



Cypress Semiconductor Corporation – An Infineon Technologies Company  
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## PRODUCT CHANGE NOTIFICATION

**PCN:** PCN201502B

**Date:** October 01, 2020

**Subject:** Addendum to PCN201502A - 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 add additional parts to the affected part list. 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:** 60

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](http://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](mailto:pcn_adm@cypress.com).

Sincerely,

Cypress PCN Administration

# 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  
[reliability@cypress.com](mailto:reliability@cypress.com)**

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Reliability Director

**PACKAGE QUALIFICATION HISTORY**

<b>QTP Number</b>	<b>Description of Qualification Purpose</b>	<b>Date</b>
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

<b>MAJOR PACKAGE INFORMATION USED IN THIS QUALIFICATION</b>	
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

<b>ELECTRICAL TEST / FINISH DESCRIPTION</b>	
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>
<b>STRESS: ACOUSTIC, MSL3</b>							
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
<b>STRESS: BALL SHEAR</b>							
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
<b>STRESS: BOND PULL</b>							
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
<b>STRESS: CONSTRUCTIONAL ANALYSIS</b>							
FM25CL64B8 (FPP25CL64)	LH08	2918000	611934862	UT-Thailand	COMP	5	0
<b>STRESS: CROSS SECTION</b>							
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
<b>STRESS: DATA RETENTION, 125C</b>							
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>
<b>STRESS: FINAL VISUAL</b>							
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
<b>STRESS: HIGH TEMP DYNAMIC OPERATING LIFE-LATENT FAILURE RATE (125C, 3.6V, Vcc Max)</b>							
FM25CL64B8 (FPP25CL64)	LH08	2918000	611934862	UT-Thailand	500	120	0
FM25CL64B8 (FPP25CL64)	LH08	2918000	611934862	UT-Thailand	1000	120	0
<b>STRESS: HI-ACCEL SATURATION TEST, 130C, 3.65V, 85%RH, PRE COND 192 HR 30C/60%RH, MSL3</b>							
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
<b>STRESS: INTERNAL VISUAL</b>							
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
<b>STRESS: PRESSURE COOKER TEST (121C, 100%RH), 15 Psig, PRE COND 192 HR 30C/60%RH (MSL3)</b>							
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>
<b>STRESS: TC COND. C -65C TO 150C, PRE COND 192 HR 30C/60%RH, MSL3</b>							
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
<b>STRESS: X-RAY</b>							
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

Document Title: QTP# 194521: 8-LEAD TDFN (4.0X4.5X0.8MM) PURE SN LEADFINISH, MSL3, 260C REFLOW, UTL-THAILAND (UT)  
Document Number: 002-29940

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



# Material Composition Declaration

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This document is a declaration of the substances within the manufacturer listed item. Note: if the item is an assembly with lower level parts, the declaration encompasses all lower level materials for which the manufacturer has engineering responsibility.

**Adobe Reader version 7.0.5 is required to complete this declaration.**

IPC Web Site for Information on IPC-1752 Standard  
<http://www.ipc.org/IPC-175x>

Form Type \*

Declaration Class \*

## Supplier Information

<b>Company Name *</b>	Company Unique ID	Unique ID Authority	<b>Response Date *</b>	Response Document ID				
<b>Contact Name *</b>	Title - Contact	<b>Phone - Contact *</b>	<b>Email - Contact *</b>					
<b>Authorized Representative *</b>	Title - Representative	<b>Phone - Representative *</b>	<b>Email - Representative *</b>		Supplier Comments or URL for Additional Information			
Requester Item Number	Mfr Item Number	Mfr Item Name	Effective Date	Version	Manufacturing Site	<b>Weight *</b>	UOM	Unit Type
Alternate Recommendation				Alternate Item Comments				

## Manufacturing Process Information

Terminal Plating / Grid Array Material	Terminal Base Alloy	J-STD-020 MSL Rating	Peak Process Body Temperature	Max Time at Peak Temperature	Number of Reflow Cycles
			C	seconds	

Comments

Save the fields in this form to a file

Import fields from a file into this form

Clear all of the fields on this form

Lock the fields on this form to prevent changes

### RoHS Material Composition Declaration

Declaration Type \*

**RoHS Definition:** Quantity limit of 0.1% by mass (1000 PPM) in homogeneous material for: Lead (Pb), Mercury, Hexavalent Chromium, Polybrominated Biphenyls (PBB), Polybrominated Diphenyl Ethers (PBDE) and quantity limit of 0.01% by mass (100 PPM) of homogeneous material for Cadmium

RoHS Declaration \*

Supplier Acceptance \*

**Exemptions:** If the declared item does not contain RoHS restricted substances per the definition above except for defined RoHS exemptions, then select the corresponding response in the RoHS Declaration above and choose all applicable exemptions.

### Declaration Signature

**Instructions:** Complete all of the required fields on all pages of this form. Select the "Accepted" on the Supplier Acceptance drop-down. This will display the signature area. Digitally sign the declaration (if required by the Requester) and click on Submit Form to have the form returned to the Requester.

Supplier Digital Signature

## Homogeneous Material Composition Declaration for Electronic Products

**SubItem Instructions:** The presence of any JIG Level A or B substances must be declared. [1] indicate the subpart in which the substance is located, [2] provide a description of the homogeneous material [3], enter the weight of the homogeneous material.

**Substance Instructions:** [A] select the Level (JIG A, JIG B, Requester or Supplier) [B] select the substance category (JIG or Requester) or enter a value (Supplier). [C] select the substance (JIG) or enter the substance and CAS (Other). [D] select a RoHS exemption, if applicable [E] enter the weight of the substance or the PPM concentration [F] Optionally enter the positive (+) and negative (-) tolerance in percent (Note: percent tolerance values are expected to cover a 3 sigma range of distribution unless otherwise noted).

**Line Functions:** +I Inserts a New Item /SubItem +M Inserts a new Material +C Inserts a new Substance Category +S Inserts a new Substance - Deletes the element line

Item/SubItem Name	Homogeneous Material	Weight	Unit of Measure	Level	Substance Category	Substance	CAS	Exempt	Weight	Unit of Measure	Tolerance		PPM
											-	+	