

Cypress Semiconductor Package Qualification Report

**QTP# 033603 VERSION 1.0
April 2004**

28-Lead Exposed Pad Plastic Outline Ics

Amkor-Seoul Korea Assembly

CYPRESS TECHNICAL CONTACT FOR QUALIFICATION DATA:

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PRODUCT QUALIFICATION HISTORY

Qual Report	Description of Qualification Purpose	Date Comp
033603	28-lead Exposed Pad SOIC, 300mils package assembled in Amkor-Seoul Korea-K1	Jan 04

MAJOR PACKAGE INFORMATION USED IN THIS QUALIFICATION	
Package Designation:	SE283
Package Outline, Type, or Name:	28-pin Exposed Pad Plastic Small Outline Ics (ESOIC)
Mold Compound Name/Manufacturer:	Sumitomo G700
Mold Compound Flammability Rating:	V-O per UL94
Oxygen Rating Index:	N/A
Lead Frame Designation:	N/A
Lead Frame Material:	Copper Base
Lead Finish, Composition / Thickness:	SnPb 85/15 300-800u inch
Die Backside Preparation Method/Metallization:	Grinding
Die Separation Method:	Sawing
Die Attach Supplier:	Ablestik
Die Attach Material:	8290
Die Attach Method:	Dispensing
Bond Diagram Designation	10-05114
Wire Bond Method:	Thermosonic
Wire Material/Size:	Au 1.0mil
Thermal Resistance Theta JA °C/W:	27.8 °C/W
Package Cross Section Yes/No:	N/A
Assembly Process Flow:	49-14999
Name/Location of Assembly (prime) facility:	Amkor-Seoul Korea-K1 (SEOL-L)

PACKAGE AVAILABILITY

PACKAGE	ASSEMBLY SITE FACILITY
28-lead ESOIC	CML-R, PHIL-M

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

RELIABILITY TESTS PERFORMED PER SPECIFICATION REQUIREMENTS

Stress/Test	Test Condition (Temp/Bias)	Result P/F
High Accelerated Saturation Test	130°C, 85%RH, 3.63V MIL-STD-883C, Method 1010, 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
Pressure Cooker	121°C, 100%RH MIL-STD-883C, Method 1010, 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
Temperature Cycle	MIL-STD-883C, Method 1010, 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
Electrostatic Discharge Human Body Model (ESD-HBM)	1,100V JESD22, Method A114-B	P
Electrostatic Discharge Charge Device Model (ESD-CDM)	500V Cypress Spec. 25-00020	P
High Temperature Storage	150°C, no bias	P
Age Bond Pull	MIL-STD-883C, Method 2011	P
Ball Shear	Cypress Spec 24-00018	P
External Visual	Cypress Spec. 12-00292	P
Die Shear	Cypress Spec 12-00292	P
Internal Visual	Cypress Spec 12-00292	P
Solderability	Cypress Spec. 25-00018	P
Acoustic Microscopy, Level 3	Cypress Spec. 25-00104	P
Latch up Sensitivity	9.5V, ± 300mA In accordance with JEDEC 17. Cypress Spec. 01-00081	P
Physical Dimensions	Cypress Spec. 25-00031	P
Thermal Shock	125C, -55C	P
X-Ray	MIL-STD-883, Method 32012, Cypress Spec. 12-00292	P

Reliability Test Data

QTP #: 033603

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: ACOUSTIC, MSL3							
CYWUSB6934	4318747	610336918/9/20	SEOL-L	COMP	15	0	
CYWUSB6934	4318747	610344902	SEOL-L	COMP	15	0	
CYWUSB6934	4318747	610345909	SEOL-L	COMP	15	0	
STRESS: BALL SHEAR							
CYWUSB6934	4318747	610336918/9/20	SEOL-L	COMP	10	0	
STRESS: BOND PULL							
CYWUSB6934	4318747	610336918/9/20	SEOL-L	COMP	10	0	
STRESS: DIE SHEAR							
CYWUSB6934	4318747	610336918/9/20	SEOL-L	COMP	15	0	
STRESS: ESD-CHARGE DEVICE MODEL (500V)							
CYWUSB6934	4318747	610344902/5909	SEOL-L	COMP	9	0	
STRESS: ESD-HUMAN BODY CIRCUIT PER JESD22, METHOD A114-B, 1,100V							
CYWUSB6934	4318747	610344902/5909	SEOL-L	COMP	3	0	
STRESS: EXTERNAL VISUAL							
CYWUSB6934	4318747	610336918/9/20	SEOL-L	COMP	15	0	
STRESS: HI-ACCEL SATURATION TEST, 130C, 85%RH, 3.63V, PRE COND 192 HR 30C/60%RH, MSL3							
CYWUSB6934	4318747	610336918/9/20	SEOL-L	128	50	0	
CYWUSB6934	4318747	610336918/9/20	SEOL-L	256	50	0	
CYWUSB6934	4318747	610336918/9/20	SEOL-L	128	46	0	
CYWUSB6934	4318747	610336918/9/20	SEOL-L	256	45	0	
STRESS: HIGH TEMPERATURE STORAGE, PLASTIC, 150C							
CYWUSB6934	4318747	610336918/9/20	SEOL-L	500	54	0	
CYWUSB6934	4318747	610336918/9/20	SEOL-L	1000	53	0	
CYWUSB6934	4318747	610336918/9/20	SEOL-L	1500	52	0	
STRESS: INTERNAL VISUAL							
CYWUSB6934	4318747	610336918/9/20	SEOL-L	COMP	5	0	

Reliability Test Data

QTP #: 033603

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: PHYSICAL DIMENSION							
CYWUSB6934	4318747	610336918/9/20	SEOL-L	COMP	5	0	
STRESS: PRESSURE COOKER, 121C,100%RH, PRECONDITION 192HRS 30C/60%RH, MSL3							
CYWUSB6934	4318747	610336918/9/20	SEOL-L	168	96	0	
CYWUSB6934	4318747	610336918/9/20	SEOL-L	288	90	0	
STRESS: SOLDERABILITY							
CYWUSB6934	4318747	610336918/9/20	SEOL-L	COMP	3	0	
STRESS: STATIC LATCH-UP TESTING (125C, 9.5V, +/-300mA)							
CYWUSB6934	4318747	610344902/5909	SEOL-L	COMP	3	0	
STRESS: TC COND. C -65C TO 150C, PRECONDITION 192HRS 30C/60%RH, MSL3							
CYWUSB6934	4318747	610336918/9/20	SEOL-L	300	77	0	
CYWUSB6934	4318747	610336918/9/20	SEOL-L	500	77	0	
CYWUSB6934	4318747	610336918/9/20	SEOL-L	1000	77	0	
CYWUSB6934	4318747	610344902	SEOL-L	300	50	0	
CYWUSB6934	4318747	610344902	SEOL-L	500	50	0	
CYWUSB6934	4318747	610345909	SEOL-L	300	50	0	
CYWUSB6934	4318747	610345909	SEOL-L	500	50	0	
STRESS: THERMAL SHOCK, 125C / -55C							
CYWUSB6934	4318747	610336918/9/20	SEOL-L	100	48	0	
CYWUSB6934	4318747	610336918/9/20	SEOL-L	200	48	0	
STRESS: X-RAY							
CYWUSB6934	4318747	610336918/9/20	SEOL-L	COMP	15	0	