

Cypress Semiconductor Package Qualification Report

**QTP# 000473 VERSION 1.1
July, 2001**

**100/256-ball Thin Ball Grid Array (FBGA) Package
MSL 3
ASE, Taiwan**

CYPRESS TECHNICAL CONTACT FOR QUALIFICATION DATA:

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PACKAGE QALIFICATION HISTORY

Qual Report	Description of Qualification Purpose	Date Comp
000473	100/256-ball, Thin Ball Grid Array (17 x 17 x 1.4mm), (FBGA) package, ≤ 203.1 x 322.8mls die size, ASE Taiwan	Mar 00

MAJOR PACKAGE INFORMATION USED IN THIS QUALIFICATION

Package Designation:	BB256
Package Outline, Type, or Name:	256-ball Thin Ball Grid Array (FBGA)
Mold Compound Name/Manufacturer:	PLASKON SMT-B-1
Mold Compound Flammability Rating:	V-O per UL94
Oxygen Rating Index:	> 28%
Substrate Material:	BT Resin
Lead Finish, Composition / Thickness:	Solder Ball, 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:	10-03638
Wire Bond Method:	Thermosonic
Wire Material/Size:	Au, 1.3um
Thermal Resistance Theta JA °C/W:	29.9°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
Fault Coverage:	100%

RELIABILITY TESTS PERFORMED PER SPECIFICATION REQUIREMENTS

Stress/Test	Test Condition (Temp/Bias)	Result P/F
Temperature Cycle	MIL-STD-883C, Method 1010, Condition C, -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	121C, 100%RH Precondition: JESD22 Moisture Sensitivity Level 3 192 Hrs., 30°C/60%RH+ 3IR-Reflow, 220°C+ 5, -0°C	P
High Accelerated Saturation Test	130°C/85%RH/3.63V Precondition: JESD22 Moisture Sensitivity Level 3 192 Hrs., 30°C/60%RH+ 3IR-Reflow, 220°C+ 5, -0°C	P
Tj for HAST	145.53°C	P
Electrostatic Discharge Charge Device Model (ESD-CDM)	Cypress Spec. 25-00020 500V	P
Acoustic Microscopy	Cypress Spec. 25-00104	P
High Temperature Storage	165°C, no bias	P
Physical Dimension	Cypress Spec. 25-00031	P
Die Shear	Cypress Spec 24-00004	P
Ball Shear	Cypress Spec 24-00018	P
Bond Pull	Cypress Spec 24-00002	P
External Visual	Cypress Specification 12-00292/12-00103	P
Internal Visual	Cypress Specification 12-00292/12-00103	P
Thermal Shock	-55 - 150°C	P
X-Ray	Cypress Spec 12-000149	P

RELIABILITY TEST DATA

QTP#: 000473

DEVICE	ASSY-LOC	FABLOT#	ASSYLOT#	DURATION	S/S	REJ	FAIL MODE
STRESS: ESD-CHARGE DEVICE MODEL (500V)							
CY37256VP256-BB(7C37652A)	TAIWN-G	2918088	619915336	COMP	3	0	
STRESS: EXTERNAL VISUAL							
CY37256VP256-BB(7C37652A)	TAIWN-G	2918088	619915336	COMP	15	0	
STRESS: INTERNAL VISUAL							
CY37256VP256-BB(7C37652A)	TAIWN-G	2918088	619915336	COMP	5	0	
STRESS: BALL SHEAR							
CY37256VP256-BB(7C37652A)	TAIWN-G	2918088	619915336	COMP	10	0	
STRESS: BOND PULL							
CY37256VP256-BB(7C37652A)	TAIWN-G	2918088	619915336	COMP	10	0	
STRESS: DIE SHEAR							
CY37256VP256-BB(7C37652A)	TAIWN-G	2918088	619915336	COMP	15	0	
STRESS: X-RAY							
CY37256VP256-BB(7C37652A)	TAIWN-G	2918088	619915336	COMP	15	0	
STRESS: ACOUSTIC							
CY37256VP256-BB(7C37652A)	TAIWN-G	2918088	619915336	COMP	15	0	
CY37256VP256-BB(7C37652A)	TAIWN-G	2918088	619915337L1	COMP	15	0	
CY37256VP256-BB(7C37652A)	TAIWN-G	2918088	619915338L1	COMP	15	0	
STRESS: PRESSURE COOKER 121C, 100%RH							
CY37256VP256-BB(7C37652A)	TAIWN-G	2918088	619915336	168	48	0	
STRESS: PHYSICAL DIMENSIONS							
CY37256VP256-BB(7C37652A)	TAIWN-G	2918088	619915336	COMP	5	0	
STRESS: HI-ACCEL SATURATION TEST (130C, 85%RH, 3.63V), PRECOND. 192 HRS 30C/60%RH							
CY37256VP256-BB(7C37652A)	TAIWN-G	2934772	619937560L	128	48	0	
STRESS: HIGH TEMPERATURE STORAGE (165C, NO BIAS)							
CY37256VP256-BB(7C37652A)	TAIWN-G	2918088	619915336	336	48	0	
STRESS: THERMAL SHOCK (150C, -55C)							
CY37256VP256-BB(7C37652A)	TAIWN-G	2918088	619915336	100	48	0	
CY37256VP256-BB(7C37652A)	TAIWN-G	2918088	619915336	200	48	0	
STRESS: TC COND. C, -55 TO 125C, PRECOND. 192 HRS 30C/60%RH (MSL 3)							
CY37256VP256-BB(7C37652A)	TAIWN-G	2934772	619937560L	500	50	0	
CY37256VP256-BB(7C37652A)	TAIWN-G	2934772	619937561L	500	50	0	
CY37256VP256-BB(7C37652A)	TAIWN-G	2934772	619937559	500	50	0	
CY37256VP256-BB(7C37652A)	TAIWN-G	2907107	619938111	500	50	0	