

Cypress Semiconductor Package Qualification Report

**QTP# 042905 VERSION 2.0
March 2005**

**48-Ball Very Thin Fine Pitch Ball Grid Array
(VFBGA) (6 x 8 x 1.0mm)
SnAgCu, MSL3, 260C Reflow
(AEC-Q100 Automotive)
ASE-Taiwan (G)**

CYPRESS TECHNICAL CONTACT FOR QUALIFICATION DATA:

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PACKAGE QUALIFICATION HISTORY

Qual Report	Description of Qualification Purpose	Date Comp
042905	48-Ball VFBGA (6 x 8 x 1.0) Packages, SnAgCu, MSL3, 260C Reflow, AEC-Q100 Automotive assembled in ASE-Taiwan using CY62137CV30LL	Feb 05

MAJOR PACKAGE INFORMATION USED IN THIS QUALIFICATION	
Package Designation:	BZ48
Package Outline, Type, or Name:	48-ball VFBGA (6 x 8 x 1.0mm)
Mold Compound Name/Manufacturer:	Shinetsu KMC211AA-EC
Mold Compound Flammability Rating:	V-O per UL94
Oxygen Rating Index:	>28%
Substrate Material:	BT Resin
Lead Finish, Composition / Thickness:	SnAgCu
Die Backside Preparation Method/Metallization:	N/A
Die Separation Method:	Wafer Saw
Die Attach Supplier:	Ablestik 2025D
Die Attach Material:	100A
Die Attach Method:	Silver Epoxy
Bond Diagram Designation:	10-05976
Wire Bond Method:	Thermosonic
Wire Material/Size:	Au, 1.0 mil
Thermal Resistance Theta JA °C/W:	57 °C/W
Package Cross Section Yes/No:	N/A
Assembly Process Flow:	49-00111
Name/Location of Assembly (prime) facility:	ASE-Taiwan (G)

ELECTRICAL TEST / FINISH DESCRIPTION	
Test Location:	Cypress Philippines (CML-R)
Fault Coverage:	100%

RELIABILITY TESTS PERFORMED PER SPECIFICATION REQUIREMENTS

Stress/Test	Test Condition (Temp/Bias)	Result P/F
Ball Shear	Cypress Spec 24-00018	P
Bond Pull	Cypress Spec 24-00002	P
External Visual	Cypress Spec 25-00038	P
High Temp Storage	150 C, no bias	P
Physical Dimensions	Cypress Spec. 25-00031	P
High Accelerated Saturation	130°C, 3.6V, 85%RH Precondition: JESD22 Moisture Sensitivity MSL3 192 Hrs., 30°C/60%RH+3IR-Reflow, 260°C +5, -0°C	P
Pressure Cooker	121C, 100%RH Precondition: JESD22 Moisture Sensitivity MSL3 192 Hrs., 30°C/60%RH+3IR-Reflow, 260°C +5, -0°C	P
Solderability	Cypress Spec. 25-00018	P
Temperature Cycle	JEDEC22, Condition C, -65°C to 150°C Precondition: JESD22 Moisture Sensitivity MSL3 192 Hrs., 30°C/60%RH+3IR-Reflow, 260°C +5, -0°C	P

Reliability Test Data

QTP #: 042905

<i>Device</i>	<i>Fab Lot #</i>	<i>Assy Lot #</i>	<i>Ass Loc</i>	<i>Duration</i>	<i>Samp</i>	<i>Rej</i>	<i>Failure Mechanism</i>
STRESS: BALL SHEAR							
CY62137CV30LL (7C62137C)	4419854	610440463	TAIWN-G	COMP	10	0	
STRESS: BOND PULL							
CY62137CV30LL (7C62137C)	4419854	610440463	TAIWN-G	COMP	5	0	
STRESS: EXTERNAL VISUAL							
CY62137CV30LL (7C62137C)	4419854	610440463	TAIWN-G	COMP	297	0	
STRESS: HI-ACCEL SATURATION TEST (130C, 85%RH, 3.6V), PRE COND 192 HR 30C/60%RH, MSL3							
CY62137CV30LL (7C62137C)	4419854	610440463	TAIWN-G	96	85	0	
CY62137CV30LL (7C62137C)	4419854	610440463	TAIWN-G	128	85	0	
STRESS: HIGH TEMPERATURE STORAGE, no bias							
CY62137CV30LL (7C62137C)	4419854	610440463	TAIWN-G	1000	49	0	
STRESS: PHYSICAL DIMENSIONS							
CY62137CV30LL (7C62137C)	4419854	610440463	TAIWN-G	COMP	10	0	
STRESS: PRESSURE COOKER TEST (121C, 100%RH), PRE COND 192 HR 30C/60%RH, MSL3							
CY62137CV30LL (7C62137C)	4419854	610440463	TAIWN-G	96	78	0	
CY62137CV30LL (7C62137C)	4419854	610440463	TAIWN-G	168	78	0	
STRESS: SOLDERABILITY							
CY62137CV30LL (7C62137C)	4419854	610440463	TAIWN-G	COMP	10	0	
STRESS: TC COND. C -65C TO 150C, PRECONDITION 192 HRS 30C/60%RH, MSL3							
CY62137CV30LL (7C62137C)	4419854	610440463	TAIWN-G	500	50	0	
CY62137CV30LL (7C62137C)	4419854	610440463	TAIWN-G	1000	43	0	