

Cypress Semiconductor Package Qualification Report

**QTP# 020504 VERSION 2.0
November 2005**

**54-Lead TSOP II Package
Hitachi CEL 9200-THF-U
MSL1, 235C Reflow
ASE Taiwan (TAIWAN-G)**

CYPRESS TECHNICAL CONTACT FOR QUALIFICATION DATA:

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PACKAGE QUALIFICATION HISTORY

QUAL REPORT	DESCRIPTION OF QUALIFICATION PURPOSE	DATE COMP.
020504	54-Lead TSOP II package using Hitachi CEL9200- THF-U Molding Compound at MSL3 @ 235C Reflow, ASE Taiwan	Dec 02

MAJOR PACKAGE INFORMATION USED IN THIS QUALIFICATION	
Package Designation:	ZS544
Package Outline, Type, or Name:	54-Lead Thin Small Outline Package (TSOP II)
Mold Compound Name/Manufacturer:	Hitachi CEL 9200-THF-U
Mold Compound Flammability Rating:	V-O per UL94
Oxygen Rating Index:	>28%
Lead Frame Material:	Copper
Lead Finish, Composition / Thickness:	Solder Plate, 85%Sn, 15%Pb
Die Backside Preparation Method/Metallization:	N/A
Die Separation Method:	Wafer Saw
Die Attach Supplier:	Ablestik
Die Attach Material:	8361H
Die Attach Method:	Silver Epoxy
Bond Diagram Designation	10-04701
Wire Bond Method:	Thermosonic
Wire Material/Size:	Gold, 1.0mil
Thermal Resistance Theta JA °C/W:	57.12°C/W
Package Cross Section Yes/No:	N/A
Assembly Process Flow:	49-41028
Name/Location of Assembly (prime) facility:	ASE Taiwan (TAIWN-G)

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

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
High Temperature Operating Life Early Failure Rate	Dynamic Operating Condition, Vcc Max = 2.45V, 125°C	P
High Temperature Operating Life Latent Failure Rate	Dynamic Operating Condition, Vcc Max = 2.45V, 135°C	P
Temperature Cycle	MIL-STD-883C, Method 1010, Condition C, -65°C to 150°C Precondition: JESD22 Moisture Sensitivity MSL 3 192 Hrs, 30C/60%RH+3IR-Reflow, 235°C+0, -5°C	P
Pressure Cooker	121°C, 100%RH Precondition: JESD22 Moisture Sensitivity MSL 3 192 Hrs, 30C/60%RH+3IR-Reflow, 235°C+0, -5°C	P
High Accelerated Saturation Test (HAST)	130°C, 3.63V, 85%RH Precondition: JESD22 Moisture Sensitivity MSL 3 192 Hrs, 30C/60%RH+3IR-Reflow, 235°C+0, -5°C	P
Electrostatic Discharge Human Body Model (ESD-HBM)	2,200V MIL-STD-883, Method 3015.7	P
Electrostatic Discharge Charge Device Model (ESD-CDM)	500V Cypress Spec. 25-00020	P
Thermal Shock	-55°C to +125°C Cypress Spec. 25-00014	P
High Temperature Storage	150°C ±5°C no bias	P
Ball Shear	Cypress Spec 12-00292	P
Bond Pull	Cypress Spec 12-00292	P
External Visual	Cypress Spec 12-00292	P
Internal Visual	Cypress Spec 12-00292	P
Physical Dimensions	Cypress Spec. 25-00031	P
X-Ray	MIL-STD-883C, Method 2012, Cypress Spec 12-00292	P
Solderability	Cypress Spec. 25-00018	P
Acoustic Microscopy	Cypress Spec. 25-00104	P

Reliability Test Data

QTP #: 020504

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: ACOUSTIC - MICROSCOPE, MSL3							
CY7C1061AV33-ZC (7C1061A)	4218409	610225868	TAIWN-G	COMP	16	0	
CY7C1061AV33-ZC (7C1061A)	4223335	610233056	TAIWN-G	COMP	15	0	
CY7C1061AV33-ZC (7C1061A)	4221940	610232973	TAIWN-G	COMP	15	0	
STRESS: HIGH TEMP DYNAMIC OPERATING LIFE-EARLY FAILURE RATE, 125C, 2.45V, Vcc Max							
CY7C1061AV33-ZC (7C1061A)	4223335	610233056	TAIWN-G	96	653	0	
CY7C1061AV33-ZC (7C1061A)	4221940	610232973	TAIWN-G	96	1225	0	
STRESS: HIGH TEMP DYNAMIC OPERATING LIFE-LATENT FAILURE RATE, 135C, 2.45V, Vcc Max							
CY7C1061AV33-ZC (7C1061A)	4223335	610233056	TAIWN-G	108	400	0	
CY7C1061AV33-ZC (7C1061A)	4223335	610233056	TAIWN-G	630	400	0	
CY7C1061AV33-ZC (7C1061A)	4221940	610232973	TAIWN-G	108	400	0	
CY7C1061AV33-ZC (7C1061A)	4221940	610232973	TAIWN-G	630	400	0	
STRESS: BALL SHEAR							
CY7C1061AV33-ZC (7C1061A)	4218409	610225868	TAIWN-G	COMP	30	0	
STRESS: BOND PULL							
CY7C1061AV33-ZC (7C1061A)	4218409	610225868	TAIWN-G	COMP	30	0	
STRESS: PHYSICAL DIMENSIONS							
CY7C1061AV33-ZC (7C1061A)	4218409	610225868	TAIWN-G	COMP	5	0	
STRESS: EXTERNAL VISUAL							
CY7C1061AV33-ZC (7C1061A)	4218409	610225868	TAIWN-G	COMP	20	0	
STRESS: INTERNAL VISUAL							
CY7C1061AV33-ZC (7C1061A)	4218409	610225868	TAIWN-G	COMP	20	0	
STRESS: ESD-CHARGE DEVICE MODEL, 500V							
CY7C1061AV33-ZC (7C1061A)	4228555	610244242	TAIWN-G	COMP	9	0	
STRESS: ESD-HUMAN BODY CIRCUIT PER MIL STD 883, METHOD 3015, 2,200V							
CY7C1061AV33-ZC (7C1061A)	4228555	610244242	TAIWN-G	COMP	9	0	
STRESS: STATIC LATCH-UP TESTING, 125C, 10V, and +/300mA							
CY7C1061AV33-ZC (7C1061A)	4228555	610244242	TAIWN-G	COMP	3	0	

Reliability Test Data

QTP #: 020504

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, MSL3							
CY7C1061AV33-ZC (7C1061A)	4218409	610225868	TAIWN-G	128	45	0	
CY7C1061AV33-ZC (7C1061A)	4223335	610233056	TAIWN-G	128	45	0	
STRESS: PRESSURE COOKER TEST, 121C, 100%RH, PRE COND 192 HR 30C/60%RH, MSL3							
CY7C1061AV33-ZC (7C1061A)	4218409	610225868	TAIWN-G	168	43	0	
CY7C1061AV33-ZC (7C1061A)	4223335	610233056	TAIWN-G	168	45	0	
STRESS: THERMAL SHOCK, +125C/-55C							
CY7C1061AV33-ZC (7C1061A)	4218409	610225868	TAIWN-G	100	45	0	
CY7C1061AV33-ZC (7C1061A)	4218409	610225868	TAIWN-G	200	44	0	
STRESS: HIGH TEMPERATURE STORAGE, PLASTIC, 150C							
CY7C1061AV33-ZC (7C1061A)	4218409	610225868	TAIWN-G	500	45	0	
CY7C1061AV33-ZC (7C1061A)	4218409	610225868	TAIWN-G	1000	45	0	
STRESS: TC COND. C -65C TO 150C, PRE COND 192 HR 30C/60%RH, MSL3							
CY7C1061AV33-ZC (7C1061A)	4218409	610225868	TAIWN-G	300	45	0	
CY7C1061AV33-ZC (7C1061A)	4218409	610225868	TAIWN-G	500	45	0	
CY7C1061AV33-ZC (7C1061A)	4218409	610225868	TAIWN-G	1000	45	0	
CY7C1061AV33-ZC (7C1061A)	4223335	610233056	TAIWN-G	300	45	0	
CY7C1061AV33-ZC (7C1061A)	4223335	610233056	TAIWN-G	500	45	0	
CY7C1061AV33-ZC (7C1061A)	4223335	610233056	TAIWN-G	1000	45	0	
CY7C1061AV33-ZC (7C1061A)	4221940	610232973	TAIWN-G	300	45	0	
CY7C1061AV33-ZC (7C1061A)	4221940	610232973	TAIWN-G	500	45	0	
CY7C1061AV33-ZC (7C1061A)	4221940	610232973	TAIWN-G	1000	45	0	
STRESS: SOLDERABILITY							
CY7C1061AV33-ZC (7C1061A)	4218409	610225868	TAIWN-G	COMP	3	0	
STRESS: X-RAY							
CY7C1061AV33-ZC (7C1061A)	4218409	610225868	TAIWN-G	COMP	15	0	