

Cypress Semiconductor Package Qualification Report

QTP# 142502 VERSION**
December, 2014

8-Lead SOIC (150 mils)
Pure Sn, CuPd Wire
MSL3, 260°C Reflow
UTAC Thailand Limited (UTL), Thailand (UT)

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

QTP Number	Description of Qualification Purpose	Date
142502	Qualification of 8-Lead SOIC Package at UTL-Thailand using TR20001AD Die, EME-G600 Mold Compound, 8600 Die Attach Epoxy, Pure Sn Leadfinish, 0.8 mil CuPd Wire at MSL3, 260C Reflow Temperature	Dec 2014

MAJOR PACKAGE INFORMATION USED IN THIS QUALIFICATION	
Package Designation:	SW815, SZ815
Package Outline, Type, or Name:	8-Lead SOIC (150 mils)
Mold Compound Name/Manufacturer:	EME-G600/Sumitomo
Mold Compound Flammability Rating:	UL-94 V-0
Mold Compound Alpha Emission Rate:	<0.1
Oxygen Rating Index:	37%
Lead Frame Material:	Copper
Lead Finish, Composition / Thickness:	Pure Sn
Die Backside Preparation Method/Metallization:	Backgrind
Die Separation Method:	Wafer Saw
Die Attach Supplier:	Henkel
Die Attach Material:	8600
Bond Diagram Designation	001-86067
Wire Bond Method:	Thermosonic
Wire Material/Size:	CuPd/0.8 mil
Thermal Resistance Theta JA °C/W:	59 °C/W
Package Cross Section Yes/No:	Yes
Assembly Process Flow:	001-95707
Name/Location of Assembly (prime) facility:	UTL-Thailand (UT)
MSL Level	3
Reflow Profile	260C

ELECTRICAL TEST/FINISH DESCRIPTION	
Test Location	UTL-Thailand

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

RELIABILITY TESTS PERFORMED PER SPECIFICATION REQUIREMENTS

Stress/Test	Test Condition (Temp/Bias)	Result P/F
Acoustic Microscopy	J-STD-020 Precondition: JESD22 Moisture Sensitivity Level (192 Hrs., 30°C, 60% RH, 260°C Reflow)	P
Ball Shear	JESD22-B116 Cpk : 1.33, Ppk : 1.66	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
Final Visual	JESD22-B101	P
High Accelerated Saturation Test (HAST)	JEDEC STD 22-A110: 130°C, 85%RH, 3.6V Precondition: JESD22 Moisture Sensitivity Level (192 Hrs., 30°C, 60% RH, 260°C Reflow)	P
High Temperature Operating Life Latent Failure Rate	Dynamic Operating Condition, Vcc Max =3.6 V, 125°C JESD22-A108	P
High Temp Storage	JESD22-A103:150°C, no bias	P
Internal Visual	MIL-STD-883-2014	P
Pressure Cooker	JESD22-A102: 121°C, 100%RH, 15 PSIG Precondition: JESD22 Moisture Sensitivity Level (192 Hrs., 30°C, 60% RH, 260°C Reflow)	P
Temperature Cycle	MIL-STD-883, Method 1010, Condition C, -65°C to 150°C Precondition: JESD22 Moisture Sensitivity Level (192 Hrs., 30°C, 60% RH, 260°C Reflow)	P



Reliability Test Data

QTP #: 142502

Device	Fab Lot #	Assy Lot #	Ass Loc	Duration	Samp	Rej	Failure Mechanism
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STRESS: ACOUSTIC, MSL3

FM25V02 (FM25V02A)	2338005	611425994	UT-Thailand	COMP	15	0	
FM25V02 (FM25V02A)	2338005	611425995	UT-Thailand	COMP	15	0	
FM25V02 (FM25V02A)	2338005	611425996	UT-Thailand	COMP	15	0	

STRESS: BALL SHEAR

FM25V02 (FM25V02A)	2338005	611425994	UT-Thailand	COMP	30	0	
FM25V02 (FM25V02A)	2338005	611425995	UT-Thailand	COMP	30	0	
FM25V02 (FM25V02A)	2338005	611425996	UT-Thailand	COMP	30	0	

STRESS: BOND PULL

FM25V02 (FM25V02A)	2338005	611425994	UT-Thailand	COMP	30	0	
FM25V02 (FM25V02A)	2338005	611425995	UT-Thailand	COMP	30	0	
FM25V02 (FM25V02A)	2338005	611425996	UT-Thailand	COMP	30	0	

STRESS: CONSTRUCTIONAL ANALYSIS

FM25V02 (FM25V02A)	2338005	611425996	UT-Thailand	COMP	5	0	
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STRESS: CROSS SECTION

FM25V02 (FM25V02A)	2338005	611425994	UT-Thailand	COMP	5	0	
FM25V02 (FM25V02A)	2338005	611425995	UT-Thailand	COMP	5	0	
FM25V02 (FM25V02A)	2338005	611425996	UT-Thailand	COMP	5	0	

STRESS: FINAL VISUAL

FM25V02 (FM25V02A)	2338005	611425994	UT-Thailand	COMP	978	0	
FM25V02 (FM25V02A)	2338005	611425995	UT-Thailand	COMP	978	0	
FM25V02 (FM25V02A)	2338005	611425996	UT-Thailand	COMP	978	0	

STRESS: HI-ACCEL SATURATION TEST, 130C, 85%RH, 3.6V, PRE COND 192 HR 30C/60%RH, MSL3

FM25V02 (FM25V02A)	2338005	611425994	UT-Thailand	96	25	0	
FM25V02 (FM25V02A)	2338005	611425995	UT-Thailand	96	25	0	
FM25V02 (FM25V02A)	2338005	611425996	UT-Thailand	96	25	0	

Reliability Test Data

QTP #: 142502

Device	Fab Lot #	Assy Lot #	Ass Loc	Duration	Samp	Rej	Failure Mechanism
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STRESS: HIGH TEMP DYNAMIC OPERATING LIFE-LATENT FAILURE RATE, 125C,3.6V

FM25V02 (FM25V02A)	2338005	611425994	UT-Thailand	1000	77	0	
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STRESS: HIGH TEMP STORAGE, 150C

FM25V02 (FM25V02A)	2338005	611425994	UT-Thailand	500	77	0	
FM25V02 (FM25V02A)	2338005	611425994	UT-Thailand	1000	77	0	
FM25V02 (FM25V02A)	2338005	611425995	UT-Thailand	500	77	0	
FM25V02 (FM25V02A)	2338005	611425995	UT-Thailand	1000	77	0	
FM25V02 (FM25V02A)	2338005	611425996	UT-Thailand	500	77	0	
FM25V02 (FM25V02A)	2338005	611425996	UT-Thailand	1000	77	0	

STRESS: INTERNAL VISUAL

FM25V02 (FM25V02A)	2338005	611425994	UT-Thailand	COMP	5	0	
FM25V02 (FM25V02A)	2338005	611425995	UT-Thailand	COMP	5	0	
FM25V02 (FM25V02A)	2338005	611425996	UT-Thailand	COMP	5	0	

STRESS: PRESSURE COOKER TEST, 121C, 100%RH, 15 Psig, PRE COND 192 HR 30C/60%RH, MSL3

FM25V02 (FM25V02A)	2338005	611425994	UT-Thailand	168	77	0	
FM25V02 (FM25V02A)	2338005	611425994	UT-Thailand	288	77	0	
FM25V02 (FM25V02A)	2338005	611425995	UT-Thailand	168	77	0	
FM25V02 (FM25V02A)	2338005	611425995	UT-Thailand	288	77	0	
FM25V02 (FM25V02A)	2338005	611425996	UT-Thailand	168	77	0	
FM25V02 (FM25V02A)	2338005	611425996	UT-Thailand	288	77	0	

STRESS: TEMPERATURE CYCLE COND. C -65C TO 150C, PRE COND 192 HRS 30C/60%RH, MSL3

FM25V02 (FM25V02A)	2338005	611425994	UT-Thailand	500	77	0	
FM25V02 (FM25V02A)	2338005	611425994	UT-Thailand	1000	77	0	
FM25V02 (FM25V02A)	2338005	611425995	UT-Thailand	500	77	0	
FM25V02 (FM25V02A)	2338005	611425995	UT-Thailand	1000	77	0	
FM25V02 (FM25V02A)	2338005	611425996	UT-Thailand	500	77	0	
FM25V02 (FM25V02A)	2338005	611425996	UT-Thailand	1000	77	0	



Document History Page

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THAILAND (UT)
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Rev.	ECN No.	Orig. of Change	Description of Change
**	4598405	JYF	Initial Spec Release.

Distribution: WEB

Posting: None