

Cypress Semiconductor Package Qualification Report

**QTP# 052610 VERSION 2.0
December 2006**

**32-LD QFN (Quad Flat No-Lead)
(5 x 5mm)
Pb-Free, MSL3, 260°C Reflow
CML-RA**

CYPRESS TECHNICAL CONTACT FOR QUALIFICATION DATA:

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PACKAGE QUALIFICATION HISTORY

QUAL REPORT	DESCRIPTION OF QUALIFICATION PURPOSE	DATE COMP.
052610	32-LD QFN (5 x 5mm), Pb-Free, MSL1, 260C Reflow assembled at CML-R Autoline	Jul 05
052610	Cypress established policy requiring MSL and Reflow Peak Temperature alignment for Cypress and its Assembly Subcontractors. Downgrade MSL1 to MSL3	Sep 06

MAJOR PACKAGE INFORMATION USED IN THIS QUALIFICATION	
Package Designation:	LY32
Package Outline, Type, or Name:	32-Lead Quad Flat No Lead (QFN) 5 x 5mm Dual U-Groove Full Metal Pad
Mold Compound Name/Manufacturer:	Hitachi CEL 9220HF13
Mold Compound Flammability Rating:	V-O per UL94
Oxygen Rating Index:	None
Lead Frame Material:	Copper Base
Lead Finish, Composition / Thickness:	NiPdAu (Ni - 20~80uinch, Pd - 0.8~1.2uinch, Au - 0.12 ~ 0.5uinch)
Die Backside Preparation Method/Metallization:	Grinding
Die Separation Method:	Blade Sawing
Die Attach Supplier:	Dexter
Die Attach Material:	QMI509
Die Attach Method:	Epoxy
Bond Diagram Designation	10-06097
Wire Bond Method:	Thermosonic
Wire Material/Size:	Au. 0.8mil
Thermal Resistance Theta JA °C/W:	18 °C/W
Package Cross Section Yes/No:	N/A
Assembly Process Flow:	11-21099M
Name/Location of Assembly (prime) facility:	CML-RA
MSL Level	3
Reflow Profile	260C

ELECTRICAL TEST / FINISH DESCRIPTION	
Test Location:	CML-R

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

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 MSL1 168 Hrs 85°C/85%RH+3IR-Reflow, 260°C+0, -5°C	P
Pressure Cooker Test	121°C, 100%RH, 15 Psig Precondition: JESD22 Moisture Sensitivity MSL1 168 Hrs 85°C/85%RH+3IR-Reflow, 260°C+0, -5°C	P
High Accelerated Saturation Test (HAST)	130°C, 3.63V, 85% RH Precondition: JESD22 Moisture Sensitivity MSL1 168 Hrs 85°C/85%RH+3IR-Reflow, 260°C+0, -5°C	P
Acoustics Microscopy	Cypress Spec. 12-00292	P
Thermal Shock	125C, -55C Cypress Spec. 25-00014	P
Solderability	Cypress Spec. 25-00018	P
Internal Visual	Cypress Spec. 12-00292	P
X-ray	Cypress Spec. 12-00292	P
Die Shear	Cypress Spec. 12-00292	P
Ball Shear	Cypress Spec. 24-00018	P
External Visual	Cypress Spec. 12-00292/25-00103	P
Bond Pull	Cypress Spec. 12-00292	P
Physical Dimension	Cypress Spec. 25-00031	P

Reliability Test Data

QTP #: 052610

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: ACOUSTIC, MSL1							
CY8C21434 (8C21434AT)	2511702	610523106	CML-RA	COMP	15	0	
CY8C21434 (8C21434AT)	2510578	610523107	CML-RA	COMP	15	0	
CY8C21434 (8C21434AT)	2510524	610523105	CML-RA	COMP	15	0	
STRESS: BALL SHEAR							
CY8C21434 (8C21434AT)	2511702	610523106	CML-RA	COMP	10	0	
STRESS: BOND PULL							
CY8C21434 (8C21434AT)	2511702	610523106	CML-RA	COMP	10	0	
STRESS: DIE SHEAR							
CY8C21434 (8C21434AT)	2511702	610523106	CML-RA	COMP	15	0	
STRESS: EXTERNAL VISUAL							
CY8C21434 (8C21434AT)	2511702	610523106	CML-RA	COMP	15	0	
STRESS: INTERNAL VISUAL							
CY8C21434 (8C21434AT)	2511702	610523106	CML-RA	COMP	5	0	
STRESS: HI-ACCEL SATURATION TEST, 130C, 3.63V, 85%RH, PRE COND 168 HR 85C/85%RH, MSL1							
CY8C21434 (8C21434AT)	2511702	610523106	CML-RA	128	47	0	
STRESS: PRESSURE COOKER TEST, 121C, 100%RH, 15 Psig, PRE COND 168H 85C/85%RH, MSL1							
CY8C21434 (8C21434AT)	2511702	610523106	CML-RA	168	50	0	
STRESS: PHYSICAL DIMENSION							
CY8C21434 (8C21434AT)	2511702	610523106	CML-RA	COMP	5	0	
STRESS: TC COND. C -65C TO 150C, PRE COND 168 HR 85C/85%RH, MSL1							
CY8C21434 (8C21434AT)	2511702	610523106	CML-RA	300	50	0	
CY8C21434 (8C21434AT)	2510578	610523107	CML-RA	300	50	0	
CY8C21434 (8C21434AT)	2510524	610523105	CML-RA	300	49	0	
STRESS: SOLDERABILITY							
CY8C21434 (8C21434AT)	2511702	610523106	CML-RA	COMP	3	0	
CY8C21434 (8C21434AT)	2510578	610523107	CML-RA	COMP	3	0	
CY8C21434 (8C21434AT)	2510524	610523105	CML-RA	COMP	3	0	
STRESS: THERMAL SHOCK COND. B - 55C TO 125C							
CY8C21434 (8C21434AT)	2511702	610523106	CML-RA	100	50	0	
CY8C21434 (8C21434AT)	2511702	610523106	CML-RA	200	50	0	
STRESS: X-RAY							
CY8C21434 (8C21434AT)	2511702	610523106	CML-RA	COMP	15	0	