67417

Rev.	ECN No.	Orig. of Change	Description of Change
**	3157998	NRG	Initial spec release
*A	3186813	NRG	Updated the mold compound and die attach using complete material name.
*B	3224002	RT	Updated the mold compound
*C	4305104	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, 25-00018 and retained/replaced with industry standard.
*D	4685519	HSTO	Align qualification report based on the new template in the front page

Distribution: WEB

Posting: None