Cypress Semiconductor
Package Qualification Report

QTP# 071202VERSION 1.0
May 2007

100-Ball VFBGA

(6 x 6 x 1.0mm)

Pb-Free, MSL3, 260°C Reflow

AIT-Indonesia

CYPRESS TECHNICAL CONTACT FOR QUALIFICATION DATA:

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PACKAGE QUALIFICATION HISTORY

QUAL REPORT	DESCRIPTION OF QUALIFICATION PURPOSE	DATE COMP.
071202	100-Ball VFBGA (6 x 6 x 1mm), Pb-Free, MSL3 @260°C Reflow using Ablebond 2000B Epoxy, EME-G760V Mold Compound, SnAgCu, MSL3, 260C Reflow assembled at AIT-Indonesia	May 07

MAJOR PACKAGE INFORMATION USED IN THIS QUALIFICATION	
Package Designation:	BZ100
Package Outline, Type, or Name:	100-Ball VFBGA
Mold Compound Name/Manufacturer:	EME-G760V
Mold Compound Flammability Rating:	V-0 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:	Backgrind
Die Separation Method:	100% Saw
Die Attach Supplier:	Ablestik
Die Attach Material:	Ablebond 2000B
Die Attach Method:	Epoxy
Bond Diagram Designation:	001-11472
Wire Bond Method:	Thermosonic
Wire Material/Size:	Au. 0.8mil
Thermal Resistance Theta JA □C/W:	45.8 °C/W
Package Cross Section Yes/No:	N/A
Assembly Process Flow:	001-08480
Name/Location of Assembly (prime) facility:	AIT-Indonesia
MSL Level	3
Reflow Profile	260C

ELECTRICAL TEST / FINISH DESCRIPTION	
Test Location:	CML-R

RELIABILITY TESTS PERFORMED PER SPECIFICATION REQUIREMENTS

Stress/Test	Test Condition (Temp/Bias)	Result P/F
Pressure Cooker Test	121°C, 100%RH, 15 Psig Precondition: JESD22 Moisture Sensitivity MSL3 192 Hrs 85°C/85%RH+3IR-Reflow, **260°C**+0, -5°C	P
Temperature Cycle	MIL-STD-883C, Method 1010, Condition C, -65°C to 150C Precondition: JESD22 Moisture Sensitivity MSL3 192 Hrs 85°C/85%RH+3IR-Reflow, **260°C**+0, -5°C	P
Electrostatic Discharge Charge Device Model (ESD-CDM)	500V Cypress Spec. 25-00020	P
Electrostatic Discharge Human Body Model (ESD-HBM)	2,200V JESD-22 Method A114-B	P
Acoustic Microscopy Test	Cypress Spec. 25-00104	P
Ball Shear	Cypress Spec. 24-00018	P
Bond Pull	Cypress Spec. 12-00292	P
Constructional Analysis	Cypress Spec. 25-20035	P
Die Shear	Cypress Spec. 12-00215	P
Dye Penetration	Cypress Spec. 25-00046	P
External Visual	Cypress Spec. 12-00292/12-00103	P
High Temperature Storage	150C, no bias	P
Internal Visual	Cypress Spec. 25-00017	P
Physical Dimension	Cypress Spec. 25-00031	P
Solderability	Cypress Spec. 25-00018	P
Thermal Shock	Cypress Spec. 25-00014	P
X-ray	MIL-STD-883-2012	P

Reliability Test Data

QTP #: 071202

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: ACOUSTIC-MSL3							
CYWB0124AB (7C07100A)	4638176	*610670188*	AT-INDNS	COMP	15	0	
CYWB0124AB (7C07100A)	4638176	*610670189*	AT-INDNS	COMP	15	0	
CYWB0124AB (7C07100A)	4638176	*610671945*	AT-INDNS	COMP	15	0	
STRESS: BALL SHEAR							
CYWB0124AB (7C07100A)	4638176	*610670188*	AT-INDNS	COMP	10	0	
STRESS: BOND PULL							
CYWB0124AB (7C07100A)	4638176	*610670188*	AT-INDNS	COMP	10	0	
STRESS: CONSTRUCTIONAL ANALYSIS							
CYWB0124AB (7C07100A)	4638176	*610670188*	AT-INDNS	COMP	1	0	
STRESS: DIE SHEAR							
CYWB0124AB (7C07100A)	4638176	*610670188*	AT-INDNS	COMP	15	0	
STRESS: DYE PENETRATION							
CYWB0124AB (7C07100A)	4638176	*610670188*	AT-INDNS	COMP	15	0	
CYWB0124AB (7C07100A)	4638176	*610670189*	AT-INDNS	COMP	15	0	
CYWB0124AB (7C07100A)	4638176	*610671945*	AT-INDNS	COMP	15	0	
STRESS: EXTERNAL VISUAL							
CYWB0124AB (7C07100A)	4638176	*610670188*	AT-INDNS	COMP	15	0	
STRESS: ESD-CHARGE DEVICE MODEL (500V)							
CYWB0124AB (7C07100A)	4638176	*610670188*	AT-INDNS	COMP	9	0	
STRESS: ESD-HUMAN BODY CIRCUIT PER JESD22, METHOD A114-B, 2,200V							
CYWB0124AB (7C07100A)	4638176	*610670188*	AT-INDNS	COMP	8	0	
STRESS: HIGH TEMPERATURE STORAGE, 150C, no bias							
CY7C68013A (7C682000B)	4610631	*610640180*	AT-INDNS	500	45	0	
CY7C68013A (7C682000B)	4610631	*610640180*	AT-INDNS	1000	44	0	
STRESS: PHYSICAL DIMENSIONS							
CYWB0124AB (7C07100A)	4638176	*610670188*	AT-INDNS	COMP	10	0	
CYWB0124AB (7C07100A)	4638176	*610670189*	AT-INDNS	COMP	10	0	
CYWB0124AB (7C07100A)	4638176	*610671945*	AT-INDNS	COMP	10	0	

Reliability Test Data

QTP #: 071202

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: INTERNAL VISUAL							
CYWB0124AB (7C07100A)	4638176	*610670188*	AT-INDNS	COMP	5	0	
STRESS: PRESSURE COOKER TEST (121C, 100%RH), PRE COND 192 HRS, 30C/60%RH, MSL3							
CYWB0124AB (7C07100A)	4638176	*610670188*	AT-INDNS	168	77	0	
STRESS: TC COND. C -65C TO 150C, PRE COND 192 HRS, 30C/60%RH, MSL3							
CYWB0124AB (7C07100A)	4638176	*610670188*	AT-INDNS	500	77	0	
CYWB0124AB (7C07100A)	4638176	*610670189*	AT-INDNS	500	77	0	
CYWB0124AB (7C07100A)	4638176	*610671945*	AT-INDNS	500	76	0	
STRESS: THERMAL SHOCK							
CYWB0124AB (7C07100A)	4638176	*610670188*	AT-INDNS	200	77	0	
CYWB0124AB (7C07100A)	4638176	*610670188*	AT-INDNS	1000	76	0	
STRESS: SOLDERABILITY							
CYWB0124AB (7C07100A)	4638176	*610670188*	AT-INDNS	COMP	5	0	
CYWB0124AB (7C07100A)	4638176	*610670189*	AT-INDNS	COMP	5	0	
CYWB0124AB (7C07100A)	4638176	*610671945*	AT-INDNS	COMP	5	0	
STRESS: X-RAY							
CYWB0124AB (7C07100A)	4638176	*610670188*	AT-INDNS	COMP	15	0	