Cypress Semiconductor Corporation – An Infineon Technologies Company
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PRODUCT CHANGE NOTIFICATION

PCN: PCN204002 **Date:** October 01, 2020

Subject: Qualification of Greatek Electronics Inc.as an Alternate Assembly Site for Select SOIC 32-Lead Package

To: FUTURE ELECTRONICS
FUTURE ELE
pcn.system2@future.ca

Description of Change:
Cypress announced the qualification of Greatek Electronics Inc., Taiwan located at No. 136, Gong-Yi Rd., Zhunan Township, Miaoli County, Taiwan 350, as an alternate assembly site for select Memory and USB products offered in 32-Lead SOIC (450mil) package.

These products are currently processed at Jiangsu Changjiang Electronics Technology Co., Ltd (JCET), Cypress' subcontractor in China. The transfer of assembly operations to Greatek is motivated by JCET's phasing out (i.e., End-Of-Life) of SOIC manufacturing operations, as previously announced in Advance PCN - APCN 201001.

Given the imminent phase out of operations at JCET, and the dynamically changing market conditions, Cypress is pleased to offer supply of changed material (i.e., Greatek assembled product) ahead of the implementation date. Customers are strongly encouraged to avail of this option, where production volumes of Greatek assembled product can be secured and shipped against current orders. Please contact your Cypress Sales Representative for more information on availing this option.

Greatek is certified by international quality and safety standards, namely, ISO 9001, IATF 16949, ISO 14001, and ISO 26262. These certificates, along with their Sony Green Partnership certificate, can be viewed on their corporate web site: http://www.greatek.com.tw/

BOM Comparison:
The SOIC 32L package will be assembled at Greatek using an industry standard set of Bill of Materials (BOM). Please see the table below for a comparison of BOM between Greatek and JCET.

The 32-Lead SOIC package is assembled at Greatek using the following Bill of Materials (BOM):

Material	Greatek BOM	JCET BOM
Leadframe	Cu Leadframe	PPF/ Cu Leadframe
Leadfinish	Pure Sn	NiPdAu/Pure Sn
Die Attach Material	Hitachi EN-4900GC	Henkel QMI-509
Wire type	0.8 mil CuPdAu wire	0.9mil Au wire/ 0.8mil CuPd wire
Mold Compound	Sumitomo EME-G700SLA	Kyocera KE-G6000DA-CY/ Sumitomo EME-G620B / Sumitomo EME-G631SH-Q

Benefit of Change:
Qualification of alternative manufacturing sites provides the means for Cypress to ensure business continuity on the stated products, and thereby meet long-term market demand and delivery commitments to customers after the phase out of operations at JCET.

Part Numbers Affected: 16
See the attached 'Affected Parts List' file for a list of all part numbers affected by this change. Note that any new parts introduced after the publication of this PCN will be assembled at Greatek.

Qualification Status:
Greatek has been qualified through a series of tests documented in the Qualification Test Plan summarized in the table below. 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.

QTP Number	Qualification Purpose
201802	32L SOIC (SZ324) Package Qualification Transfer at Greatek-Taiwan (IG)

Sample Status:
Samples are available now, unless there is an indication that the sample ordering part numbers are subject to lead times. Qualification samples may not be built ahead of time for all part numbers affected by this change.

Please review the attached 'Affected Parts List' file for a list of affected part numbers with their associated Greatek sample ordering part numbers.

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 notification.

Approximate Implementation Date:
Effective immediately upon customer approval, or 90 days from the date of this notification, whichever comes first, shipments on part numbers in the attached file will be primarily sourced from Greatek. Customers should expect to receive JCET assembled product for a transitionary period, until inventory is depleted.

Anticipated Impact:

Products assembled at Greatek 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 this change against current application notes, system design considerations and customer environment conditions to assess impact (if any) to their application.

Method of Identification:
Cypress also 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

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Cypress Semiconductor
Package Qualification Report

QTP# 201802 VERSION**
September 2020

32L SOIC (450 mils)

Pure Sn Leadfinish

MSL3, 260°C Reflow

Greatek-Taiwan (IG)

FOR ANY QUESTIONS ON THIS REPORT, PLEASE CONTACT
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PACKAGE QUALIFICATION HISTORY

QTP Number	Description of Qualification Purpose	Date
201802	32L SOIC (SZ324) Package Qualification Transfer at Greatek-Taiwan (IG)	Sept. 2020

MAJOR PACKAGE INFORMATION USED IN THIS QUALIFICATION	
Package Designation:	SZ32
Package Outline, Type, or Name:	32L SOIC (450 mils)
Mold Compound Name/Manufacturer:	G700SLA/Sumitomo
Mold Compound Flammability Rating:	V0 UL94
Oxygen Rating Index: >28%	54%
Lead Frame Designation:	Full Metal Paddle
Lead Frame Material:	Copper
Lead Finish, Composition / Thickness:	Pure Sn
Die Backside Preparation Method/Metallization:	Backgrind
Die Separation Method:	Saw Process
Die Attach Supplier:	Hitachi
Die Attach Material:	EN-4900GC
Bond Diagram Designation	002-30234, 002-30221, 002-30233
Wire Bond Method:	Thermosonic
Package Cross Section Yes/No:	Yes
Assembly Process Flow:	002-31052
Name/Location of Assembly (prime) facility:	Greatek-Taiwan (IG)
MSL Level	3
Reflow Profile	260C

ELECTRICAL TEST / FINISH DESCRIPTION	
Test Location:	CML-R

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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 Cpk : 1.33, Ppk : 1.66	P
Bond Pull	MIL-STD-883 – Method 2011, Cpk : 1.33, Ppk : 1.66	P
Constructional Analysis	Criteria: Meet external and internal characteristics of Cypress package	P
Die Shear	MIL-STD-883, Method 2019	P
Dye Penetrant Test	Test to determine the existence and extent of cracks, Criteria: No Package Crack	P
Electrostatic Discharge Charge Device Model (ESD-CDM)	500V, 1000V, 1250V JESD22-C101	P
Final Visual Inspection	JESD22-B101	P
High Accelerated Saturation Test (HAST)	JEDEC STD 22-A110: 130°C, 85%RH, 3.6V Precondition: JESD22 Moisture Sensitivity Level (192 Hrs., 30°C, 60% RH, 260°C Reflow)	P
High Temp Storage	JESD22-A103: 175°C, no bias	P
Internal Visual Inspection	MIL-STD-883-2014	P
Physical Dimension	MIL-STD-1835, JESD22-B100	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
Solderability, Steam Aged	J-STD-002, JESD22-B102 95% solder coverage minimum	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

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Reliability Test Data

QTP #: 201802

Device	Package	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: ACOUSTIC, MSL3								
CY62148ELL (7CP62148F)	SZ32	4918199	612014747	IG-Taiwan	COMP	22	0	
CY62148ELL (7CP62148F)	SZ32	4918199	612014748	IG-Taiwan	COMP	22	0	
CY62148ELL (7CP62148F)	SZ32	4918199	612014749	IG-Taiwan	COMP	22	0	
STRESS: ACOUSTIC								
CY62138FLL (7CP62138G)	SZ32	4903022	612014746	IG-Taiwan	COMP	22	0	
CY62148G (7CP172148A)	SZ32	9923020	612014855	IG-Taiwan	COMP	22	0	
STRESS: BALL SHEAR								
CY62148ELL (7CP62148F)	SZ32	4918199	612014747	IG-Taiwan	COMP	30	0	
CY62148ELL (7CP62148F)	SZ32	4918199	612014748	IG-Taiwan	COMP	30	0	
CY62148ELL (7CP62148F)	SZ32	4918199	612014749	IG-Taiwan	COMP	30	0	
CY62138FLL (7CP62138G)	SZ32	4903022	612014746	IG-Taiwan	COMP	30	0	
CY62148G (7CP172148A)	SZ32	9923020	612014855	IG-Taiwan	COMP	30	0	
STRESS: BOND PULL								
CY62148ELL (7CP62148F)	SZ32	4918199	612014747	IG-Taiwan	COMP	30	0	
CY62148ELL (7CP62148F)	SZ32	4918199	612014748	IG-Taiwan	COMP	30	0	
CY62148ELL (7CP62148F)	SZ32	4918199	612014749	IG-Taiwan	COMP	30	0	
CY62138FLL (7CP62138G)	SZ32	4903022	612014746	IG-Taiwan	COMP	30	0	
CY62148G (7CP172148A)	SZ32	9923020	612014855	IG-Taiwan	COMP	30	0	
STRESS: CONSTRUCTIONAL ANALYSIS								
CY62148ELL (7CP62148F)	SZ32	4918199	612014747	IG-Taiwan	COMP	5	0	
CY62148ELL (7CP62148F)	SZ32	4918199	612014748	IG-Taiwan	COMP	5	0	
CY62148ELL (7CP62148F)	SZ32	4918199	612014749	IG-Taiwan	COMP	5	0	
CY62138FLL (7CP62138G)	SZ32	4903022	612014746	IG-Taiwan	COMP	5	0	
CY62148G (7CP172148A)	SZ32	9923020	612014855	IG-Taiwan	COMP	5	0	

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Reliability Test Data

QTP #: 201802

Device	Package	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: DIE SHEAR								
CY62148ELL (7CP62148F)	SZ32	4918199	612014747	IG-Taiwan	COMP	5	0	
CY62148ELL (7CP62148F)	SZ32	4918199	612014748	IG-Taiwan	COMP	5	0	
CY62148ELL (7CP62148F)	SZ32	4918199	612014749	IG-Taiwan	COMP	5	0	
CY62138FLL (7CP62138G)	SZ32	4903022	612014746	IG-Taiwan	COMP	5	0	
CY62148G (7CP172148A)	SZ32	9923020	612014855	IG-Taiwan	COMP	5	0	
STRESS: DYE PENETRANT TEST								
CY62148ELL (7CP62148F)	SZ32	4918199	612014747	IG-Taiwan	COMP	15	0	
CY62148ELL (7CP62148F)	SZ32	4918199	612014748	IG-Taiwan	COMP	15	0	
CY62148ELL (7CP62148F)	SZ32	4918199	612014749	IG-Taiwan	COMP	15	0	
CY62138FLL (7CP62138G)	SZ32	4903022	612014746	IG-Taiwan	COMP	15	0	
CY62148G (7CP172148A)	SZ32	9923020	612014855	IG-Taiwan	COMP	15	0	
STRESS: ESD-CHARGE DEVICE MODEL								
CY62148ELL (7CP62148F)	SZ32	4918199	612014747	IG-Taiwan	500	9	0	
CY62148ELL (7CP62148F)	SZ32	4918199	612014747	IG-Taiwan	1000	3	0	
CY62148ELL (7CP62148F)	SZ32	4918199	612014747	IG-Taiwan	1250	3	0	
STRESS: FINAL VISUAL								
CY62148ELL (7CP62148F)	SZ32	4918199	612014747	IG-Taiwan	COMP	1490	0	
CY62148ELL (7CP62148F)	SZ32	4918199	612014748	IG-Taiwan	COMP	850	0	
CY62148ELL (7CP62148F)	SZ32	4918199	612014749	IG-Taiwan	COMP	850	0	
CY62138FLL (7CP62138G)	SZ32	4903022	612014746	IG-Taiwan	COMP	1000	0	
CY62148G (7CP172148A)	SZ32	9923020	612014855	IG-Taiwan	COMP	1000	0	
STRESS: HI-ACCEL SATURATION TEST, 130C, 3.6V, 85%RH, PRE COND 192 HR 30C/60%RH, MSL3								
CY62148ELL (7CP62148F)	SZ32	4918199	612014747	IG-Taiwan	96	30	0	
CY62148ELL (7CP62148F)	SZ32	4918199	612014748	IG-Taiwan	96	30	0	
CY62148ELL (7CP62148F)	SZ32	4918199	612014749	IG-Taiwan	96	30	0	

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Reliability Test Data

QTP #: 201802

Device	Package	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: HIGH TEMP STORAGE								
CY62148ELL (7CP62148F)	SZ32	4918199	612014747	IG-Taiwan	500	80	0	
STRESS: INTERNAL VISUAL								
CY62148ELL (7CP62148F)	SZ32	4918199	612014747	IG-Taiwan	COMP	5	0	
CY62148ELL (7CP62148F)	SZ32	4918199	612014748	IG-Taiwan	COMP	5	0	
CY62148ELL (7CP62148F)	SZ32	4918199	612014749	IG-Taiwan	COMP	5	0	
CY62138FLL (7CP62138G)	SZ32	4903022	612014746	IG-Taiwan	COMP	5	0	
CY62148G (7CP172148A)	SZ32	9923020	612014855	IG-Taiwan	COMP	5	0	
STRESS: PHYSICAL DIMENSION								
CY62148ELL (7CP62148F)	SZ32	4918199	612014747	IG-Taiwan	COMP	10	0	
CY62148ELL (7CP62148F)	SZ32	4918199	612014748	IG-Taiwan	COMP	10	0	
CY62148ELL (7CP62148F)	SZ32	4918199	612014749	IG-Taiwan	COMP	10	0	
CY62138FLL (7CP62138G)	SZ32	4903022	612014746	IG-Taiwan	COMP	10	0	
CY62148G (7CP172148A)	SZ32	9923020	612014855	IG-Taiwan	COMP	10	0	
STRESS: PRESSURE COOKER TEST (121C, 100%RH), 15 Psig, PRE COND 192 HR 30C/60%RH (MSL3)								
CY62148ELL (7CP62148F)	SZ32	4918199	612014747	IG-Taiwan	168	80	0	
CY62148ELL (7CP62148F)	SZ32	4918199	612014748	IG-Taiwan	168	80	0	
CY62148ELL (7CP62148F)	SZ32	4918199	612014749	IG-Taiwan	168	80	0	
STRESS: SOLDERABILITY TEST								
CY62148ELL (7CP62148F)	SZ32	4918199	612014747	IG-Taiwan	COMP	5	0	
CY62148ELL (7CP62148F)	SZ32	4918199	612014748	IG-Taiwan	COMP	3	0	
CY62148ELL (7CP62148F)	SZ32	4918199	612014749	IG-Taiwan	COMP	3	0	

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Reliability Test Data

QTP #: 201802

Device	Package	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: TC COND. C –65C TO 150C, PRE COND 192 HR 30C/60%RH, MSL3								
CY62148ELL (7CP62148F)	SZ32	4918199	612014747	IG-Taiwan	500	80	0	
CY62148ELL (7CP62148F)	SZ32	4918199	612014748	IG-Taiwan	500	80	0	
CY62148ELL (7CP62148F)	SZ32	4918199	612014749	IG-Taiwan	500	80	0	
STRESS: X-RAY								
CY62148ELL (7CP62148F)	SZ32	4918199	612014747	IG-Taiwan	COMP	15	0	
CY62148ELL (7CP62148F)	SZ32	4918199	612014748	IG-Taiwan	COMP	15	0	
CY62148ELL (7CP62148F)	SZ32	4918199	612014749	IG-Taiwan	COMP	15	0	
CY62138FLL (7CP62138G)	SZ32	4903022	612014746	IG-Taiwan	COMP	15	0	
CY62148G (7CP172148A)	SZ32	9923020	612014855	IG-Taiwan	COMP	15	0	

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Document History Page

Document Title: QTP# 201802: 32L SOIC (450 MILS) PURE SN LEADFINISH, MSL3, 260C REFLOW, GREATEK-TAIWAN (IG)
Document Number: 002-31444

Rev.	ECN No.	Orig. of Change	Description of Change
**	6968795	JYF	Initial release.

Item	Marketing Part Numbers	Family	Sample Order Part Number	Sample Availability
1	CY62138FLL-45SXI	ASYNC	CY62138FLL-45SXIKT	Subject to lead time
2	CY62138FLL-45SXIT	ASYNC	CY62138FLL-45SXIKT	Subject to lead time
3	CY62148G-45SXI	ASYNC	CY62148G-45SXIKT	Subject to lead time
4	CY62148G-45SXIT	ASYNC	CY62148G-45SXIKT	Subject to lead time
5	CY62148G30-45SXI	ASYNC	CY62148G30-45SXIKT	Subject to lead time
6	CY62148G30-45SXIT	ASYNC	CY62148G30-45SXIKT	Subject to lead time
7	CY62148GN-45SXI	ASYNC	CY62148GN-45SXIKT	Subject to lead time
8	CY62148GN-45SXIT	ASYNC	CY62148GN-45SXIKT	Subject to lead time
9	CY62148GN30-45SXI	ASYNC	CY62148GN30-45SXIKT	Subject to lead time
10	CY62148GN30-45SXIT	ASYNC	CY62148GN30-45SXIKT	Subject to lead time
11	CG8875AM	ASYNC	CG8875UM	Subject to lead time
12	CG8875AMT	ASYNC	CG8875UM	Subject to lead time
13	CY62148ELL-55SXI	ASYNC	CY62148ELL-55SXIKT	Available
14	CY62148ELL-55SXIT	ASYNC	CY62148ELL-55SXIKT	Available
15	CY62148EV30LL-55SXI	ASYNC	CY62148EV30LL-55SXIKT	Available
16	CY62148EV30LL-55SXIT	ASYNC	CY62148EV30LL-55SXIKT	Available