

Cypress Semiconductor Package Qualification Report

**QTP# 060901 VERSION 1.0
April 2006**

**≤32-Lead TSOP II
(without down bonds)
NiPdAu, MSL3, 260C Reflow
OSE-Taiwan**

CYPRESS TECHNICAL CONTACT FOR QUALIFICATION DATA:

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PACKAGE QUALIFICATION HISTORY

QUAL REPORT	DESCRIPTION OF QUALIFICATION PURPOSE	DATE COMP.
060901	≤32-Lead TSOP II (without down bonds) , NiPdAu, MSL3, 260C Reflow assembled at OSE-Taiwan	Apr 06

MAJOR PACKAGE INFORMATION USED IN THIS QUALIFICATION	
Package Designation:	ZW32
Package Outline, Type, or Name:	32-Lead Thin Small Outline. Type II
Mold Compound Name/Manufacturer:	CEL 9200HF / Hitachi
Mold Compound Flammability Rating:	UL94 – V0
Oxygen Rating Index: >28%	None
Leadframe Material:	Copper
Lead Finish, Composition / Thickness:	NiPdAu
Die Backside Preparation Method/Metallization:	Backgrind
Die Separation Method:	Saw
Die Attach Supplier:	Hitachi
Die Attach Material:	EN 4900
Die Attach Method:	Epoxy
Bond Diagram Designation	10-05353
Wire Bond Method:	Thermosonic
Wire Material/Size:	Au. 1.0 mil
Thermal Resistance Theta JA □C/W:	50.73 °C/W
Package Cross Section Yes/No:	N/A
Assembly Process Flow:	49-35029
Name/Location of Assembly (prime) facility:	OSE-Taiwan (T)

ELECTRICAL TEST / FINISH DESCRIPTION	
Test Location:	CML-R
Fault Coverage:	100%

RELIABILITY TESTS PERFORMED PER SPECIFICATION REQUIREMENTS

Stress/Test	Test Condition (Temp/Bias)	Result P/F
Temperature Cycle	MIL-STD-883C, Method 1010, Condition C, -65 C to 150 C Precondition: JESD22 Moisture Sensitivity MSL3 192 Hrs 30°C/60%RH+3IR-Reflow, 260°C+0, -5°C	P
Pressure Cooker Test	121°C, 100% Precondition: JESD22 Moisture Sensitivity MSL3 192 Hrs 30°C/60%RH+3IR-Reflow, 260°C+0, -5°C	P
High Accelerated Saturation Test (HAST)	130°C, 5.5V, 85%RH Precondition: JESD22 Moisture Sensitivity MSL3 192 Hrs 30°C/60%RH+3IR-Reflow, 260°C+0, -5°C	P
Acoustics Microscopy	Cypress Spec. 25-00104	P
Adhesion of Lead Finish	Cypress Spec. 25-00029	P
Ball Shear	Cypress Spec. 24-00018	P
Bond Pull	Cypress Spec. 12-00292	P
Cross Section	Cypress Spec. 12-00292	P
External Visual	Cypress Spec. 12-00292/25-00103	P
Internal Visual	Cypress Spec. 12-00292/25-00017	P
Lead Integrity	Cypress Spec. 25-00004	P
Physical Dimension	Cypress Spec. 25-00031	P
Solderability	Cypress Spec. 25-00018	P
Wetting Balance	Cypress Spec. 25-20037	P
X-ray	Cypress Spec. 12-00149	P

Reliability Test Data

QTP #: 060901

<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							
CY7C1019CV33 (7C1019F)	4537388	610602429	TAIWN-T	COMP	15	0	
CY7C1019CV33 (7C1019F)	4537388	610602430	TAIWN-T	COMP	15	0	
CY7C1019CV33 (7C1019F)	4537388	610602431	TAIWN-T	COMP	15	0	
STRESS: ADHESION LEAD FINISH							
CY7C1019CV33 (7C1019F)	4537388	610602429	TAIWN-T	COMP	3	0	
CY7C1019CV33 (7C1019F)	4537388	610602430	TAIWN-T	COMP	3	0	
CY7C1019CV33 (7C1019F)	4537388	610602431	TAIWN-T	COMP	3	0	
STRESS: BALL SHEAR							
CY7C1019CV33 (7C1019F)	4537388	610602429	TAIWN-T	COMP	10	0	
STRESS: BOND PULL							
CY7C1019CV33 (7C1019F)	4537388	610602429	TAIWN-T	COMP	10	0	
STRESS: CROSS SECTION							
CY7C1019CV33 (7C1019F)	4537388	610602429	TAIWN-T	COMP	5	0	
CY7C1019CV33 (7C1019F)	4537388	610602430	TAIWN-T	COMP	5	0	
CY7C1019CV33 (7C1019F)	4537388	610602431	TAIWN-T	COMP	5	0	
STRESS: EXTERNAL VISUAL							
CY7C1019CV33 (7C1019F)	4537388	610602429	TAIWN-T	COMP	15	0	
STRESS: INTERNAL VISUAL							
CY7C1019CV33 (7C1019F)	4537388	610602429	TAIWN-T	COMP	5	0	
CY7C1019CV33 (7C1019F)	4537388	610602430	TAIWN-T	COMP	5	0	
CY7C1019CV33 (7C1019F)	4537388	610602431	TAIWN-T	COMP	5	0	
STRESS: LEAD INTEGRITY							
CY7C1019CV33 (7C1019F)	4537388	610602429	TAIWN-T	COMP	3	0	
CY7C1019CV33 (7C1019F)	4537388	610602430	TAIWN-T	COMP	3	0	
CY7C1019CV33 (7C1019F)	4537388	610602431	TAIWN-T	COMP	3	0	
STRESS: HI-ACCEL SATURATION TEST, 130C, 5.5V, 85%RH, PRE COND 192HR 30C/60%RH, MSL3							
CY7C1019CV33 (7C1019F)	4537388	610602429	TAIWN-T	128	50	0	

Reliability Test Data

QTP #: 060901

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: PHYSICAL DIMENSION							
CY7C1019CV33 (7C1019F)	4537388	610602429	TAIWN-T	COMP	5	0	
CY7C1019CV33 (7C1019F)	4537388	610602430	TAIWN-T	COMP	5	0	
CY7C1019CV33 (7C1019F)	4537388	610602431	TAIWN-T	COMP	5	0	
STRESS: PRESSURE COOKER TEST, 121C, 100%RH, PRE COND 192HR 30C/60%RH, MSL3							
CY7C1019CV33 (7C1019F)	4537388	610602429	TAIWN-T	168	50	0	
STRESS: SOLDERABILITY							
CY7C1019CV33 (7C1019F)	4537388	610602429	TAIWN-T	COMP	3	0	
CY7C1019CV33 (7C1019F)	4537388	610602430	TAIWN-T	COMP	3	0	
CY7C1019CV33 (7C1019F)	4537388	610602431	TAIWN-T	COMP	3	0	
STRESS: TC COND. C -65C TO 150C, PRE COND 192HR 30C/60%RH, MSL3							
CY7C1019CV33 (7C1019F)	4537388	610602429	TAIWN-T	300	50	0	
CY7C1019CV33 (7C1019F)	4537388	610602430	TAIWN-T	300	50	0	
CY7C1019CV33 (7C1019F)	4537388	610602431	TAIWN-T	300	50	0	
STRESS: WETTING BALANCE							
CY7C1019CV33 (7C1019F)	4537388	610602429	TAIWN-T	COMP	5	0	
CY7C1019CV33 (7C1019F)	4537388	610602430	TAIWN-T	COMP	5	0	
CY7C1019CV33 (7C1019F)	4537388	610602431	TAIWN-T	COMP	5	0	
STRESS: X-RAY							
CY7C1019CV33 (7C1019F)	4537388	610602429	TAIWN-T	COMP	15	0	