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PRODUCT INFORMATION NOTIFICATION

PIN: PIN194304

Date: October 27, 2019

Subject: Qualification of Unimos Microelectronics as an Alternate Assembly Site for 8-Lead SOIC Package for FL-L and FS-S Product Families

To: PCN Coordinator
PCN Coordinator
FUTURE
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Change Type: Minor

Description of Change:

Cypress announces the qualification of 8-Lead SOIC package for FL-L and FS-S product families at Unimos Microelectronics (Unimos Microelectronics Co., Ltd. - 9688 Songze Ave., Qingpu Industrial Zone, Shanghai, China) as an alternate assembly site. Unimos Microelectronics is a world-class assembly facility, qualified to build standard and automotive grade products consistent with AEC-Q100/AEC-Q006 standards.

The current assembly site ZKT (Suzhou Zhen Kun Technology Limited - No.183,Fangzhou Road, Suzhou Industrial Park, Suzhou, China) using Samsung SG8500HKT/SG8300HKT mold compound has been EOL'd with short notice. Unimos Microelectronics is a Cypress qualified assembly site and has been shipping 8-Lead SOIC package for FL-P, FL-S, FL-1K and FL2-K product families since Q2'2010. Cypress is now extending Unimos Microelectronics as an alternate assembly site for 8-Lead SOIC with same BOM to FL-L, FS-S product families. This will enable Cypress to provide assembly operations to meet our customers' stringent quality and reliability requirements in our effort to continually provide world-class service.

FL-L and FS-S 8-Lead SOIC products assembled at Unimos Microelectronics will use the following Bill of Materials (BoM):

Material	ZKT Bill of Materials	Unimos Bill of Materials
Mold Compound	Samsung SG8500HKT/SG8300HKT	Hitachi CEL-9240
Lead Finish	Matte Sn	Matte Sn
Die Attach DAF	Yizbond 8511	Hitachi-4900 / Nitto EM710
Bond Wire	0.8mil PdCuAu	0.8mil PdCu

Benefit of Change:

Cypress will have the added capability to meet varying market demand, and to ensure consistent and reliable delivery performance to customers.

Part Numbers Affected: 41

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 PIN will include all changes outlined in this PIN.

Qualification Status:

This assembly site has been qualified for 8-SOIC Lead package for FL-L, FS-S product families through qualification by similarity based on full qualification of FL-P, FL-S, FL1-K, and FL2-K product families. Qualification Test Plan report QTP#194101 is found as an attachment to this PIN.

Approximate Implementation Date:

This change will be effective with the date of this notification.

Anticipated Impact:

No impact is expected to form, fit, function, datasheet parameters, package composition or package pin-out.

Method of Identification:

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

Response Required:

This is an information only announcement. 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
1	S25FL064LABMFA010
2	S25FL064LABMFA011
3	S25FL064LABMFA013
4	S25FL064LABMFB010
5	S25FL064LABMFB011
6	S25FL064LABMFB013
7	S25FL064LABMFI010
8	S25FL064LABMFI011
9	S25FL064LABMFI013
10	S25FL064LABMFM010
11	S25FL064LABMFM011
12	S25FL064LABMFM013
13	S25FL064LABMFN010
14	S25FL064LABMFN013
15	S25FL064LABMFV010
16	S25FL064LABMFV011
17	S25FL064LABMFV013
18	S25FL128LAGMFA010
19	S25FL128LAGMFA013
20	S25FL128LAGMFB010
21	S25FL128LAGMFB013
22	S25FL128LAGMFI010
23	S25FL128LAGMFI013
24	S25FL128LAGMFM010
25	S25FL128LAGMFM013
26	S25FL128LAGMFN010
27	S25FL128LAGMFN013
28	S25FL128LAGMFV010
29	S25FL128LAGMFV013
30	S25FS128SAGMFB100
31	S25FS128SAGMFB101
32	S25FS128SAGMFB103
33	S25FS128SAGMFI100
34	S25FS128SAGMFI101
35	S25FS128SAGMFI103
36	S25FS128SAGMFV100
37	S25FS128SAGMFV101
38	S25FS128SAGMFV103
39	S25FS128SDSMFI1D0
40	S25FS128SDSMFI1D1
41	S25FS128SDSMFI1D3

Cypress Semiconductor Reliability Qualification Report

QTP# 194101 Version **

Qualification Unimos China as Alternate Assembly Location for Non Automotive Grade Product

Qualification of: S25FL064L, 64 Megabit, 3.0-Volt Single Supply Serial Peripheral Interface Flash Non-Volatile Memory with Multi-I/O in SOC008 (8.00 x 5.28 x 2.159mm) 8 Lead, Small Outline Integrated Circuit (SOIC)

FOR ANY QUESTIONS ON THIS REPORT, PLEASE CONTACT
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I.A. Product and Package Information

Product Description: S25FL064L Cypress Division: Memory Product Division
64 Megabit, 3.0-Volt Single Supply Serial Peripheral Interface
Flash Non-Volatile Memory with Multi-I/O

Package: SOC008 QTP: 194101
Description: (8.00 x 5.28 x 2.159mm) 8 Lead, Small Outline Integrated Circuit (SOIC) Flammability: O2 Index:
Assembly: Unimos China Molding Compound: Hitachi CEL 9240 UL-V0 >28
Electrical Test: Cypress Thailand
Substrate/Leadframe: Copper Leadframe Die Attachment: Hitachi 4900F
Lead Finish: 100% Matte Sn Plating
Comments:

Est. Field Temperature: 55 °C Life Test Temperature: 150 °C
Est. DC Field Current: 25 mA Life Test Dynamic Current: 20 mA
Est. Field Voltage: 3.0 V Life Test Voltage: 3.6 V
Est. Field Power Dissipation: 75 mWatts Est. Stress Power Dissipation: 72 mWatts

Die: 98RZ9A Die Size: 2.00 x 3.57 mm
Process: 65nm Fab: XMC
Type: Floating Gate Density: 64M

I.B. Product and Package Information

Product Description: S25FL128L Cypress Division: Memory Product Division
128 Megabit, 3.0-Volt Single Supply Serial Peripheral Interface
Flash Non-Volatile Memory with Multi-I/O

Package:	SOC008	QTP:	194101a		
Description:	(8.00 x 5.28 x 2.159mm) 8 Lead, Small Outline Integrated Circuit (SOIC)			Flammability:	O2 Index:
Assembly:	Unimos China	Molding Compound:	Hitachi CEL 9240	UL-V0	>28
Electrical Test:	Cypress Thailand				
Substrate/Leadframe:	Copper Leadframe	Die Attachment:	Hitachi 4900F		
Lead Finish:	100% Matte Sn Plating				
Comments:					

Est. Field Temperature:	55 °C	Life Test Temperature:	150 °C
Est. DC Field Current:	25 mA	Life Test Dynamic Current:	20 mA
Est. Field Voltage:	3.0 V	Life Test Voltage:	3.6 V
Est. Field Power Dissipation:	75 mWatts	Est. Stress Power Dissipation:	72 mWatts

Die:	98SZ2A	Die Size:	3.47 x 3.83 mm
Process:	65nm	Fab:	XMC
Type:	Floating Gate	Density:	128M

II. Summary of Stress Test Results

Stress Test	Stress Condition	Package Type	Sample Size	Num. of Lots	Num. of Fails	Failure Rate %	Comments
Generic Reference Data:							
HTOL (EL)	(3.6V, 150°C)	SOC008 ⁴	231	3	0	0.00	168 hours
	(3.6V, 150°C)	SO3016 ⁵	1600	2	0	0.00	48 hours
	(3.6V, 150°C)	SO3016 ⁵	797	1	0	0.00	168 hours
HTOL (IL)	(3.6V, 150°C)	SOC008 ⁴	231	3	0	0.00	1000 hours
	(3.6V, 150°C)	SO3016 ⁵	231	3	0	0.00	1000 hours
High Temp Bake	(200°C)	SOC008 ²	135	3	0	0.00	350 hours
ESD CDM	N/A	SOC008 ¹	15	1	Passed 1.0kV		
	N/A	SOC008 ⁴	45	3	Passed 1.0kV		
ESD HBM	(100pF, 1500 Ohms)	SO3016 ⁵	180	3	Passed 2.0kV		
Latch Up	(125°C, +/- 100mA)	SO3016 ⁵	18	3	Passed		
Endurance (100k)	(125°C, 3.6V)	SO3016 ⁵	190	3	0	0.00	100k cycles
	(25°C, 3.6V)	SO3016 ⁵	64	1	0	0.00	100k cycles
	(-40°C, 3.6V)	SO3016 ⁵	63	1	0	0.00	100k cycles
Preconditioning	(PC9/260°C, +0°C/-5°C)	SOC008 ¹	231	1	Passed Jedec L3 / Jeita Rank E		
	(PC1/260°C, +0°C/-5°C)	SOC008 ²	693	3	Passed Jedec L3 / Jeita Rank E		
	(PC9/260°C, +0°C/-5°C)	SOA008 ³	154	1	Passed Jedec L3 / Jeita Rank E		
Precon+Temp Cycle	(PC9/260°C, -40°C/150°C)	SOC008 ¹	72	1	0	0.00	1000 cycles
	(PC1/260°C, -40°C/150°C)	SOC008 ²	231	3	0	0.00	1000 cycles
	(PC9/260°C, -40°C/150°C)	SOA008 ³	77	1	0	0.00	1000 cycles
Precon+HAST	(PC9/260°C, Biased, 130°C/85% RH)	SOC008 ¹	77	1	0	0.00	96 hours
	(PC1/260°C, Biased, 130°C/85% RH)	SOC008 ²	231	3	0	0.00	96 hours
	(PC9/260°C, Biased, 130°C/85% RH)	SOA008 ³	77	1	0	0.00	96 hours
Precon+uHAST	(PC9/260°C, Unbiased, 130°C/85% RH)	SOC008 ¹	77	1	0	0.00	96 hours
	(PC1/260°C, Unbiased, 130°C/85% RH)	SOC008 ²	231	3	0	0.00	96 hours

- Notes / Justification:
- 1) Results from Qual Q100587, S25FL127S in 8 Lead SOIC (8 x 5.28 x 2.159mm) - Similar SOIC Package, Same Fab and Same Assembly Location
 - 2) Results from Qual Q100069, S25FL032P in 8 Lead SOIC (8 x 5.28 x 2.159mm) - Similar SOIC Package and Same Assembly Location
 - 3) Results from Qual Q100581, S25FL132K in 8 Lead SOIC (4.9 x 6 x 1.75mm) - Similar SOIC Package, Same Fab and Same Assembly Location
 - 4) Results from Qual 163311, S25FL064L in 8 Lead SOIC (8 x 5.28 x 2.159mm) - Similar SOIC Package and Same FL-L Product Family
 - 5) Results from Qual 162018, S25FL256L in 16 Lead SOIC (10.3 x 10.3 x 2.65mm) - Similar SOIC Package and Same FL-L Product Family

Preconditioning Flows: PC1 (Exceeds JEDEC L3 and JEITA Rank E): Bake 125°C, 24hr => Soak @ 30°C/70%RH, 216hr => 3x Reflow
 PC9 (Accelerated JEDEC L3 / JEITA Rank E): Bake 125°C, 24hr => Soak @ 60°C/70%RH, 72hr => 3x Reflow

Reliability Tests Performed per Specification Requirements

Stress	Condition	Specification Reference
Endurance (100k)	(125°C, 3.6V)	JESD47 / JESD22-A117 / AEC-Q100 /AEC-Q100-005
Endurance (100k)	(25°C, 3.6V)	JESD47 / JESD22-A117 / AEC-Q100 /AEC-Q100-005
Endurance (100k)	(-40°C, 3.6V)	JESD47 / JESD22-A117 / AEC-Q100 /AEC-Q100-005
ESD CDM	N/A	JS002 / AEC-Q100-011
ESD HBM	(100pF, 1500 Ohms)	JS001 / AEC-Q100-002
High Temp Bake	(200°C)	JESD22-A103
HTOL (EL)	(3.6V, 150°C)	JESD22-A108
HTOL (IL)	(3.6V, 150°C)	JESD22-A108
Latch Up	(125°C, +/- 100mA)	JESD78 / AEC Q100-004
Precon+HAST	(PC1/260°C, Biased, 130°C/85% RH)	JESD22-A110
Precon+HAST	(PC9/260°C, Biased, 130°C/85% RH)	JESD22-A110
Precon+Temp Cycle	(PC1/260°C, -40°C/150°C)	JESD22-A104
Precon+Temp Cycle	(PC9/260°C, -40°C/150°C)	JESD22-A104
Precon+uHAST	(PC1/260°C, Unbiased, 130°C/85% RH)	JESD22-A118
Precon+uHAST	(PC9/260°C, Unbiased, 130°C/85% RH)	JESD22-A118
Preconditioning	(PC1/260°C, +0°C/-5°C)	J-STD-020 / EIAJ ED-4701-100 Method 104
Preconditioning	(PC9/260°C, +0°C/-5°C)	J-STD-020 / EIAJ ED-4701-100 Method 104

III. Revision History

Document Number: 002-28663

Document Title: Qualification Unimos China as Alternate Assembly Location for FL-L Products Non Automotive Grade

Rev.	Issue Date	ECN#	Originator	Description
**	10/7/2019	6693353	EKNG	Initial Release.

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