

Cypress Semiconductor Package Qualification Report

**QTP# 071706 VERSION 1.0
June 2007**

24-Lead QFN

(4 x 4 x 0.6mm)

NiPdAu, MSL3, 260°C Reflow

AIT-Indonesia

CYPRESS TECHNICAL CONTACT FOR QUALIFICATION DATA:

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PACKAGE QUALIFICATION HISTORY

QUAL REPORT	DESCRIPTION OF QUALIFICATION PURPOSE	DATE COMP.
071706	24-Lead QFN (4 x 4 x 0.6mm), NiPdAu, MSL3, 260C Reflow assembled at AIT-Indonesia	May 07

MAJOR PACKAGE INFORMATION USED IN THIS QUALIFICATION	
Package Designation:	LQ24
Package Outline, Type, or Name:	24-Lead Quad Flat No Lead (QFN) 4 x 4 x 0.6mm
Mold Compound Name/Manufacturer:	Sumitomo – G770
Mold Compound Flammability Rating:	V-O per UL94
Oxygen Rating Index:	28%
Lead Frame Material:	Copper
Lead Finish, Composition / Thickness:	NiPdAu -Ag
Die Backside Preparation Method/Metallization:	Backgrind
Die Separation Method:	Sawing
Die Attach Supplier:	Sumitomo
Die Attach Material:	CRM1064L
Die Attach Method:	Epoxy
Bond Diagram Designation	001-13936
Wire Bond Method:	Thermosonic
Wire Material/Size:	Au. 0.8mil
Thermal Resistance Theta JA °C/W:	22.98 °C/W
Package Cross Section Yes/No:	N/A
Assembly Process Flow:	001-08480
Name/Location of Assembly (prime) facility:	AIT-Indonesia
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
High Accelerated Saturation Test (HAST)	130°C, 5.25V, 85%RH Precondition: JESD22 Moisture Sensitivity MSL 3 192 Hrs, 30°C/60%RH+3IR-Reflow, 260°C +0, -5°C	P
Pressure Cooker	121°C, 100%RH, 15 Psig Precondition: JESD22 Moisture Sensitivity MSL 3 192 Hrs, 30°C/60%RH+3IR-Reflow, 260°C +0, -5°C	P
Temperature Cycle	MIL-STD-883C, Method 1010, Condition C, -65°C to 150°C Precondition: JESD22 Moisture Sensitivity MSL 3 192 Hrs, 30°C/60%RH+3IR-Reflow, 260°C +0, -5°C	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
Dye Penetration	Cypress Spec. 25-20027	P
Electrostatic Discharge Charge Device Model (ESD-CDM)	500V Cypress Spec. 25-00020	P
Electrostatic Discharge Human Body Model (ESD-HBM)	2,200V JEDEC EIA/JESD22-A114-B	P
Electrostatic Discharge Human Body Model (ESD-HBM)	2,200V MIL-STD-883, Method 3015.7	P
External Visual	Cypress Spec. 12-00292/25-00103	P
High Temperature Storage	150C, no bias	P
Physical Dimension	Cypress Spec. 25-00031	P
Solderability	Cypress Spec. 25-00018	P
Thermal Shock	Cypress Spec. 25-00014	P
X-ray	Cypress Spec. 12-00292	P

Reliability Test Data

QTP #: 071706

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: ACOUSTIC, MSL3							
CY8C20334 (8C20334A)	4706056	3055642.1	AIT-INDNS	COMP	15	0	
CY8C20334 (8C20334A)	4706056	3055865.1	AIT-INDNS	COMP	15	0	
CY8C20334 (8C20334A)	4706056	3055866.1	AIT-INDNS	COMP	15	0	
STRESS: BALL SHEAR							
CY8C20334 (8C20334A)	4706056	3055642.1	AIT-INDNS	COMP	10	0	
CY8C20334 (8C20334A)	4706056	3055865.1	AIT-INDNS	COMP	10	0	
CY8C20334 (8C20334A)	4706056	3055607.1	AIT-INDNS	COMP	10	0	
STRESS: BOND PULL							
CY8C20334 (8C20334A)	4706056	3055642.1	AIT-INDNS	COMP	10	0	
CY8C20334 (8C20334A)	4706056	3055865.1	AIT-INDNS	COMP	10	0	
CY8C20334 (8C20334A)	4706056	3055607.1	AIT-INDNS	COMP	10	0	
STRESS: CONSTRUCTIONAL ANALYSIS							
CY8C20334 (8C20334A)	4706056	3055607.1	AIT-INDNS	COMP	1	0	
STRESS: DYE PENETRATION							
CY8C20334 (8C20334A)	4706056	3055642.1	AIT-INDNS	COMP	50	0	
CY8C20334 (8C20334A)	4706056	3055865.1	AIT-INDNS	COMP	50	0	
CY8C20334 (8C20334A)	4706056	3055866.1	AIT-INDNS	COMP	50	0	
CY8C20334 (8C20334A)	4706056	3055617.1	AIT-INDNS	COMP	50	0	
CY8C20334 (8C20334A)	4706056	3055867.1	AIT-INDNS	COMP	50	0	
STRESS: ESD-CHARGE DEVICE MODEL, 500V							
CY8C21434 (8C21434A)	4547632	610670518	AT-INDNS	COMP	9	0	
STRESS: ESD-HUMAN BODY CIRCUIT PER JEDEC EIA/JESD22-A114-B, 2,200V							
CY8C21434 (8C21434A)	4547632	610670518	AIT-INDNS	COMP	8	0	
STRESS: ESD-HUMAN BODY CIRCUIT PER MIL STD 883, METHOD 3015, 2,000V							
CY8C21434 (8C21434A)	4547632	610670518	AIT-INDNS	COMP	3	0	
STRESS: EXTERNAL VISUAL							
CY8C20334 (8C20334A)	4706056	3055607.1	AIT-INDNS	COMP	15	0	
STRESS: HIGH TEMPERATURE STORAGE, 150C, no bias							
CY28447LTXC (7C828447B)	4624887	610662245	AIT-INDNS	500	50	0	
CY28447LTXC (7C828447B)	4624887	610662245	AIT-INDNS	1000	49	0	

Reliability Test Data

QTP #: 071706

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
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STRESS: HI-ACCEL SATURATION TEST, 130C, 85%RH, 5.25V, PRE COND 192 HR 30C/60%RH, MSL3

CY8C21434 (8C21434A)	4547632	610670518	AIT-INDNS	128	76	0	
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STRESS: PRESSURE COOKER TEST, 121C, 100%RH, 15 Psig, PRE COND 192 HR 30C/60%RH, MSL3

CY8C21434 (8C21434A)	4547632	610670518	AIT-INDNS	168	75	0	
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STRESS: PHYSICAL DIMENSION

CY8C20334 (8C20334A)	4706056	3055642.1	AIT-INDNS	COMP	10	0	
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CY8C20334 (8C20334A)	4706056	3055865.1	AIT-INDNS	COMP	10	0	
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CY8C20334 (8C20334A)	4706056	3055607.1	AIT-INDNS	COMP	10	0	
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STRESS: TC COND. C -65C TO 150C, PRE COND 192 HRS 30C/60%RH, MSL3

CY8C21434 (8C21434A)	4547632	610670518	AIT-INDNS	300	77	0	
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CY8C21434 (8C21434A)	4547632	610670518	AIT-INDNS	500	72	0	
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CY8C21434 (8C21434A)	4547632	610670518	AIT-INDNS	1000	72	0	
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CY8C21434 (8C21434A)	4547632	610670519	AIT-INDNS	300	76	0	
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CY8C21434 (8C21434A)	4547632	610670519	AIT-INDNS	500	75	0	
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CY8C21434 (8C21434A)	4547632	610670519	AIT-INDNS	1000	73	0	
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CY8C21434 (8C21434A)	4547632	610670520	AIT-INDNS	300	74	0	
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CY8C21434 (8C21434A)	4547632	610670520	AIT-INDNS	500	74	0	
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CY8C21434 (8C21434A)	4547632	610670520	AIT-INDNS	1000	74	0	
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STRESS: THERMAL SHOCK

CY8C21434 (8C21434A)	4547632	610670518	AIT-INDNS	100	76	0	
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CY8C21434 (8C21434A)	4547632	610670518	AIT-INDNS	200	76	0	
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STRESS: SOLDERABILITY

CY8C21434 (8C21434A)	4547632	610670518	AIT-INDNS	COMP	3	0	
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STRESS: X-RAY

CY8C20334 (8C20334A)	4706056	3055642.1	AIT-INDNS	COMP	15	0	
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CY8C20334 (8C20334A)	4706056	3055865.1	AIT-INDNS	COMP	15	0	
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CY8C20334 (8C20334A)	4706056	3055607.1	AIT-INDNS	COMP	15	0	
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