

Cypress Semiconductor Package Qualification Report

**QTP# 99505 VERSION 1.1
November, 2000**

**48-Ball Fine-Pitch Ball Grid Array (FBGA)
7 X 7 MM
FIC TAIWAN**

CYPRESS TECHNICAL CONTACT FOR QUALITIFICATION DATA:

Ed Russell
Reliability Director
(408) 432-7069

Kim-Ngan Nguyen
Staff Reliability Engineer
(408) 943-2136

MAJOR PACKAGE INFORMATION USED IN THIS QUALIFICATION	
Package Designation:	BA48S
Package Outline, Type, or Name:	48-ball Fine Pitch Ball Grid Array (FBGA)
Mold Compound Name/Manufacturer:	Plaskon SMT-B-1
Mold Compound Flammability Rating:	V-O per UL94
Oxygen Rating Index:	> 28%
Lead Frame Designation:	BA
Substrate Material:	BT Resin
Lead Finish, Composition / Thickness:	63%Sn, 37%Pb
Die Backside Preparation Method/Metallization:	N/A
Die Separation Method:	Wafer Saw
Die Attach Supplier:	Ablestik
Die Attach Material:	8355F
Bond Diagram Designation	10-03495
Wire Bond Method:	Thermosonic
Wire Material/Size:	Au, ≤1.0um
Thermal Resistance Theta JA °C/W:	54.9°C/W
Package Cross Section Yes/No:	N/A
Assembly Process Flow:	49-63002M
Name/Location of Assembly (prime) facility:	FIC Taiwan (TAIWN-G)

ELECTRICAL TEST / FINISH DESCRIPTION	
Test Location:	FIC Taiwan (TAIWN-G)
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 Latent Failure Rate	Dynamic Operating Condition, Vcc = 3.8V, 150°C	P
High Accelerated Saturation Test	130°C/85%RH/3.63V Precondition: JESD22 Moisture Sensitivity Level 192 Hrs., 30°C/60%RH+ 3IR-Reflow, 220°C+ 5, -0°C	P
Temperature Cycle	JEDEC22, Condition B, -55°C to 125°C Precondition: JESD22 Moisture Sensitivity Level 3 192 Hrs., 30°C/60%RH+ 3IR-Reflow, 220°C+ 5, -0°C	P
Pressure Cooker Test	121 C, 100%RH Precondition: JESD22 Moisture Sensitivity Level 3 192 Hrs., 30°C/60%RH+ 3IR-Reflow, 220°C+ 5, -0°C	P
Thermal Shock	Cypress Spec 25-00014 (150°C/-55C)	P
High Temperature Storage	150°C ± 5°C, no bias	P
Internal Visual	Cypress Spec 25-00017	P
External Visual	Cypress Spec 25-00038	P
Die Shear	Cypress Spec 12-00292	P
Ball Shear	Cypress Spec 12-00292	P
Bond Pull	Cypress Spec 12-00292	P
X-Ray	Cypress Spec 12-00292	P
Acoustic Microscopy Test (C-SAM)	Cypress Spec 25-000104	P

Reliability Test Data

QTP #: 99505

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: ACOUSTIC							
CY62137VL-BAC	4934405	619934372	TAIWN-GF	COMP	15	0	
CY62137VL-BAC	4934441	619934371	TAIWN-GF	COMP	15	0	
CY62137VL-BAC	4936669	619934369	TAIWN-GF	COMP	15	0	
STRESS: AGE BALL SHEAR							
CY62137VL-BAC	4936669	619934369	TAIWN-GF	COMP	10	0	
STRESS: BOND PULL							
CY62137VL-BAC	4936669	619934369	TAIWN-GF	COMP	15	0	
STRESS: DIE SHEAR							
CY62137VL-BAC	4936669	619934369	TAIWN-GF	COMP	15	0	
STRESS: EXTERNAL VISUAL							
CY62137VL-BAC	4936669	619934369	TAIWN-GF	COMP	15	0	
STRESS: HI-ACCEL SATURATION TEST (130C, 85%RH, 3.63V), PRE COND 192 HR 30C/60%RH							
CY62137VL-BAC	4934405	619934372	TAIWN-GF	128	54	0	
CY62137VL-BAC	4936669	619934369	TAIWN-GF	128	57	0	
STRESS: HIGH TEMPERATURE STORAGE , 150C							
CY62137VL-BAC	4936669	619934369	TAIWN-GF	500	48	0	
CY62137VL-BAC	4936669	619934369	TAIWN-GF	1000	48	0	
STRESS: INTERNAL VISUAL							
CY62137VL-BAC	4934405	619934372	TAIWN-GF	COMP	5	0	
CY62137VL-BAC	4934441	619934371	TAIWN-GF	COMP	5	0	
CY62137VL-BAC	4936669	619934369	TAIWN-GF	COMP	5	0	

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STRESS: HIGH TEMP DYNAMIC OPERATING LIFE-LATENT FAILURE RATE (150C, 3.8V, Vcc Max)

CY7C62137VL-BACB	4934405	619934372	TAIWN-GF	80	130	0	
CY7C62137VL-BACB	4934405	619934372	TAIWN-GF	500	130	0	
CY7C62137VL-BACB	4934441	619934371	TAIWN-GF	80	130	0	
CY7C62137VL-BACB	4934441	619934371	TAIWN-GF	500	128	0	
CY7C62137VL-BACB	4936669	619934369	TAIWN-GF	80	129	1	1Unknown Cause
CY7C62137VL-BACB	4936669	619934369	TAIWN-GF	500	129	0	

STRESS: PRESSURE COOKER TEST (121C, 100%RH), PRE COND 192 HR 30C/60%RH

CY62137VL-BAC	4936669	619934369	TAIWN-GF	168	48	0	
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STRESS: TC JEDDEC22 CONDITION B. -40C TO 125C, PRECOND. 192 HRS 30C/60%RH

CY62137VL-BAC	4934405	619934372	TAIWN-GF	500	48	0	
CY62137VL-BAC	4934405	619934372	TAIWN-GF	1500	47	0	
CY62137VL-BAC	4934441	619934371	TAIWN-GF	500	50	0	
CY62137VL-BAC	4934441	619934371	TAIWN-GF	1500	49	0	
CY62137VL-BAC	4936669	619934369	TAIWN-GF	500	48	0	
CY62137VL-BAC	4936669	619934369	TAIWN-GF	1500	48	0	
CY62137VL-BAC	4936669	619934369	TAIWN-GF	2000	46	0	

STRESS: THERMAL SHOCK, CONDITION B (150C/-55C)

CY62137VL-BAC	4936669	619934369	TAIWN-GF	100	48	0	
CY62137VL-BAC	4936669	619934369	TAIWN-GF	200	46	0	

STRESS: X-RAY

CY62137VL-BAC	4934405	619934372	TAIWN-GF	COMP	15	0	
CY62137VL-BAC	4934441	619934371	TAIWN-GF	COMP	15	0	
CY62137VL-BAC	4936669	619934369	TAIWN-GF	COMP	15	0	