

Cypress Semiconductor Package Qualification Report

**QTP# 065103 VERSION 1.1
February 2007**

48-Ball VFBGA

(6 x 8 x 1.0mm)

Pb-Free, MSL3, 260°C Reflow

AIT-Indonesia (AT)

CYPRESS TECHNICAL CONTACT FOR QUALIFICATION DATA:

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PACKAGE QUALIFICATION HISTORY

Qual Report	Description of Qualification Purpose	Date Comp
065103	48-Ball VFBGA (6 x 8 x 1.0mm), Pb-Free, MSL3, 260C Reflow, assembled at AIT-Indonesia	Feb 07

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:	EME-G760V
Mold Compound Flammability Rating:	V-O per UL94
Oxygen Rating Index:	N/A
Substrate Material:	BT Resin
Lead Finish, Composition / Thickness:	Sn (98.5%), Ag (1%), Cu (0.5%)
Die Backside Preparation Method/Metallization:	Backgrinding
Die Separation Method:	Wafer Saw
Die Attach Supplier:	Ablestik
Die Attach Material:	Alebond 2000B
Die Attach Method:	Epoxy
Bond Diagram Designation:	001-10370
Wire Bond Method:	Thermosonic
Wire Material/Size:	Au. 0.8mil
Thermal Resistance Theta JA °C/W:	38.5°C/W
Package Cross Section Yes/No:	N/A
Assembly Process Flow:	001-08480
Name/Location of Assembly (prime) facility:	AIT-Indonesia (AT)
MSL Level	3
Reflow Profile	260C

ELECTRICAL TEST / FINISH DESCRIPTION	
Test Location:	CML-R, CML-RA, CHIPMOS-GO

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
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	121C, 100%RH, 15 Psig Precondition: JESD22 Moisture Sensitivity MSL3 192 Hrs., 30°C/60%RH+3IR-Reflow, 260°C+0, -5°C	P
High Accelerated Saturation	130°C, 3.63V, 85%RH Precondition: JESD22 Moisture Sensitivity MSL3 192 Hrs., 30°C/60%RH+3IR-Reflow, 260°C+0, -5°C	P
Electrostatic Discharge Human Body Model (ESD-HBM)	2,200V JESD22, Method A114-B	P
Electrostatic Discharge Charge Device Model (ESD-CDM)	500V Cypress Spec. 25-00020	P
Acoustic Microscopy	Cypress Spec. 25-00104	P
Ball Shear	Cypress Spec. 2400018	P
Bond Pull	Cypress Spec. 12-00292	P
Constructional Analysis	Cypress Spec. 25-00035	P
Die Shear	Cypress Spec. 12-00292	P
Dye Penetration	Cypress Spec. 25-00046	P
External Visual	Cypress Spec. 12-00292/25-00103	P
High Temperature Storage	150C, no bias	P
Internal Visual	Cypress Spec. 12-00292	P
Physical Dimensions	Cypress Spec. 25-00031	P
Thermal Shock	125C, -55C Cypress Spec. 25-00014	P
X-ray	Cypress Spec. 12-00292	P

Reliability Test Data

QTP #: 065103

<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							
CYK256K16SCBU (K256K6C9B)	8612038	610661828	AT-INDNS	COMP	15	0	
CYK256K16SCBU (K256K6C9B)	8612038	610661827	AT-INDNS	COMP	15	0	
CYK256K16SCBU (K256K6C9B)	8612038	610661829	AT-INDNS	COMP	15	0	
STRESS: BALL SHEAR							
CYK256K16SCBU (K256K6C9B)	8615067	610649513	AT-INDNS	COMP	10	0	
STRESS: BOND PULL							
CYK256K16SCBU (K256K6C9B)	8615067	610649513	AT-INDNS	COMP	10	0	
STRESS: CONSTRUCTIONAL ANALYSIS							
CYK256K16SCBU (K256K6C9B)	8612038	610661828	AT-INDNS	COMP	1	0	
STRESS: DIE SHEAR							
CYK256K16SCBU (K256K6C9B)	8615067	610649513	AT-INDNS	COMP	15	0	
STRESS: DYE PENETRATION							
CYK256K16SCBU (K256K6C9B)	8612038	610661828	AT-INDNS	COMP	15	0	
CYK256K16SCBU (K256K6C9B)	8612038	610661827	AT-INDNS	COMP	15	0	
CYK256K16SCBU (K256K6C9B)	8612038	610661829	AT-INDNS	COMP	15	0	
STRESS: ESD-CHARGE DEVICE MODEL, 500V							
CYK256K16SCBU (K256K6C9B)	8612038	610661828	AT-INDNS	COMP	9	0	
STRESS: ESD-HUMAN BOD CIRCUIT PER JESD22, METHOD A114-B, 2,200V							
CYK256K16SCBU (K256K6C9B)	8612038	610661828	AT-INDNS	COMP	8	0	
STRESS: EXTERNAL VISUAL							
CYK256K16SCBU (K256K6C9B)	8615067	610649513	AT-INDNS	COMP	15	0	
STRESS: HI-ACCEL SATURATION TEST. 130C, 3.63V, 85%RH, PRE COND 192 HR 30C/60%RH, MSL3							
CYK256K16SCBU (K256K6C9B)	8612038	610661828	AT-INDNS	128	45	0	
STRESS: HIGH TEMPERATURE STORAGE, 150C, no bias							
CY7C68013A (7C82000B)	8612038	610640180	AT-INDNS	500	50	0	
CY7C68013A (7C82000B)	8612038	610640180	AT-INDNS	1000	45	0	
STRESS: INTERNAL VISUAL							
CYK256K16SCBU (K256K6C9B)	8615067	610649513	AT-INDNS	COMP	5	0	

Reliability Test Data

QTP #: 065103

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: PRESSURE COOKER TEST, 121C, 100%RH, 15 Psig, PRE COND 192 HR 30C/60%RH, MSL3							
CYK256K16SCBU (K256K6C9B)	8612038	610661828	AT-INDNS	168	50	0	
STRESS: PHYSICAL DIMENSIONS							
CYK256K16SCBU (K256K6C9B)	8615067	610649513	AT-INDNS	COMP	5	0	
STRESS: TC COND. C -65C TO 150C, PRE COND 192 HR 30C/60%RH, MSL3							
CYK256K16SCBU (K256K6C9B)	8612038	610661828	AT-INDNS	300	49	0	
CYK256K16SCBU (K256K6C9B)	8612038	610661827	AT-INDNS	300	49	0	
CYK256K16SCBU (K256K6C9B)	8612038	610661829	AT-INDNS	300	45	0	
STRESS: THERMAL SHOCK							
CYK256K16SCBU (K256K6C9B)	8612038	610661828	AT-INDNS	100	44	0	
CYK256K16SCBU (K256K6C9B)	8612038	610661828	AT-INDNS	200	43	0	
STRESS: X-RAY							
CYK256K16SCBU (K256K6C9B)	8612038	610661828	AT-INDNS	COMP	15	0	
CYK256K16SCBU (K256K6C9B)	8615067	610649513	AT-INDNS	COMP	15	0	