



Cypress Semiconductor Corporation – An Infineon Technologies Company
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PRODUCT CHANGE NOTIFICATION

PCN: PCN201502A

Date: April 24, 2020

Subject: Addendum to PCN201502 - Qualification of Fab 25 as an Alternate Wafer Fab Site and a Bond Wire Change for Industrial-Grade 4Kb, 16Kb and 64Kb F-RAM Products

To: PCN Coordinator PCN Coordinator
FUTURE
PCN.System@Future.ca

Change Type: Major

Description of Change:

The purpose of this addendum is to update the affected parts list and to attached QTP194521 package qualification report missed in the initial PCN201502. Refer to the “Remark” in the affected parts list.

Cypress announced the qualification of Fab 25 (5204 East Ben White Boulevard, Austin, TX78741, USA) as an alternate wafer fab site for industrial-grade 4Kb, 16Kb and 64Kb F-RAM products. The new industrial-grade 4Kb, 16Kb and 64Kb F-RAM products are form, fit and function compatible with the current industrial-grade 4Kb, 16Kb and 64Kb F-RAM products manufactured at Global Foundries. Additionally, for products in the DFN package, the wire material is changed from Au to CuPdAu. There will be no change to the existing marketing part numbers.

Benefit of Change:

Qualification of alternate manufacturing sites and technologies is part of Cypress’ ongoing flexible manufacturing initiative. The goal of the flexible manufacturing initiative is to provide the means for Cypress to continue to meet delivery commitments through dynamic, changing market conditions.

Part Numbers Affected: 34

See the attached ‘Affected Parts List’ file for a list of all part numbers affected by this change. Note that any new parts that are introduced after the publication of this PCN will include all changes outlined in this

Qualification Status:

This wafer fab site has been qualified through a series of tests documented in the Qualification Test Plan QTP#192810 and QTP#194521. These qualification reports can be found as attachments to this PCN or by visiting www.cypress.com and typing the QTP number in the keyword search window.

Sample Status:

Please review the attached 'Affected Parts List' file for a list of affected part numbers with their associated Wafer Fab site sample ordering part numbers. Samples are available now unless there is an indication that the sample ordering part numbers are subject to lead times. If you require qualification samples, please contact your local Cypress sales representative as soon as possible, preferably within 30 days of the date of this PCN, to place any sample orders.

Approximate Implementation Date:

Effective 90 days from the date of this notification or upon customer approval, whichever comes first, all shipments Industrial part numbers in the attached file will be supplied from Fab25 or other approved wafer fabrication sites.

Anticipated Impact:

Products fabricated at the new site are completely compatible with existing products from form, fit, functional, parametric and quality performance perspectives.

Cypress also recommends that customers take this opportunity to review these changes against current application notes, system design considerations and customer environment conditions to assess impact (if any) to their application.

Method of Identification:

Cypress maintains traceability of product to wafer level, including wafer fabrication location, through the lot number marked on the package.

Response Required:

No response is required.

For additional information regarding this change, contact your local sales representative or contact the PCN Administrator at pcn_adm@cypress.com.

Sincerely,

Cypress PCN Administration

Item	Marketing Part Number	Sample Ordering Part Number	Sample Availability	Remark
1	FM24C04B-G	FM24C04B8-G	WW1720	
2	FM24C04B-GTR	FM24C04B8-G	WW1720	Added in PCN201502A
3	FM24C16B-G	FM24C16B8-G	WW1720	
4	FM24C16B-GTR	FM24C16B8-G	WW1720	Added in PCN201502A
5	FM24C64B-G	FM24C64B8-G	Available	
6	FM24C64B-GTR	FM24C64B8-G	Available	Added in PCN201502A
7	FM24CL04B-G	FM24CL04B8-G	WW1720	
8	FM24CL04B-GTR	FM24CL04B8-G	WW1720	Added in PCN201502A
9	FM24CL16B-DG	FM24CL16B8-DG	WW1720	
10	FM24CL16B-DGTR	FM24CL16B8-DG	WW1720	Added in PCN201502A
11	FM24CL16B-G	FM24CL16B8-G	WW1720	
12	FM24CL16B-GTR	FM24CL16B8-G	WW1720	Added in PCN201502A
13	FM24CL64B-DG	FM24CL64B8-DG	Available	
14	FM24CL64B-DGTR	FM24CL64B8-DG	Available	Added in PCN201502A
15	FM24CL64B-G	FM24CL64B8-G	Available	
16	FM24CL64B-GTR	FM24CL64B8-G	Available	Added in PCN201502A
17	FM25040B-G	FM25040B8-G	WW1720	
18	FM25040B-GTR	FM25040B8-G	WW1720	Added in PCN201502A
19	FM25640B-G	FM25640B8-G	Available	
20	FM25640B-GTR	FM25640B8-G	Available	Added in PCN201502A
21	FM25C160B-G	FM25C160B8-G	WW1720	
22	FM25C160B-GTR	FM25C160B8-G	WW1720	Added in PCN201502A
23	FM25CL64B-DG	FM25CL64B8-DG	Available	
24	FM25CL64B-DGTR	FM25CL64B8-DG	Available	Added in PCN201502A
25	FM25CL64B-G	FM25CL64B8-G	Available	
26	FM25CL64B-GTR	FM25CL64B8-G	Available	Added in PCN201502A
27	FM25L04B-DG	FM25L04B8-DG	WW1720	
28	FM25L04B-DGTR	FM25L04B8-DG	WW1720	Added in PCN201502A
29	FM25L04B-G	FM25L04B8-G	WW1720	
30	FM25L04B-GTR	FM25L04B8-G	WW1720	Added in PCN201502A
31	FM25L16B-DG	FM25L16B8-DG	WW1720	
32	FM25L16B-DGTR	FM25L16B8-DG	WW1720	Added in PCN201502A
33	FM25L16B-G	FM25L16B8-G	WW1720	

34	FM25L16B-GTR	FM25L16B8-G	WW1720	Added in PCN201502A
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Cypress Semiconductor Package Qualification Report

QTP# 194521 VERSION
March 2020**

**8-Lead TDFN (4.0x 4.5x0.8mm)
Pure Sn Leadfinish
MSL3, 260°C Reflow
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
194521	Qualification of 8-Lead TDFN (4.0x 4.5x0.8mm) Side-by-Side Dies at UTL-Thailand (UT) using EME-G770 Mold Compound, 8200 Die Attach Epoxy, Pure Sn Leadfinish at MSL3, 260C Reflow Temperature	March 2020

MAJOR PACKAGE INFORMATION USED IN THIS QUALIFICATION	
Package Designation:	LH08
Package Outline, Type, or Name:	TDFN (4.0x 4.5x0.8mm)
Mold Compound Name/Manufacturer:	EME-G770/Sumitomo
Mold Compound Flammability Rating:	V-0 UL94
Lead Frame Designation:	Full Metal Paddle (FMP)
Lead Frame Material:	Copper
Lead Finish, Composition / Thickness:	Pure Sn
Die Backside Preparation Method/Metallization:	Backgrind
Die Separation Method:	Saw Process
Die Attach Supplier:	Henkel
Die Attach Material:	8200
Bond Diagram Designation	002-27959
Wire Bond Method:	Thermosonic
Package Cross Section Yes/No:	Yes
Assembly Process Flow:	002-29769
Name/Location of Assembly (prime) facility:	UTL-Thailand (UT)
MSL Level	3
Reflow Profile	260

ELECTRICAL TEST / FINISH DESCRIPTION	
Test Location:	UTL-Thailand (UT)

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	P
Bond Pull	MIL-STD-883 – Method 2011	P
Constructional Analysis	Criteria: Meet external and internal characteristics of Cypress package	P
Data Retention (Plastic)	125°C, non-biased	P
Final Visual Inspection	JESD22-B101	P
High Accelerated Saturation Test (HAST)	JEDEC STD 22-A110: 130°C, 85%RH, 3.65V Precondition: JESD22 Moisture Sensitivity Level (192 Hrs., 30°C, 60% RH, 260°C Reflow)	P
High Temperature Operating Life Latent Failure Rate	JESD22-A108, 125°C Dynamic Operating Condition, Vcc = 3.6V	P
Internal Visual Inspection	MIL-STD-883-2014	P
Pressure Cooker Test	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
X-Ray	MIL-STD-883 - 2012	P

Reliability Test Data

QTP #: 194521

<i>Device</i>	<i>Package</i>	<i>Fab Lot #</i>	<i>Assy Lot #</i>	<i>Assy Loc</i>	<i>Duration</i>	<i>SampRej</i>	<i>Failure Mechanism</i>
STRESS: ACOUSTIC, MSL3							
FM25CL64B8 (FPP25CL64)	LH08	2918000	611934862	UT-Thailand	COMP	22	0
FM24CL64B8 (FPP24CL64)	LH08	2918000	611934860	UT-Thailand	COMP	22	0
FM25L16B8 (FPP25L16)	LH08	2918000	611934863	UT-Thailand	COMP	22	0
STRESS: BALL SHEAR							
FM25CL64B8 (FPP25CL64)	LH08	2918000	611934862	UT-Thailand	COMP	5	0
FM24CL64B8 (FPP24CL64)	LH08	2918000	611934860	UT-Thailand	COMP	5	0
FM25L16B8 (FPP25L16)	LH08	2918000	611934863	UT-Thailand	COMP	5	0
STRESS: BOND PULL							
FM25CL64B8 (FPP25CL64)	LH08	2918000	611934862	UT-Thailand	COMP	5	0
FM24CL64B8 (FPP24CL64)	LH08	2918000	611934860	UT-Thailand	COMP	5	0
FM25L16B8 (FPP25L16)	LH08	2918000	611934863	UT-Thailand	COMP	5	0
STRESS: CONSTRUCTIONAL ANALYSIS							
FM25CL64B8 (FPP25CL64)	LH08	2918000	611934862	UT-Thailand	COMP	5	0
STRESS: CROSS SECTION							
FM25CL64B8 (FPP25CL64)	LH08	2918000	611934862	UT-Thailand	COMP	5	0
FM24CL64B8 (FPP24CL64)	LH08	2918000	611934860	UT-Thailand	COMP	5	0
FM25L16B8 (FPP25L16)	LH08	2918000	611934863	UT-Thailand	COMP	5	0
STRESS: DATA RETENTION, 125C							
FM25CL64B8 (FPP25CL64)	SW815	2911000	611933571	UT-Thailand	500	80	0
FM25CL64B8 (FPP25CL64)	SW815	2911000	611933571	UT-Thailand	1000	80	0
FM25CL64B8 (FPP25CL64)	SW815	2911000	611933571	UT-Thailand	1500	80	0
FM24CL04 (FM24CL04)	SW815	2407008	611507307	UT-Thailand	500	80	0
FM24CL04 (FM24CL04)	SW815	2407008	611507307	UT-Thailand	1000	80	0
FM24CL04 (FM24CL04)	SW815	2407008	611507308	UT-Thailand	500	80	0
FM24CL04 (FM24CL04)	SW815	2407008	611507308	UT-Thailand	1000	80	0
FM24CL04 (FM24CL04)	SW815	2407008	611507309	UT-Thailand	500	80	0
FM24CL04 (FM24CL04)	SW815	2407008	611507309	UT-Thailand	1000	80	0

Reliability Test Data

QTP #: 194521

<i>Device</i>	<i>Package</i>	<i>Fab Lot #</i>	<i>Assy Lot #</i>	<i>Assy Loc</i>	<i>Duration</i>	<i>SampRej</i>	<i>Failure Mechanism</i>
STRESS: FINAL VISUAL							
FM25CL64B8 (FPP25CL64)	LH08	2918000	611934862	UT-Thailand	COMP	1184	0
FM24CL64B8 (FPP24CL64)	LH08	2918000	611934860	UT-Thailand	COMP	1158	0
FM25L16B8 (FPP25L16)	LH08	2918000	611934863	UT-Thailand	COMP	1149	0
STRESS: HIGH TEMP DYNAMIC OPERATING LIFE-LATENT FAILURE RATE (125C, 3.6V, Vcc Max)							
FM25CL64B8 (FPP25CL64)	LH08	2918000	611934862	UT-Thailand	500	120	0
FM25CL64B8 (FPP25CL64)	LH08	2918000	611934862	UT-Thailand	1000	120	0
STRESS: HI-ACCEL SATURATION TEST, 130C, 3.65V, 85%RH, PRE COND 192 HR 30C/60%RH, MSL3							
FM25CL64B8 (FPP25CL64)	LH08	2918000	611934862	UT-Thailand	96	28	0
FM24CL64B8 (FPP24CL64)	LH08	2918000	611934860	UT-Thailand	96	28	0
FM25L16B8 (FPP25L16)	LH08	2918000	611934863	UT-Thailand	96	28	0
STRESS: INTERNAL VISUAL							
FM25CL64B8 (FPP25CL64)	LH08	2918000	611934862	UT-Thailand	COMP	5	0
FM24CL64B8 (FPP24CL64)	LH08	2918000	611934860	UT-Thailand	COMP	5	0
FM25L16B8 (FPP25L16)	LH08	2918000	611934863	UT-Thailand	COMP	5	0
STRESS: PRESSURE COOKER TEST (121C, 100%RH), 15 Psig, PRE COND 192 HR 30C/60%RH (MSL3)							
FM25CL64B8 (FPP25CL64)	LH08	2918000	611934862	UT-Thailand	168	28	0
FM25CL64B8 (FPP25CL64)	LH08	2918000	611934862	UT-Thailand	288	28	0
FM24CL64B8 (FPP24CL64)	LH08	2918000	611934860	UT-Thailand	168	28	0
FM24CL64B8 (FPP24CL64)	LH08	2918000	611934860	UT-Thailand	288	28	0
FM25L16B8 (FPP25L16)	LH08	2918000	611934863	UT-Thailand	168	28	0
FM25L16B8 (FPP25L16)	LH08	2918000	611934863	UT-Thailand	288	28	0

Reliability Test Data

QTP #: 194521

<i>Device</i>	<i>Package</i>	<i>Fab Lot #</i>	<i>Assy Lot #</i>	<i>Assy Loc</i>	<i>Duration</i>	<i>SampRej</i>	<i>Failure Mechanism</i>
STRESS: TC COND. C -65C TO 150C, PRE COND 192 HR 30C/60%RH, MSL3							
FM25CL64B8 (FPP25CL64)	LH08	2918000	611934862	UT-Thailand	500	28	0
FM25CL64B8 (FPP25CL64)	LH08	2918000	611934862	UT-Thailand	100	28	0
FM24CL64B8 (FPP24CL64)	LH08	2918000	611934860	UT-Thailand	500	28	0
FM24CL64B8 (FPP24CL64)	LH08	2918000	611934860	UT-Thailand	1000	28	0
FM25L16B8 (FPP25L16)	LH08	2918000	611934863	UT-Thailand	500	28	0
FM25L16B8 (FPP25L16)	LH08	2918000	611934863	UT-Thailand	1000	28	0
STRESS: X-RAY							
FM25CL64B8 (FPP25CL64)	LH08	2918000	611934862	UT-Thailand	COMP	15	0
FM24CL64B8 (FPP24CL64)	LH08	2918000	611934860	UT-Thailand	COMP	15	0
FM25L16B8 (FPP25L16)	LH08	2918000	611934863	UT-Thailand	COMP	15	0



Document History Page

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Document Number: 002-29940

Rev.	ECN No.	Orig. of Change	Description of Change
**	6829033	JYF	Initial spec release.