Please note that Cypress is an Infineon Technologies Company.

The document following this cover page is marked as “Cypress” document as this is the company that originally developed the product. Please note that Infineon will continue to offer the product to new and existing customers as part of the Infineon product portfolio.

Continuity of document content

The fact that Infineon offers the following product as part of the Infineon product portfolio does not lead to any changes to this document. Future revisions will occur when appropriate, and any changes will be set out on the document history page.

Continuity of ordering part numbers

Infineon continues to support existing part numbers. Please continue to use the ordering part numbers listed in the datasheet for ordering.

www.infineon.com

Cypress Semiconductor
Package Qualification Report

QTP# 163503 VERSION **
December 2016

54L TSOP (22.4x11.84x1.0mm)
Matte Sn leadfinish, Au Wire
MSL3, 260C Reflow
Chipmos-Taiwan (GM)

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

Prepared By:
Honesto Sintos
Reliability Engineer

Reviewed By:
Rene Rodgers
Reliability Manager

Approved By:
David Hoffman
Reliability Director

PACKAGE QUALIFICATION HISTORY

QTP Number	Description of Qualification Purpose	Date
163503	Qualification of 54L-TSOP II (22.4x11.84x1.0mm) Package in Chipmos-Taiwan (GM) using 0.7mil Au wire with Hitachi CEL-9200HF-U mold compound, Hitachi EN4900 die attach material, Cu leadframe and Matte Sn at MSL3, 260C Reflow Temperature	Dec 2016

MAJOR PACKAGE INFORMATION USED IN THIS QUALIFICATION	
Package Designation:	ZW54
Package Outline, Type, or Name:	54L-TSOP II 22.4x11.84x1.0mm
Mold Compound Name/Manufacturer:	CEL-9200HF-U / Hitachi
Mold Compound Flammability Rating:	N/A
Mold Compound Alpha Emission Rate:	max. 0.0050 count/cm2·
Oxygen Rating Index: >28%	N/A
Lead Frame Designation:	Full Metal Pad
Lead Frame Material:	Copper
Substrate Material:	N/A
Lead Finish, Composition / Thickness:	Matte Sn
Die Backside Preparation Method/Metallization:	Wafer Backgrind
Die Separation Method:	Wafer Saw
Die Attach Supplier:	Hitachi
Die Attach Material:	EN4900
Bond Diagram Designation	002-12014
Wire Bond Method:	Thermosonic
Wire Material/Size:	Au / 0.7 mil
Thermal Resistance Theta JA °C/W:	36.7 for 7C14104C 40.1 for 7C17165A
Package Cross Section Yes/No:	Yes
Assembly Process Flow:	49-77999
Name/Location of Assembly (prime) facility:	Chipmos-Taiwan (GM)
MSL LEVEL	3
REFLOW PROFILE	260C

ELECTRICAL TEST / FINISH DESCRIPTION	
Test Location:	CML-Philippines (R), Chipmos-Taiwan (GO)

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 Accelerated Saturation Test (HAST)	JESD22-A110, 130C, 3.65V, 85%RH Precondition: JESD22-A113 Moisture Sensitivity MSL 3 192 Hrs, 30C/60%RH+3IR-Reflow, 260°C+0, -5°C	P
Temperature Cycle	JESD22-A104, -65°C to 150°C Precondition: JESD22-A113 Moisture Sensitivity MSL 3 192 Hrs, 30C/60%RH+3IR-Reflow, 260°C+0, -5°C	P
Pressure Cooker	JESD22-A102, 121C, 100%RH, 15 Psig Precondition: JESD22-A113 Moisture Sensitivity MSL 3 192 Hrs, 30C/60%RH+3IR-Reflow, 260°C+0, -5°C	P
Acoustic	J-STD-020 Precondition: JESD22-A113 Moisture Sensitivity MSL 3 192 Hrs, 30C/60%RH+3IR-Reflow, 260C+0, -5C	P
X-Ray	MIL-STD-883 – 2012	P
Final Visual Inspection	JESD22-B101B	P
Ball Shear	JESD22-B116A	P
Bond Pull	Mil-Std 883, Method 2011	P
Electrostatic Discharge Charge Device Model (ESD-CDM)	500V, JESD22-C101	P
Physical Dimension	MIL-STD-1835, JESD22-B100	P
Constructional Analysis	Criteria: Meet external and internal characteristics of Cypress package	P
Solderability	JESD22-B102	P

Reliability Test Data

QTP #: 163503

Device	Package	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: ACOUSTIC, MSL3								
CY7C1069G (7C171069A)	ZW54	9511008	611630646	GM-T	COMP	15	0	
CY7C1069G (7C171069A)	ZW54	9511008	611630647	GM-T	COMP	15	0	
CY14B104M (7C1404B2C)	ZW54	4551256	611628480	GM-T	COMP	15	0	
STRESS: BALL SHEAR								
CY7C1069G (7C171069A)	ZW54	9511008	611630646	GM-T	COMP	10	0	
CY7C1069G (7C171069A)	ZW54	9511008	611630647	GM-T	COMP	10	0	
CY14B104M (7C1404B2C)	ZW54	4551256	611628480	GM-T	COMP	10	0	
STRESS: BOND PULL								
CY7C1069G (7C171069A)	ZW54	9511008	611630646	GM-T	COMP	10	0	
CY7C1069G (7C171069A)	ZW54	9511008	611630647	GM-T	COMP	10	0	
CY14B104M (7C1404B2C)	ZW54	4551256	611628480	GM-T	COMP	10	0	
STRESS: CONSTRUCTIONAL ANALYSIS								
CY7C1069G (7C171069A)	ZW54	9511008	611630646	GM-T	COMP	5	0	
CY7C1069G (7C171069A)	ZW54	9511008	611630647	GM-T	COMP	5	0	
CY14B104M (7C1404B2C)	ZW54	4551256	611628480	GM-T	COMP	5	0	
STRESS: DIE SHEAR								
CY7C1069G (7C171069A)	ZW54	9511008	611630646	GM-T	COMP	10	0	
CY7C1069G (7C171069A)	ZW54	9511008	611630647	GM-T	COMP	10	0	
CY14B104M (7C1404B2C)	ZW54	4551256	611628480	GM-T	COMP	10	0	
STRESS: ESD-CDM								
CY7C1069G (7C171069A)	ZW54	9511008	611630646	GM-T	500	9	0	
STRESS: FINAL VISUAL INSPECTION								
CY7C1069G (7C171069A)	ZW54	9511008	611630646	GM-T	COMP	898	0	
CY7C1069G (7C171069A)	ZW54	9511008	611630647	GM-T	COMP	899	0	
CY14B104M (7C1404B2C)	ZW54	4551256	611628480	GM-T	COMP	873	0	
STRESS: HI-ACCEL SATURATION TEST, 130C, 3.65V, 85%RH, PRE COND 192 HR 30C/60%RH, MSL3								
CY7C1069G (7C171069A)	ZW54	9511008	611630646	GM-T	96	30	0	
CY7C1069G (7C171069A)	ZW54	9511008	611630647	GM-T	96	30	0	
CY14B104M (7C1404B2C)	ZW54	4551256	611628480	GM-T	96	30	0	

Reliability Test Data

QTP #: 163503

Device	Package	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: PHYSICAL DIMENSION								
CY7C1069G (7C171069A)	ZW54	9511008	611630646	GM-T	COMP	10	0	
CY7C1069G (7C171069A)	ZW54	9511008	611630647	GM-T	COMP	10	0	
CY14B104M (7C1404B2C)	ZW54	4551256	611628480	GM-T	COMP	10	0	
STRESS: PRESSURE COOKER TEST								
CY7C1069G (7C171069A)	ZW54	9511008	611630646	GM-T	168	79	0	
STRESS: SOLDERABILITY								
CY7C1069G (7C171069A)	ZW54	9511008	611630646	GM-T	COMP	3	0	
STRESS: TC COND. C -65C TO 150C, PRECONDITION 192 HRS 30C/60%RH								
CY7C1069G (7C171069A)	ZW54	9511008	611630646	GM-T	500	80	0	
CY7C1069G (7C171069A)	ZW54	9511008	611630646	GM-T	1000	80	0	
CY7C1069G (7C171069A)	ZW54	9511008	611630647	GM-T	500	80	0	
CY7C1069G (7C171069A)	ZW54	9511008	611630647	GM-T	1000	80	0	
CY14B104M (7C1404B2C)	ZW54	4551256	611628480	GM-T	500	80	0	
STRESS: X-RAY								
CY7C1069G (7C171069A)	ZW54	9511008	611630646	GM-T	COMP	15	0	
CY7C1069G (7C171069A)	ZW54	9511008	611630647	GM-T	COMP	15	0	
CY14B104M (7C1404B2C)	ZW54	4551256	611628480	GM-T	COMP	15	0	

Document History Page

Document Title:QTP#163503: 54L TSOP (22.4x11.84x1.0mm) Matte Sn leadfinish, Au Wire MSL3, 260C Reflow Chipmos-Taiwan (GM)
Document Number: 002-18210

Rev.	ECN No.	Orig. of Change	Description of Change
**	5554828	HSTO	Initial spec release