Cypress Semiconductor
Lead Finish Qualification Report

QTP# 050703 VERSION 1.0
September 2006

≤388-Ball HSBGA and PBGA Packages
SnAgCu, MSL3, 260C Solder Reflow
ASE-Taiwan (G)

CYPRESS TECHNICAL CONTACT FOR QUALIFICATION DATA:

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PACKAGE QUALIFICATION HISTORY

Qual Report		Description of Qualification Purpose		Date Comp
050703		≤388-Ball FBGA HSBGA & PBGA packages, MSL3, 260C Reflow assembled at ASE-Taiwan (G)		Jun 06

MAJOR PACKAGE INFORMATION USED IN THIS QUALIFICATION	
Package Designation:	BH388
Package Outline, Type, or Name:	388-Ball PBGA with Heat Spreader
Mold Compound Name/Manufacturer:	Sumitomo G770J
Mold Compound Flammability Rating:	V-O per UL94
Oxygen Rating Index:	None
Substrate Material:	BT
Lead Finish, Composition / Thickness:	SnAgCu
Die Backside Preparation Method/Metallization:	Backgrind
Die Separation Method:	Saw
Die Attach Supplier:	Ablestik
Die Attach Material:	2100
Die Attach Method:	Epoxy
Bond Diagram Designation:	10-06281
Wire Bond Method:	Thermosonic
Wire Material/Size:	Au, 1.0 mil
Thermal Resistance Theta JA °C/W:	12°C/W
Package Cross Section Yes/No:	N/A
Assembly Process Flow:	No
Name/Location of Assembly (prime) facility:	ASEK-Taiwan (G)
MSL Level	3
Reflow Profile	260C

ELECTRICAL TEST / FINISH DESCRIPTION	
Test Location:	CML-R, SJC, CHIPMOS

RELIABILITY TESTS PERFORMED PER SPECIFICATION REQUIREMENTS

Stress/Test	Test Condition (Temp/Bias)	Result P/F
Acoustic Microscopy Test	Cypress Spec. 25-00104	P
High Accelerated Saturation	130°C, 1.58V, 85%RH Precondition: JESD22 Moisture Sensitivity MSL3 192 Hrs., 30°C/60%RH+3IR-Reflow, 260°C+0, -5°C	P
Pressure Cooker	121C, 100%RH, 15 Psig Precondition: JESD22 Moisture Sensitivity MSL3 192 Hrs., 30°C/60%RH+3IR-Reflow, 260°C+0, -5°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, 260°C+0, -5°C	P
Cross Section	Cypress Spec. 25-20028	P
External Visual	Cypress Spec. 12-00292	P

Reliability Test Data

QTP #: 050703

Device	Fab Lot #	Assy Lot #	Ass Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: ACOUSTIC, MSL3							
CYNSE70128 (7C7040A)	9443190	*610506560*	TAIWN-G	COMP	15	0	
CYNSE70128 (7C7040A)	9443190	*610506677*	TAIWN-G	COMP	15	0	
CYNSE70128 (7C7040A)	9443190	*610506769*	TAIWN-G	COMP	15	0	
STRESS: CROSS SECTION							
CYNSE70128 (7C7040A)	9443190	*610506560*	TAIWN-G	COMP	5	0	
CYNSE70128 (7C7040A)	9443190	*610506677*	TAIWN-G	COMP	5	0	
CYNSE70128 (7C7040A)	9443190	*610506769*	TAIWN-G	COMP	5	0	
STRESS: EXTERNAL VISUAL							
CYNSE70128 (7C7040A)	9443190	*610506560*	TAIWN-G	COMP	15	0	
CYNSE70128 (7C7040A)	9443190	*610506677*	TAIWN-G	COMP	15	0	
CYNSE70128 (7C7040A)	9443190	*610506769*	TAIWN-G	COMP	15	0	
STRESS: HI-ACCEL SATURATION TEST (130C, 85%RH, 1.58V), PRE COND 192 HR 30C/60%RH, MSL3							
CYNSE70128 (7C7040A)	9443190	*610506677*	TAIWN-G	128	48	0	
CYNSE70128 (7C7040A)	8542031	*610601914*	TAIWN-G	128	24	0	
STRESS: PRESSURE COOKER TEST (121C, 100%RH), 15 Psig, PRE COND 192 HR 30C/60%RH, MSL3							
CYNSE70128 (7C7040A)	9443190	*610506769*	TAIWN-G	168	39	0	
STRESS: TC COND. C -65C TO 150C, PRE COND 192 HRS 30C/60%RH, MSL3							
CYNSE70128 (7C7040A)	9443190	*610506560*	TAIWN-G	300	48	0	
CYNSE70128 (7C7040A)	9443190	*610506560*	TAIWN-G	500	45	0	
CYNSE70128 (7C7040A)	9443190	*610506677*	TAIWN-G	300	48	0	
CYNSE70128 (7C7040A)	9443190	*610506677*	TAIWN-G	500	48	0	
CYNSE70128 (7C7040A)	9443190	*610506769*	TAIWN-G	300	42	0	
CYNSE70128 (7C7040A)	9443190	*610506769*	TAIWN-G	500	42	0	