

Cypress Semiconductor Package Qualification Report

**QTP# 070305 VERSION 1.0
January 2007**

<p>32-Lead QFN (5 x 5 x 0.6mm) NiPdAu, MSL3, 260°C Reflow Amkor-Korea (L)</p>
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PACKAGE QUALIFICATION HISTORY

QUAL REPORT	DESCRIPTION OF QUALIFICATION PURPOSE	DATE COMP.
070305	32-Lead QFN (5 x 5 x 0.6mm), NiPdAu, MSL3, 260C Reflow assembled at Amkor-Korea (L)	Jan 07

MAJOR PACKAGE INFORMATION USED IN THIS QUALIFICATION	
Package Designation:	LK32
Package Outline, Type, or Name:	32-Lead Quad Flat No Lead (QFN) 5 x 5 x 0.6mm
Mold Compound Name/Manufacturer:	Sumitomo – G700FG
Mold Compound Flammability Rating:	V-O per UL94
Oxygen Rating Index:	None
Lead Frame Material:	Copper
Lead Finish, Composition / Thickness:	NiPdAu
Die Backside Preparation Method/Metallization:	Backgrind
Die Separation Method:	Sawing
Die Attach Supplier:	Ablestik
Die Attach Material:	8290
Die Attach Method:	Epoxy
Bond Diagram Designation	001-11405
Wire Bond Method:	Thermosonic
Wire Material/Size:	Au. 0.8mil
Thermal Resistance Theta JA °C/W:	25.4 °C/W
Package Cross Section Yes/No:	N/A
Assembly Process Flow:	49-10999
Name/Location of Assembly (prime) facility:	KOREA-L
MSL Level	3
Reflow Profile	260C

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

RELIABILITY TESTS PERFORMED PER SPECIFICATION REQUIREMENT

Stress/Test	Test Condition (Temp/Bias)	Result P/F
Temperature Cycle	MIL-STD-883C, Method 1010, 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
Pressure Cooker Test	121°C, 100%RH, 15 Psig Precondition: JESD22 Moisture Sensitivity MSL3 192 Hrs, 30°C/60%RH+3IR-Reflow, 260°C+0, -5°C	P
High Accelerated Saturation Test (HAST)	130°C, 5.5V, 85% RH Precondition: JESD22 Moisture Sensitivity MSL3 192 Hrs, 30°C/60%RH+3IR-Reflow, 260°C+0, -5°C	P
Electrostatic Discharge Human Body Model (ESD-HBM)	2,200V JESD22, Method A114-B	P
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
Acoustics Microscopy	Cypress Spec. 12-00292	P
Ball Shear	Cypress Spec. 24-00018	P
Bond Pull	Cypress Spec. 12-00292	P
Constructional Analysis	Cypress Spec. 25-20035	P
Die Shear	Cypress Spec. 12-00292	P
Dye Penetration	Cypress Spec. 25-20027	P
External Visual	Cypress Spec. 12-00292/25-00103	P
High Temperature Storage	150C, no bias	P
Internal Visual	Cypress Spec. 12-00292	P
Physical Dimension	Cypress Spec. 25-00031	P
Solderability	Cypress Spec. 25-00018	P
Thermal Shock	125C, -55C Cypress Spec. 25-00014	P
X-ray	Cypress Spec. 12-00292	P

Reliability Test Data

QTP #: 070305

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: ACOUSTIC, MSL3							
CY8C21434 (8C21434A)	4627190	610652661	KOREA-L	COMP	15	0	
CY8C21434 (8C21434A)	4627190	610652662	KOREA-L	COMP	15	0	
CY8C21434 (8C21434A)	4627190	610652663	KOREA-L	COMP	15	0	
STRESS: BALL SHEAR							
CY8C21434 (8C21434A)	4627190	610652661	KOREA-L	COMP	10	0	
STRESS: BOND PULL							
CY8C21434 (8C21434A)	4627190	610652661	KOREA-L	COMP	10	0	
STRESS: CONSTRUCTIONAL ANALYSIS							
CY8C21434 (8C21434A)	4627190	610652661	KOREA-L	COMP	5	0	
STRESS: DIE SHEAR							
CY8C21434 (8C21434A)	4627190	610652661	KOREA-L	COMP	15	0	
STRESS: DYE PENETRATION							
CY8C21434 (8C21434A)	4627190	610652661	KOREA-L	COMP	15	0	
CY8C21434 (8C21434A)	4627190	610652662	KOREA-L	COMP	15	0	
CY8C21434 (8C21434A)	4627190	610652663	KOREA-L	COMP	15	0	
STRESS: EXTERNAL VISUAL							
CY8C21434 (8C21434A)	4627190	610652661	KOREA-L	COMP	15	0	
STRESS: ESD-CHARGE DEVICE MODEL, 500V							
CY8C21434 (8C21434A)	4627190	610652661	KOREA-L	COMP	9	0	
STRESS: ESD-HUMAN BODY CIRCUIT PER JESD22, METHOD A114-B, 2,200V							
CY8C21434 (8C21434A)	4627190	610652661	KOREA-L	COMP	9	0	
STRESS: ESD-HUMAN BODY CIRCUIT PER MIL STD 883, METHOD 3015, 2,200V							
CY8C21434 (8C21434A)	4627190	610652661	KOREA-L	COMP	3	0	
STRESS: INTERNAL VISUAL							
CY8C21434 (8C21434A)	4627190	610652661	KOREA-L	COMP	5	0	
STRESS: HIGH TEMPERATURE STORAGE, 150C, no bias							
CY8C21434 (8C21434A)	4627190	610652661	KOREA-L	500	50	0	
CY8C21434 (8C21434A)	4627190	610652661	KOREA-L	1000	49	0	

Reliability Test Data

QTP #: 070305

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
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STRESS: HI-ACCEL SATURATION TEST, 130C, 5.5V, 85%RH, PRE COND 192 HR 30C/60%RH, MSL3

CY8C21434 (8C21434A)	4627190	610652661	KOREA-L	128	45	0	
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STRESS: PRESSURE COOKER TEST, 121C, 100%RH, 15 Psig, PRE COND 192 HR 30C/60%RH, MSL3

CY8C21434 (8C21434A)	4627190	610652661	KOREA-L	168	42	0	
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STRESS: PHYSICAL DIMENSION

CY8C21434 (8C21434A)	4627190	610652661	KOREA-L	COMP	5	0	
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STRESS: TC COND. C -65C TO 150C, PRE COND 192 HR 30C/60%RH, MSL3

CY8C21434 (8C21434A)	4627190	610652661	KOREA-L	300	50	0	
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CY8C21434 (8C21434A)	4627190	610652661	KOREA-L	500	49	0	
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CY8C21434 (8C21434A)	4627190	610652661	KOREA-L	1000	49	0	
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CY8C21434 (8C21434A)	4627190	610652662	KOREA-L	300	50	0	
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CY8C21434 (8C21434A)	4627190	610652662	KOREA-L	500	43	0	
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CY8C21434 (8C21434A)	4627190	610652662	KOREA-L	1000	42	0	
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CY8C21434 (8C21434A)	4627190	610652663	KOREA-L	300	49	0	
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CY8C21434 (8C21434A)	4627190	610652663	KOREA-L	500	46	0	
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CY8C21434 (8C21434A)	4627190	610652663	KOREA-L	1000	46	0	
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STRESS: SOLDERABILITY

CY8C21434 (8C21434A)	4627190	610652661	KOREA-L	COMP	3	0	
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STRESS: THERMAL SHOCK COND. B - 55C TO 125C

CY8C21434 (8C21434A)	4627190	610652661	KOREA-L	200	45	0	
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STRESS: X-RAY

CY8C21434 (8C21434A)	4627190	610652661	KOREA-L	COMP	10	0	
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