

Cypress Semiconductor Package Qualification Report

**011102 VERSION 2.0
February 2004**

**48-ball Fine Pitch Ball Grid Array (FBGA)
(6 x 10 x 1.2 mm), Level 3
ASE, Taiwan (TAIWN-G)**

CYPRESS TECHNICAL CONTACT FOR QUALIFICATION DATA:

Rene Rodgers
Principal Reliability Engineer
(408) 943-2732

PACKAGE QALIFICATION HISTORY

Qual Report	Description of Qualification Purpose	Date Comp
011102	48-ball FBGA (6 x 10 x 1.2mm) ASE-Taiwan Assembly	Jun 01

MAJOR PACKAGE INFORMATION USED IN THIS QUALIFICATION	
Package Designation:	BA48
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:	Ablestik 8355F
Die Attach Method:	Epoxy
Bond Diagram Designation:	10-04254
Wire Bond Method:	Thermosonic
Wire Material/Size:	Au, 1.0mils
Thermal Resistance Theta JA °C/W:	40°C/W
Package Cross Section Yes/No:	N/A
Assembly Process Flow:	49-41010M
Name/Location of Assembly (prime) facility:	ASE Taiwan

ELECTRICAL TEST / FINISH DESCRIPTION	
Test Location:	ASE Taiwan, CSJ, CSPI-R
Fault Coverage:	100%

RELIABILITY TESTS PERFORMED PER SPECIFICATION REQUIREMENTS

Stress/Test	Test Condition (Temp/Bias)	Result P/F
Electrostatic Discharge Human Body Model (ESD-HBM)	2,200V MIL-STD-883, Method 3015.7	P
Electrostatic Discharge Charge Device Model (ESD-CDM)	500V Cypress Spec. 25-00020	P
Temperature Cycle	JEDEC22, Condition C, -65°C to 150°C Precondition: JESD22 Moisture Sensitivity Level 3 192 Hrs., 30°C/60%RH+3IR-Reflow, 220°C+5, -0°C	P
High Accelerated Saturation	130°C/1.98V, 85%RH Precondition: JESD22 Moisture Sensitivity Level 3 192 Hrs., 30°C/60%RH+3IR-Reflow, 220°C+5, -0°C	P
Pressure Cooker	121C, 100%RH Precondition: JESD22 Moisture Sensitivity Level 3 192 Hrs., 30°C/60%RH+3IR-Reflow, 220°C+5, -0°C	P
High Temperature Storage	150C, no bias	P
Internal Visual	Cypress Spec 25-00017	P
External Visual	Cypress Spec 25-00038	P
Physical Dimension	Cypress Spec. 25-00031	P
Die Shear	Cypress Spec 12-00292	P
Ball Shear	Cypress Spec 24-00018	P
Bond Pull	Cypress Spec 24-00002	P
Thermal Shock	Cypress Spec 25-00014 (125C, -55C)	P
X-Ray	Cypress Spec 12-00292	P
Acoustic Microscopy Test, (C-SAM)	Cypress Spec 25-000104 Level 3	P

Reliability Test Data

QTP #: 011102

Device	Fab Lot #	Assy Lot #	Ass Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: ACOUSTIC, MSL3							
CY62157CV18LL (7C623571C)	4107546	610112460	TAIWN -G	COMP	15	0	
CY62157CV18LL (7C623571C)	4107546	610112461	TAIWN -G	COMP	15	0	
CY62157CV18LL (7C623571C)	4107546	610112462	TAIWN -G	COMP	15	0	
STRESS: BALL SHEAR							
CY62157CV18LL (7C623571C)	4107546	610112460	TAIWN -G	COMP	10	0	
CY62157CV18LL (7C623571C)	4107546	610112461	TAIWN -G	COMP	10	0	
CY62157CV18LL (7C623571C)	4107546	610112462	TAIWN -G	COMP	10	0	
STRESS: BOND PULL							
CY62157CV18LL (7C623571C)	4107546	610112460	TAIWN -G	COMP	10	0	
CY62157CV18LL (7C623571C)	4107546	610112461	TAIWN -G	COMP	10	0	
CY62157CV18LL (7C623571C)	4107546	610112462	TAIWN -G	COMP	10	0	
STRESS: DIE SHEAR							
CY62157CV18LL (7C623571C)	4107546	610112460	TAIWN -G	COMP	15	0	
CY62157CV18LL (7C623571C)	4107546	610112461	TAIWN -G	COMP	15	0	
CY62157CV18LL (7C623571C)	4107546	610112462	TAIWN -G	COMP	15	0	
STRESS: ESD-CHARGE DEVICE MODEL (500V)							
CY62157CV18LL (7C623571C)	4108785	610112193	TAIWN -G	COMP	9	0	
STRESS: ESD-HUMAN BODY CIRCUIT PER MIL STD 883, METHOD 3015 (2,200V)							
CY62157CV18LL (7C623571C)	4108785	610112193	TAIWN -G	COMP	9	0	
STRESS: EXTERNAL VISUAL							
CY62157CV18LL (7C623571C)	4107546	610112460	TAIWN -G	COMP	15	0	
CY62157CV18LL (7C623571C)	4107546	610112461	TAIWN -G	COMP	15	0	
CY62157CV18LL (7C623571C)	4107546	610112462	TAIWN -G	COMP	15	0	
STRESS: HI-ACCEL SATURATION TEST (130C, 85%RH, 1.98V), PRE COND 192 HR 30C/60%RH, (MSL3)							
CY62157CV18LL (7C623571C)	4107546	610112215	TAIWN -G	128	50	0	
STRESS: HIGH TEMPERATURE STORAGE, PLASTIC, 150C							
MR003046 (7C1321C)	4021286	610026571	TAIWN -G	500	45	0	
MR003046 (7C1321C)	4021286	610026571	TAIWN -G	500	45	0	
MR003046 (7C62137A)	4021286	610026571	TAIWN -G	500	45	0	

Reliability Test Data

QTP #: 011102

Device	Fab Lot #	Assy Lot #	Ass Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: INTERNAL VISUAL							
CY62157CV18LL (7C623571C)	4107546	610112460	TAIWN -G	COMP	15	0	
STRESS: PHYSICAL DIMENSIONS							
CY62157CV18LL (7C623571C)	4107546	610112460	TAIWN -G	COMP	5	0	
CY62157CV18LL (7C623571C)	4107546	610112461	TAIWN -G	COMP	5	0	
CY62157CV18LL (7C623571C)	4107546	610112462	TAIWN -G	COMP	5	0	
STRESS: PRESSURE COOKER TEST (121C, 100%RH), PRE COND 192 HR 30C/60%RH (MSL3)							
CY62157CV18LL (7C623571C)	4107546	610112305	TAIWN -G	168	54	0	
CY62157CV18LL (7C623571C)	4108785	610112193	TAIWN -G	168	55	0	
STRESS: TC COND. C -65C TO 150C, PRECONDITION 192 HRS 30C/60%RH (MSL3)							
CY62157CV18LL (7C623571C)	4107546	610112215	TAIWN -G	300	52	0	
CY62157CV18LL (7C623571C)	4107546	610112305	TAIWN -G	300	50	0	
CY62157CV18LL (7C623571C)	4108785	610112193L1	TAIWN -G	300	47	0	
STRESS: THERMAL SHOCK (125c / -55C)							
CY62157CV18LL (7C623571C)	4107546	610112460	TAIWN-G	100	50	0	
CY62157CV18LL (7C623571C)	4107546	610112460	TAIWN -G	200	50	0	
STRESS: X-RAY							
CY62157CV18LL (7C623571C)	4107546	610112460	TAIWN -G	COMP	15	0	
CY62157CV18LL (7C623571C)	4107546	610112461	TAIWN -G	COMP	15	0	
CY62157CV18LL (7C623571C)	4107546	610112462	TAIWN-G	COMP	15	0	