Cypress Semiconductor
Package Qualification Report

QTP# 073507 VERSION 1.0
November 2007

100 FBGA
(11 x 11 x 1.4 mm)
SnAgCu, MSL3, 260°C Reflow
AIT-Indonesia

CYPRESS TECHNICAL CONTACT FOR QUALIFICATION DATA:

Rene Rodgers
Principal Reliability Engineer
(408) 943-2732

Mira Ben-Tzur
Quality Engineering Director
(408) 943-2675

PACKAGE QUALIFICATION HISTORY

QUAL REPORT	DESCRIPTION OF QUALIFICATION PURPOSE	DATE COMP.
073507	Qualify 100 FBGA (11 x 11 x 1.4 mm) SnAgCu, MSL3, 260C Reflow, using CRM 1577A Epoxy and EME G760V Mold Compound assembled at AIT , Indonesia	Oct 07

MAJOR PACKAGE INFORMATION USED IN THIS QUALIFICATION	
Package Designation:	BW100
Package Outline, Type, or Name:	100 Fine Ball Grid Array (FBGA)
Mold Compound Name/Manufacturer:	EME G760V
Mold Compound Flammability Rating:	V-0 UL-94
Oxygen Rating Index:	NA
Substrate Material:	Green Substrate
Lead Finish, Composition / Thickness:	SnAgCu
Die Backside Preparation Method/Metallization:	Backgrind
Die Separation Method:	Saw
Die Attach Supplier:	Ablestik
Die Attach Material:	CRM 1577A
Die Attach Method:	Epoxy
Bond Diagram Designation:	001-16499
Wire Bond Method:	Thermosonic
Wire Material/Size:	Au/ 0.8mil
Thermal Resistance Theta JA °C/W :	27.14
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
Electrostatic Discharge Charge Device Model (ESD-CDM)	500V Cypress Spec. 25-00020	P
Electrostatic Discharge Human Body Model (ESD-HBM)	2,200V JESD22, Method A114-B	P
High Accelerated Saturation Test (HAST)	130°C 1.32V, 85%RH Precondition: JESD22 Moisture Sensitivity MSL 3 192 Hrs, 30°C/60%RH + 3IR-Reflow, **260°C**+0, -5°C	P
High Temp Storage	150C, no bias	P
Pressure Cooker	121°C, 100%RH, 15 PSIG Precondition: JESD22 Moisture Sensitivity MSL 3 192 Hrs, 30°C /60%RH + 3IR-Reflow, **260°C**+0, -5°C	P
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
Acoustic Microscopy	Cypress Spec 25-00104	P
Ball Shear	Cypress Spec 12-00292	P
Bond Pull	Cypress Spec 12-00292	P
Constructional Analysis	Cypress Spec 25-20035	P
Die Shear	Cypress Spec 12-00292	P
Dye Penetrant Test	Cypress Spec 25-00046	P
Final Visual Inspection	Cypress Spec 12-00292	P
Internal Visual	Cypress Spec 12-00292	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 #: 073507

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: ACOUSTIC							
CYP15G0101DXB (7B9291F)	4648177	610737584	AIT-INDONESIA	COMP	15	0	
CYP15G0101DXB (7B9291F)	4648177	610737585	AIT-INDONESIA	COMP	15	0	
CYP15G0101DXB (7B9291F)	4648177	610737586	AIT-INDONESIA	COMP	15	0	
STRESS: BALL SHEAR							
CYP15G0101DXB (7B9291F)	4648177	610737584	AIT-INDONESIA	COMP	10	0	
STRESS: BOND PULL							
CYP15G0101DXB (7B9291F)	4648177	610737584	AIT-INDONESIA	COMP	10	0	
STRESS: CONSTRUCTIONAL ANALYSIS							
CYP15G0101DXB (7B9291F)	4648177	610737584	AIT-INDONESIA	COMP	5	0	
STRESS: DIE SHEAR							
CYP15G0101DXB (7B9291F)	4648177	610737584	AIT-INDONESIA	COMP	15	0	
STRESS: DYE PENETRANT TEST							
CYP15G0101DXB (7B9291F)	4648177	610737584	AIT-INDONESIA	COMP	15	0	
CYP15G0101DXB (7B9291F)	4648177	610737585	AIT-INDONESIA	COMP	15	0	
CYP15G0101DXB (7B9291F)	4648177	610737586	AIT-INDONESIA	COMP	15	0	
STRESS: ESD-CHARGE DEVICE MODEL, 500V							
CYP15G0101DXB (7B9291F)	4648177	610737584	AIT-INDONESIA	COMP	9	0	
STRESS: ESD-HUMAN BODY CIRCUIT PER JESD22, METHOD A114-B, 2,200V							
CYP15G0101DXB (7B9291F)	4648177	610737584	AIT-INDONESIA	COMP	2	0	
STRESS: FINAL VISUAL							
CYP15G0101DXB (7B9291F)	4648177	610737584	AIT-INDONESIA	COMP	1333	0	
STRESS: HIGH TEMP STORAGE							
CY62167DV30LL (7C62162D)	4701893	610725091	AIT-INDONESIA	500	45	0	
CY62167DV30LL (7C62162D)	4701893	610725091	AIT-INDONESIA	1000	44	0	
STRESS: HI-ACCEL SATURATION TEST, (130C, 3.6V), 85%RH, PRE COND 192 HR 30C/60%RH, MSL3							
CY7C1305BV25 (7C1305DC)	4628570	610664892	AIT-INDONESIA	128	77	0	
STRESS: INTERNAL VISUAL							
CYP15G0101DXB (7B9291F)	4648177	610737584	AIT-INDONESIA	COMP	5	0	
CYP15G0101DXB (7B9291F)	4648177	610737585	AIT-INDONESIA	COMP	5	0	

Reliability Test Data

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Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: PHYSICAL DIMENSIONS							
CYP15G0101DXB (7B9291F)	4648177	610737584	AIT-INDONESIA	COMP	30	0	
STRESS: PRESSURE COOKER TEST (121C, 100%RH), PRE COND 192HRS 30C/60%RH, MSL3							
CYP15G0101DXB (7B9291F)	4648177	610737584	AIT-INDONESIA	168	77	0	
STRESS: SOLDERABILITY							
CYP15G0101DXB (7B9291F)	4648177	610737584	AIT-INDONESIA	COMP	3	0	
CYP15G0101DXB (7B9291F)	4648177	610737585	AIT-INDONESIA	COMP	3	0	
CYP15G0101DXB (7B9291F)	4648177	610737586	AIT-INDONESIA	COMP	3	0	
STRESS: TC COND. -65C TO 150 C, PRECONDITION 192 HRS 30C/60%RH, MSL3							
CYP15G0101DXB (7B9291F)	4648177	610737584	AIT-INDONESIA	500	77	0	
CYP15G0101DXB (7B9291F)	4648177	610737584	AIT-INDONESIA	1000	77	0	
CYP15G0101DXB (7B9291F)	4648177	610737585	AIT-INDONESIA	500	80	0	
CYP15G0101DXB (7B9291F)	4648177	610737585	AIT-INDONESIA	1000	80	0	
CYP15G0101DXB (7B9291F)	4648177	610737586	AIT-INDONESIA	500	78	0	
CYP15G0101DXB (7B9291F)	4648177	610737586	AIT-INDONESIA	1000	78	0	
STRESS: THERMAL SHOCK							
CYP15G0101DXB (7B9291F)	4648177	610737584	AIT-INDONESIA	200	77	0	
CYP15G0101DXB (7B9291F)	4648177	610737584	AIT-INDONESIA	1000	77	0	
STRESS: X-RAY							
CYP15G0101DXB (7B9291F)	4648177	610737584	AIT-INDONESIA	COMP	15	0	