

Cypress Semiconductor Qualification Report

**QTP# 99156 VERSION 1.0
September, 1999**

**48 FBGA Package
7 X 7 MM
OSE, TAIWAN Assembly**

CYPRESS TECHNICAL CONTACT FOR QUALIFICATION DATA:

Ed Russell
Reliability Manager
(408) 432-7068

PLASTIC PACKAGE/ASSEMBLY DESCRIPTION			
Package Outline, Type, or Name:	48-Lead BGA (7x7mm)		
Mold Compound Name/Manufacturer:	SMT-B-1		
Lead Frame material:	BT Resin		
Lead Finish, composition:	Solder Plated, 63%Sn, 37%Pb		
Die Attach Area Plating:	Copper/Solder mask		
Die Attach Method:	Epoxy	Die Attach Material:	Ablestik 8335
Wire Bond Method:	Au Thermosonic	Wire Material/Size:	Gold / 1.0 mil
JESD22-A112 Moisture Sensitivity Level	MSL 3		
Assembly Line ID and Process ID:	OSE, Taiwan (TAIWAN-T)		

Note: Please contact a Cypress Representative for other packages availability.

RELIABILITY TESTS PERFORMED

Stress/Test	Test Condition (Temp/Bias)	Result P/F
High Temperature Operating Life Latent Failure Rate	Dynamic Operating Condition, Vcc = 3.8V, 150°C	P
Temperature Cycle	JEDEC22, Condition B, -40°C to 125°C Precondition: JESD22 Moisture Sensitivity MSL 3 192 Hrs., 30°C/60%RH+ 3IR-Reflow, 220°C+ 5, 0°C	P
Temperature Cycle	JEDEC22, Condition C, -65°C to 150°C Precondition: JESD22 Moisture Sensitivity MSL3 192 Hrs., 30°C/60%RH+ 3IR-Reflow, 220°C+ 5, 0°C	
High Accelerated Saturation Test	140°C/3.8V/85%RH Precondition: JESD22 Moisture Sensitivity MSL3 192 Hrs., 30°C/60%RH+ 3IR-Reflow, 220°C+ 5, 0°C	P
High Temperature Storage	165°C, no bias	P
Internal Visual	Cypress Spec 25-00017	P
External Visual	Cypress Spec 12-00292/12-00103	P
Physical Dimension	Cypress Spec. 25-00031	P
Die Shear	Cypress Spec 24-00215	P
Ball Shear	Cypress Spec 24-00018	P
Bond Pull	Cypress Spec 24-00002	P
Thermal Shock	Cypress Spec 25-00014	P
Pressure Cooker Test	No Bias, 121 C, 100%RH, 30 PSIA Precondition: JESD22 Moisture Sensitivity MSL3 192 Hrs., 30°C/60%RH+ 3IR-Reflow, 220°C+ 5, 0°C	P
X-Ray	Cypress Spec 12-00292	P
Acoustic Microscopy Test (C-SAM)	Cypress Spec 25-000104	P

RELIABILITY TEST DATA

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DEVICE	ASSY-LOC	FABLOT#	ASSYLOT#	DURATION	S/S	REJ	FAIL MODE
STRESS: HI-ACCEL SATURATION TEST (140C/85%RH/3.63V), PRECOND. 192 HRS 30C/60%RH							
7C621273AC-TBAI	TAIWN-T	4817795	619907694	128	47	0	
STRESS: ACTUAL CONDITION 165C /N/A							
7C621273AC-TBAI	TAIWN-T	4817795	619907695	336	48	0	
STRESS: HIGH TEMP DYNAMIC OPERATING LIFE-LATENT FAILURE RATE (150C, 3.8V)							
7C621273AC-TBAI	TAIWN-T	4817795	619907693	500	120	0	
7C621273AC-TBAI	TAIWN-T	4817795	619907693	800	120	0	
7C621273AC-TBAI	TAIWN-T	4817795	619907695	500	119	0	
STRESS: EXTENDED DYNAMIC BURN-IN (150C, 3.8V)							
7C621273AC-TBAI	TAIWN-T	4817795	619907695	800	118	1	
STRESS: PRESSURE COOKER TEST (121C, 100%RH)							
7C621273AC-TBAI	TAIWN-T	4817795	619907693	168	48	0	
STRESS: TC JEDEC22 COND. B, -40 TO 125C, PRECOND. 192 HRS 30C/60%RH							
7C621273AC-TBAI	TAIWN-T	4817795	619907693	500	48	0	
7C621273AC-TBAI	TAIWN-T	4817795	619907693	1500	48	0	
7C621273AC-TBAI	TAIWN-T	4817795	619907694	500	48	0	
7C621273AC-TBAI	TAIWN-T	4817795	619907694	1500	48	0	
7C621273AC-TBAI	TAIWN-T	4817795	619907695	500	48	0	
7C621273AC-TBAI	TAIWN-T	4817795	619907695	1500	48	1	

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DEVICE	ASSY-LOC	FABLOT#	ASSYLOT#	DURATION	S/S	REJ	FAIL MODE
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STRESS: THERMAL SHOCK, CONDITION B, 150C /-55C							
7C621273AC-TBAI	TAIWN-T	4817795	619907695	100	48	0	
7C621273AC-TBAI	TAIWN-T	4817795	619907695	200	48	0	

