

Cypress Semiconductor Package Qualification Report

QTP# 142801 VERSION **
December, 2014

8L SOIC (150mils)

NiPdAu, Au Wire

MSL3, 260C Reflow

CML-RA

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

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QTP Number	Description of Qualification Purpose	Date
142801	Qualification of 8L SOIC (150 mils) packages built at CML-RA (Autoline) using 0.8mil Au Wire, KE G3000DA mold compound, QMI509 epoxy and NiPdAu Leadfinish.	Dec 2014

MAJOR PACKAGE INFORMATION USED IN THIS QUALIFICATION	
Package Designation:	SW815
Package Outline, Type, or Name:	8LD SOIC (150mils)
Mold Compound Name/Manufacturer:	G3000DA / Kyocera
Mold Compound Flammability Rating:	V-0 / UL94
Mold Compound Alpha Emission Rate:	<0.1
Oxygen Rating Index: >28%	50% Typical
Lead Frame Designation:	FMP
Lead Frame Material:	Cu
Substrate Material:	N/A
Lead Finish, Composition / Thickness:	NiPdAu
Die Backside Preparation Method/Metallization:	Backgrind
Die Separation Method:	Wafer Saw
Die Attach Supplier:	Henkel
Die Attach Material:	QMI 509
Bond Diagram Designation	001-87480
Wire Bond Method:	Thermosonic
Wire Material/Size:	Au / 0.8 mil
Thermal Resistance Theta JA °C/W:	146C/W
Package Cross Section Yes/No:	No
Assembly Process Flow:	001-91441/M
Name/Location of Assembly (prime) facility:	CML-RA
MSL LEVEL	3
REFLOW PROFILE	260C

ELECTRICAL TEST / FINISH DESCRIPTION	
Test Location:	CML-RA

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
High Temperature Operating Life Early Failure Rate	Dynamic Operating Condition, Vcc = 3.6V, 125 C JESD22-A108	P
High Accelerated Saturation Test (HAST)	JEDEC STD 22-A110: 130C, 85%RH, 3.60V Precondition: JESD22 Moisture Sensitivity Level 3 (192 Hrs., 30 C°, 60% RH)	P
Pressure Cooker Test	JESD22-A102: 121 C, 100%RH, 15 PSIG Precondition: JESD22 Moisture Sensitivity Level 3 (192 Hrs., 30 C°, 60% RH)	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)	P
High Temp Storage	JESD22-A103: 150 C, no bias	P
Ball Shear	JESD22-B116A Cpk : 1.33, Ppk : 1.66	P
Acoustic Microscopy	J-STD-020 Precondition: JESD22 Moisture Sensitivity Level 3 (192 Hrs, 30 C°, 60% RH)	P
Bond Pull	MIL-STD-883 – Method 2011 Cpk : 1.33, Ppk : 1.66	P
Constructional Analysis	Criteria: Meet external and internal characteristics of Cypress package	P
Dye Penetrant Test	Test to determine the existence and extent of cracks, Criteria: No Package Crack	P
Solderability, Steam Aged	J-STD-002, JESD22-B102 95% solder coverage minimum	P



Reliability Test Data

QTP #: 142801

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
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STRESS: HIGH TEMPERATURE OPERATING LIFE, EARLY FAILURE RATE, 125C

FM24V01-G	2308254	611411119	CML-RA	96 HR	77	0	
FM24V01-G	2308254	611411120	CML-RA	96 HR	77	0	
FM24V01-G	2308254	611411119	CML-RA	168 HR	77	0	
FM24V01-G	2308254	611411120	CML-RA	168 HR	77	0	

STRESS: ACOUSTIC MICROSCOPY / MSL 3

FM24V01-G	2308254	611411119	CML-RA	COMP	15	0	
FM24V01-G	2308254	611411120	CML-RA	COMP	15	0	
FM24V01-G	2308254	611411121	CML-RA	COMP	15	0	

STRESS: BALL SHEAR

FM24V01-G	2308254	611411119	CML-RA	COMP	10	0	
FM24V01-G	2308254	611411120	CML-RA	COMP	10	0	
FM24V01-G	2308254	611411121	CML-RA	COMP	10	0	

STRESS: BOND PULL

FM24V01-G	2308254	611411119	CML-RA	COMP	10	0	
FM24V01-G	2308254	611411120	CML-RA	COMP	10	0	
FM24V01-G	2308254	611411121	CML-RA	COMP	10	0	

STRESS: CONSTRUCTIONAL ANALYSIS

FM24V01-G	2308254	611411119	CML-RA	COMP	5	0	
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STRESS: DYE PENETRATION TEST

FM24V01-G	2308254	611411119	CML-RA	COMP	15	0	
FM24V01-G	2308254	611411120	CML-RA	COMP	15	0	
FM24V01-G	2308254	611411121	CML-RA	COMP	15	0	



Reliability Test Data

QTP #: 142801

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: HIGH ACCELERATED SATURATION TEST (HAST) / MSL3							
FM24V01-G	2308254	611411119	CML-RA	128 HR	15	0	
FM24V01-G	2308254	611411120	CML-RA	128 HR	15	0	
FM24V01-G	2308254	611411121	CML-RA	128 HR	15	0	
STRESS: HIGH TEMPERATURE STORAGE							
FM24V01-G	2308254	611411119	CML-RA	500 HR	77	0	
STRESS: PRESSURE COOKER TEST / MSL3							
FM24V01-G	2308254	611411119	CML-RA	168 HR	77	0	
FM24V01-G	2308254	611411120	CML-RA	168 HR	77	0	
FM24V01-G	2308254	611411119	CML-RA	288 HR	77	0	
FM24V01-G	2308254	611411120	CML-RA	288 HR	77	0	
STRESS: SOLDERABILITY							
FM24V01-G	2308254	611411119	CML-RA	COMP	5	0	
FM24V01-G	2308254	611411120	CML-RA	COMP	5	0	
FM24V01-G	2308254	611411121	CML-RA	COMP	5	0	
STRESS: TEMPERATURE CYCLE TEST / MSL3							
FM24V01-G	2308254	611411119	CML-RA	500	77	0	
FM24V01-G	2308254	611411120	CML-RA	500	77	0	
FM24V01-G	2308254	611411121	CML-RA	500	77	0	
FM24V01-G	2308254	611411119	CML-RA	1000	77	0	
FM24V01-G	2308254	611411120	CML-RA	1000	77	0	
FM24V01-G	2308254	611411121	CML-RA	1000	77	0	



Document History Page

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Document Number: 001-95617

Rev.	ECN No.	Orig. of Change	Description of Change
**	4593104	BECK	Initial Release

Distribution: WEB

Posting: None