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Cypress Semiconductor
Package Qualification Report

QTP# 174101 VERSION **
October 2017

32-Pin QFN (5x5x0.6mm)
NiPdAu leadfinish, CuPd Wire
MSL3, 260C Reflow
CML-Philippines (RA)

FOR ANY QUESTIONS ON THIS REPORT, PLEASE CONTACT
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PACKAGE QUALIFICATION HISTORY

QTP Number	Description of Qualification Purpose	Date
174101	Qualification of 32-Pin QFN (5x5x0.6mm) Package in CML-Philippines (RA) using 0.8mil CuPd wire with GE-7470LA mold compound, QMI-509 die attach material, Copper leadframe and NiPdAu leadfinish at MSL3, 260C Reflow Temperature.	October 2017

MAJOR PACKAGE INFORMATION USED IN THIS QUALIFICATION	
Package Designation:	LQ32
Package Outline, Type, or Name:	32P QFN (5x5x0.6mm)
Mold Compound Name/Manufacturer:	GE-7470LA / Hitachi
Mold Compound Flammability Rating:	UL-94 : V-0 Pass
Mold Compound Alpha Emission Rate:	<0.1
Oxygen Rating Index: >28%	50% Typical
Lead Frame Designation:	Full Metal Pad
Lead Frame Material:	Copper
Substrate Material:	N/A
Lead Finish, Composition / Thickness:	NiPdAu
Die Backside Preparation Method/Metallization:	Backgrind
Die Separation Method:	100% Saw
Die Attach Supplier:	Henkel
Die Attach Material:	QMI-519
Bond Diagram Designation	002-09950
Wire Bond Method:	Thermosonic
Wire Material/Size:	CuPd / 0.8mil
Thermal Resistance Theta JA °C/W:	96 C/W
Package Cross Section Yes/No:	N/A
Assembly Process Flow:	001-68163
Name/Location of Assembly (prime) facility:	CML-Philippines (RA)
MSL LEVEL	3
REFLOW PROFILE	260C

ELECTRICAL TEST / FINISH DESCRIPTION	
Test Location:	CML (R)

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

RELIABILITY TESTS PERFORMED PER SPECIFICATION REQUIREMENTS

Stress/Test	Test Condition (Temp/Bias)	Result P/F
Pressure Cooker Test	JESD22-A102, 121 C, 100%RH, 15 PSIG Precondition: JESD22 Moisture Sensitivity Level (192 Hrs., 30 C°, 60% RH, 260C Reflow)	P
Temperature Cycle	MIL-STD-883C, Method 1010, Condition C, -65 C to 150 C Precondition: JESD22 Moisture Sensitivity Level (192 Hrs., 30 C°, 60% RH, 260C Reflow)	P
Acoustic Microscopy	J-STD-020 Precondition: JESD22 Moisture Sensitivity Level (192 Hrs., 30 C°, 60% RH, 260C Reflow)	P
Constructional Analysis	Criteria: Meet external and internal characteristics of package	P
High Accelerated Saturation Test (HAST)	JEDEC STD 22-A110, 130 C, 85%RH, 5.5V Precondition: JESD22 Moisture Sensitivity Level (192 Hrs., 30 C°, 60% RH, 260C Reflow)	P
X-Ray	MIL-STD-883 – 2012	P
High Temp Storage	JESD22-A103: 150 C, no bias	P
Bond Pull	MIL-STD-883 – Method 2011	P
Ball Shear	JESD22-B116A	P
Die Shear	MIL-STD-883, Method 2019	P
Internal Visual	MIL-STD-883-2014	P
Final Visual Inspection	JESD22-B101B	P

Reliability Test Data

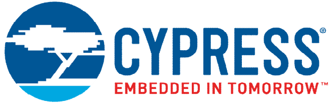
QTP #: 174101

Device	Package	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: ACOUSTIC, MSL3								
CYTMA445A (8CP206001AC)	LQ32	4523239	4523239_1	CML-RA	COMP	15	0	
CYTMA445A (8CP206001AC)	LQ32	4523239	4523239_2	CML-RA	COMP	15	0	
CYTMA445A (8CP206001AC)	LQ32	4523239	4523239_3	CML-RA	COMP	15	0	
STRESS: BALL SHEAR								
CYTMA445A (8CP206001AC)	LQ32	4523239	4523239_1	CML-RA	COMP	30	0	
CYTMA445A (8CP206001AC)	LQ32	4523239	4523239_2	CML-RA	COMP	30	0	
CYTMA445A (8CP206001AC)	LQ32	4523239	4523239_3	CML-RA	COMP	30	0	
STRESS: BOND PULL								
CYTMA445A (8CP206001AC)	LQ32	4523239	4523239_1	CML-RA	COMP	30	0	
CYTMA445A (8CP206001AC)	LQ32	4523239	4523239_2	CML-RA	COMP	30	0	
CYTMA445A (8CP206001AC)	LQ32	4523239	4523239_3	CML-RA	COMP	30	0	
STRESS: CONSTRUCTIONAL ANALYSIS								
CYTMA445A (8CP206001AC)	LQ32	4523239	4523239_1	CML-RA	COMP	5	0	
CYTMA445A (8CP206001AC)	LQ32	4523239	4523239_2	CML-RA	COMP	5	0	
CYTMA445A (8CP206001AC)	LQ32	4523239	4523239_3	CML-RA	COMP	5	0	
STRESS: DYE PENETRANT								
CYTMA445A (8CP206001AC)	LQ32	4523239	4523239_1	CML-RA	COMP	30	0	
CYTMA445A (8CP206001AC)	LQ32	4523239	4523239_2	CML-RA	COMP	30	0	
CYTMA445A (8CP206001AC)	LQ32	4523239	4523239_3	CML-RA	COMP	30	0	
STRESS: FINAL VISUAL INSPECTION								
CYTMA445A (8CP206001AC)	LQ32	4523239	4523239_1	CML-RA	COMP	659	0	
CYTMA445A (8CP206001AC)	LQ32	4523239	4523239_2	CML-RA	COMP	685	0	
CYTMA445A (8CP206001AC)	LQ32	4523239	4523239_3	CML-RA	COMP	676	0	
STRESS: HI-ACCEL SATURATION TEST, 130C, 5.5V, 85%RH, PRE COND 192 HR 30C/60%RH, MSL3								
CYTMA445A (8CP206001AC)	LQ32	4523239	4523239_1	CML-RA	96	30	0	
CYTMA445A (8CP206001AC)	LQ32	4523239	4523239_2	CML-RA	96	30	0	
CYTMA445A (8CP206001AC)	LQ32	4523239	4523239_3	CML-RA	96	30	0	

Reliability Test Data

QTP #: 174101

Device	Package	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: HIGH TEMPERATURE STORAGE								
CYTMA445A (8CP206001AC)	LQ32	4523239	4523239_1	CML-RA	500	80	0	
CYTMA445A (8CP206001AC)	LQ32	4523239	4523239_1	CML-RA	1000	80	0	
CYTMA445A (8CP206001AC)	LQ32	4523239	4523239_2	CML-RA	500	80	0	
CYTMA445A (8CP206001AC)	LQ32	4523239	4523239_2	CML-RA	1000	80	0	
CYTMA445A (8CP206001AC)	LQ32	4523239	4523239_3	CML-RA	500	80	0	
CYTMA445A (8CP206001AC)	LQ32	4523239	4523239_3	CML-RA	1000	80	0	
STRESS: INTERNAL VISUAL								
CYTMA445A (8CP206001AC)	LQ32	4523239	4523239_1	CML-RA	COMP	5	0	
CYTMA445A (8CP206001AC)	LQ32	4523239	4523239_2	CML-RA	COMP	5	0	
CYTMA445A (8CP206001AC)	LQ32	4523239	4523239_3	CML-RA	COMP	5	0	
STRESS: PRESSURE COOKER TEST								
CYTMA445A (8CP206001AC)	LQ32	4523239	4523239_1	CML-RA	168	80	0	
CYTMA445A (8CP206001AC)	LQ32	4523239	4523239_1	CML-RA	288	80	0	
CYTMA445A (8CP206001AC)	LQ32	4523239	4523239_2	CML-RA	168	80	0	
CYTMA445A (8CP206001AC)	LQ32	4523239	4523239_2	CML-RA	288	80	0	
CYTMA445A (8CP206001AC)	LQ32	4523239	4523239_3	CML-RA	168	80	0	
CYTMA445A (8CP206001AC)	LQ32	4523239	4523239_3	CML-RA	288	80	0	
STRESS: TC COND. C -65C TO 150C, PRECONDITION 192 HRS 30C/60%RH								
CYTMA445A (8CP206001AC)	LQ32	4523239	4523239_1	CML-RA	500	80	0	
CYTMA445A (8CP206001AC)	LQ32	4523239	4523239_1	CML-RA	1000	80	0	
CYTMA445A (8CP206001AC)	LQ32	4523239	4523239_2	CML-RA	500	80	0	
CYTMA445A (8CP206001AC)	LQ32	4523239	4523239_2	CML-RA	1000	80	0	
CYTMA445A (8CP206001AC)	LQ32	4523239	4523239_3	CML-RA	500	80	0	
CYTMA445A (8CP206001AC)	LQ32	4523239	4523239_3	CML-RA	1000	80	0	
STRESS: XRAY								
CYTMA445A (8CP206001AC)	LQ32	4523239	4523239_1	CML-RA	COMP	350	0	
CYTMA445A (8CP206001AC)	LQ32	4523239	4523239_2	CML-RA	COMP	350	0	
CYTMA445A (8CP206001AC)	LQ32	4523239	4523239_3	CML-RA	COMP	350	0	



Document History Page

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Rev.	ECN No.	Orig. of Change	Description of Change
**	5944059	HSTO	Initial spec release