

Cypress Semiconductor Automotive Customer Specific Qualification Report

QTP# 144703 VERSION **

May, 2015

**Laser Grooving for Automotive F-RAM
130nm Technology Wafers from TI Fab**

UTL, Thailand (UT)

FOR ANY QUESTIONS ON THIS REPORT, PLEASE CONTACT
reliability@cypress.com or via a CYLINK CRM CASE

Prepared By:
Becky Thomas
Reliability Engineer

Reviewed By:
Rene Rodgers
Reliability Manager

Approved By:
Richard Oshiro
Reliability Director

PRODUCT QUALIFICATION HISTORY

Company Confidential

A printed copy of this document is considered uncontrolled. Refer to online copy for latest revision.

Page 1 of 7

QTP Number	Description of Qualification Purpose	Date
144703	Laser Grooving at UTL (UT) Assembly Site on Automotive F-RAM 130nm Technology Wafers from TI Fab	May 2015

MAJOR PACKAGE INFORMATION USED IN THIS QUALIFICATION	
Package Designation:	SZ815/SW815
Package Outline, Type, or Name:	8-LD SOIC, 150-mil
Mold Compound Name/Manufacturer:	G600 / Sumitomo
Mold Compound Flammability Rating:	UL 94 V=0 pass
Mold Compound Alpha Emission Rate:	<0.1
Oxygen Rating Index: >28%	37%
Lead Frame Designation:	FMP
Lead Frame Material:	Copper
Substrate Material:	N/A
Lead Finish, Composition / Thickness:	Matte Sn
Die Backside Preparation Method/Metallization:	Backgrind
Die Separation Method:	Laser/100% Saw Through
Die Attach Supplier:	Henkel
Die Attach Material:	8200
Bond Diagram Designation	001-86067
Wire Bond Method:	Thermosonic
Wire Material/Size:	Au / 0.8 mil
Thermal Resistance Theta JA °C/W:	59 C/W
Package Cross Section Yes/No:	Yes
Assembly Process Flow:	001-85790
Name/Location of Assembly (prime) facility:	UTAC, Thailand (UT)
MSL LEVEL	3
REFLOW PROFILE	260C

ELECTRICAL TEST / FINISH DESCRIPTION	
Test Location:	UTAC, Thailand

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
Data Retention (Plastic)	150 C, non-biased, 500 hours, 1,000 hours	P
High Accelerated Saturation Test (HAST)	JESD22-A110, 130 C, 85%RH, 3.60V Precondition: JESD22-A113 Moisture Sensitivity Level (192 Hrs., 30 C°, 60% RH)	P
Temperature Cycle	JESD22- A104, -65 C to 150 C Precondition: JESD22-A113 Moisture Sensitivity Level (192 Hrs., 30 C°, 60% RH)	P
Pressure Cooker Test	JESD22-A102, 121 C, 100%RH, 15 PSIG Precondition: JESD22-A113 Moisture Sensitivity Level (192 Hrs., 30 C°, 60% RH)	P
Wire Bond Shear	AEC Q100-001	P
Wire Bond Pull	Mil-Std 883, Method 2011	P



Reliability Test Data

QTP #: 144703

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration/	Samp	Rej	Failure Mechanism
STRESS: DATA RETENTION (150C, 500 and 1,000 hours, non-biased)							
CY15B256Q-SXA	4440062	LGQTP1	UTL-UT	500	80	0	
CY15B256Q-SXA	4440062	LGQTP1	UTL-UT	1000	80	0	
CY15B256Q-SXA	4440062	LGQTP2	UTL-UT	500	80	0	
CY15B256Q-SXA	4440062	LGQTP2	UTL-UT	1000	80	0	
CY15B256Q-SXA	4440062	LGQTP3	UTL-UT	500	80	0	
CY15B256Q-SXA	4440062	LGQTP3	UTL-UT	1000	80	0	
STRESS: Highly Accelerated Saturation Test (HAST) (130C, 85%RH, Biased at 3.60V), with MSL3 Preconditioning – 96 hours							
CY15B256Q-SXA	4440062	LGQTP1	UTL-UT	96	80	0	
CY15B256Q-SXA	4440062	LGQTP2	UTL-UT	96	80	0	
CY15B256Q-SXA	4440062	LGQTP3	UTL-UT	96	80	0	
STRESS: TEMPERATURE CYCLE, CONDITION C (-65C TO 150C), with MSL3 Preconditioning							
CY15B256Q-SXA	4440062	LGQTP1	UTL-UT	500	80	0	
CY15B256Q-SXA	4440062	LGQTP1	UTL-UT	1000	80	0	
CY15B256Q-SXA	4440062	LGQTP2	UTL-UT	500	80	0	
CY15B256Q-SXA	4440062	LGQTP2	UTL-UT	1000	80	0	
CY15B256Q-SXA	4440062	LGQTP3	UTL-UT	500	79	0	
CY15B256Q-SXA	4440062	LGQTP3	UTL-UT	1000	79	0	



Reliability Test Data

QTP #: 144703

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration/	Samp	Rej	Failure Mechanism
STRESS: PRESSURE COOKER TEST (121C, 100%RH), with MSL3 Preconditioning, 96 hours							
CY15B256Q-SXA	4440062	LGQTP1	UTL-UT	96	80	0	
CY15B256Q-SXA	4440062	LGQTP1	UTL-UT	168	80	0	
CY15B256Q-SXA	4440062	LGQTP2	UTL-UT	96	80	0	
CY15B256Q-SXA	4440062	LGQTP2	UTL-UT	168	80	0	
CY15B256Q-SXA	4440062	LGQTP3	UTL-UT	96	80	0	
CY15B256Q-SXA	4440062	LGQTP3	UTL-UT	168	80	0	
STRESS: WIRE BALL SHEAR							
CY15B256Q-SXA	4440062	LGQTP1	UTL-UT	96	10	0	
CY15B256Q-SXA	4440062	LGQTP2	UTL-UT	96	10	0	
CY15B256Q-SXA	4440062	LGQTP3	UTL-UT	96	10	0	
STRESS: WIRE BOND PULL							
CY15B256Q-SXA	4440062	LGQTP1	UTL-UT	96	10	0	
CY15B256Q-SXA	4440062	LGQTP2	UTL-UT	96	10	0	
CY15B256Q-SXA	4440062	LGQTP3	UTL-UT	96	10	0	



Document History Page

Document Title: QTP#144703: LASER GROOVING AT UTL (UT) ASSEMBLY SITE ON AUTOMOTIVE F-RAM
130NM TECHNOLOGY WAFERS FROM TI FAB
Document Number: 001-97616

Rev.	ECN No.	Orig. of Change	Description of Change
**	4764825	BECK	Initial Release

Distribution: WEB

Posting: None