



Cypress Semiconductor Corporation – An Infineon Technologies Company
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PRODUCT CHANGE NOTIFICATION

PCN: PCN210605

Date: February 15, 2021

Subject: Transfer of Assembly Operations to Greatek Electronics Inc. for Select 32-Lead TSOP I Package Memory Products

To: PCN Coordinator PCN Coordinator
FUTURE
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Change Type: Major

Description of Change:

Cypress announces the qualification of Greatek Electronics Inc., Taiwan located at No. 136, Gong-Yi Rd., Zhunan Township, Miaoli County 350, Taiwan, as an alternate assembly site for select Memory products offered in 32-Lead TSOP I package.

These products are currently process at Jiangsu Changjiang Electronics Technology Co., Ltd (JCET) of Cypress' subcontractor in China; and Orient Semiconductor Electronics (OSET) of Cypress' subcontractor in Taiwan. The transfer of assembly operations to Greatek is motivated by JCET's phasing out (i.e., End-Of-Life) of TSOP manufacturing operations, as previously announced in advance PCN - APCN 201001 and also as alternative assembly site.

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 32-Lead TSOP I package will be assembled at Greatek using an industry standard set of Bill of Materials (BOM). Please see table below for a comparison of BOM among the assembly sites.

Material	Greatek BOM	JCET BOM	OSET BOM
Leadframe	Cu Leadframe	PPF/ Cu Leadframe	Cu Leadframe
Leadfinish	Pure Sn	NiPdAu/Pure Sn	Pure Sn
Die Attach Material	Showa Denko EN-4900GC	Henkel QMI-509	Sumitomo CRM-1076
Wire	0.8mil CuPdAu wire	0.8 & 0.9mil Au/ 0.8mil CuPd wire	0.8mil Au/0.8mil Cu/ 0.8mil CuPdAu wire
Mold Compound	Sumitomo EME-G700SLA	Kyocera KE-G6000DA-CY/ Sumitomo EME-G620B	Sumitomo EME-G631/EME-G631SH

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: 14

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 QTP#202801. This qualification report can be found as an attachment to this PCN or by visiting www.cypress.com and typing the QTP number in the keyword search window.

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 transitional 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

Cypress Semiconductor Reliability Qualification Report

QTP# 202801
Version **

Issue Date: 2/7/2021

CY62148ESL/FM28V100/CY62128ELL/CY62138FV30LL/FM28V020

**Qualification of: 202801: To qualify 32L TSOP I (ZB32/ZB32F) 8x13.4x1.2mm at
Greatek-Taiwan (IG) as Alternative Assembly Site**

Notice: The information in this report is prepared to assist in the qualification of our products. It is declassified for the internal use of our customers only, and may be modified to meet the needs of specific customers

The package details (material set, assembly location, etc.) are specific to the qual vehicles used for qualification. Alternate material sets and assembly locations may be qualified for the affected products. Production material may be assembled with any qualified material set and at any qualified assembly location.

FOR ANY QUESTION ON THIS REPORT, Please Contact
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1.0 Product and Package Information

1.0.1 Product Description

Product Part Number	CY62148ESL-55ZAXI	Cypress Division	MS
Device Description	7CP62148F		

1.0.2 Package Information

Package Designation	ZB32	Qual Record	QTP 202801
Package Outline	8x13.4x1.2mm		
Assembly	Greatek-Taiwan (IG)	Mold Compound	Sumitomo G700SLA
Electrical Test	CML-Philippines (R)	Die Attach	EN4900GC
Substrate/Leadframe	Cu LF	Flammability	U-94
O2 Index	54%	Lead Finish	Pure Tin
Number of Die	1		

1.0.3 Die information

Die 1	7CP62148F	Process	C9_CAP
Type	C9_CAP	FAB	Skywater

1.1 Product and Package Information

1.1.1 Product Description

Product Part Number	FM28V100-TG	Cypress Division	MS
Device Description	FPP28V100B		

1.1.2 Package Information

Package Designation	ZB32F	Qual Record	QTP 202801
Package Outline	8x13.4x1.2mm		
Assembly	Greatek-Taiwan (IG)	Mold Compound	Sumitomo G700SLA
Electrical Test	CML-Philippines (R)	Die Attach	EN4900GC
Substrate/Leadframe	Cu LF	Flammability	U-94%
O2 Index	54%	Lead Finish	Pure Tin
Number of Die	1		

1.1.3 Die information

Die 1	FPP28V100B	Process	FRAM
Type	FRAM	FAB	Texas Instruments (TI)

1.2 Product and Package Information

1.2.1 Product Description

Product Part Number	CY62128ELL-45ZAXI	Cypress Division	MS
Device Description	7CP62128K		

1.2.2 Package Information

Package Designation	ZB32	Qual Record	QTP 202801
Package Outline	8x13.4x1.2mm		
Assembly	Greatek-Taiwan (IG)	Mold Compound	Sumitomo G700SLA
Electrical Test	CML-Philippines (R)	Die Attach	EN4900GC
Substrate/Leadframe	Cu LF	Flammability	U-94
O2 Index	54%	Lead Finish	Pure Tin
Number of Die	1		

1.2.3 Die information

Die 1	7CP62128K	Process	C9_CAP
Type	C9_CAP	FAB	Skywater

1.3 Product and Package Information

1.3.1 Product Description

Product Part Number	CY62138FV30LL-45ZAXI	Cypress Division	MS
Device Description	7CP62138G		

1.3.2 Package Information

Package Designation	ZB32	Qual Record	QTP 202801
Package Outline	8x13.4x1.2mm		
Assembly	Greatek-Taiwan (IG)	Mold Compound	Sumitomo G700SLA
Electrical Test	CML-Philippines (R)	Die Attach	EN4900GC
Substrate/Leadframe	Cu LF	Flammability	U-94
O2 Index	54%	Lead Finish	Pure Tin
Number of Die	1		

1.3.3 Die information

Die 1	7C62135G	Process	C9_CAP
Type	C9_CAP	FAB	Skywater

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1.4 Product and Package Information

1.4.1 Product Description

Product Part Number	FM28V020-TGKT	Cypress Division	MS
Device Description	FPP28V020G		

1.4.2 Package Information

Package Designation	ZB32F	Qual Record	QTP 202801
Package Outline	8x13.4x1.2mm		
Assembly	Greatek-Taiwan (IG)	Mold Compound	Sumitomo G700SLA
Electrical Test	CML-Philippines (R)	Die Attach	EN4900GC
Substrate/Leadframe	Cu LF	Flammability	U-94
O2 Index	54%	Lead Finish	Pure Tin
Number of Die	1		

1.4.3 Die information

Die 1	FPP28V020GY	Process	FRAM
Type	FRAM	FAB	Texas Instruments (TI)

2.0 Summary of stress test result

2.1 Reliability data collected from Qualification

Stress	Condition	Fab lot	Lot	Package	Assembly Site	TV	Read Point	SS	Reject	Comment
BALL BOND SHEAR	As specified	4918482	612023628	ZB32	IG	1	COMP	30	0	
		4918482	612023627	ZB32	IG	2	COMP	30	0	
		4918482	612023632	ZB32	IG	3	COMP	30	0	
		2928001	612023096	ZB32F	IG	4	COMP	30	0	
		2928001	612023097	ZB32F	IG	5	COMP	30	0	
		2928001	612023099	ZB32F	IG	6	COMP	30	0	
		4812350	612023625	ZB32	IG	7	COMP	30	0	
		4911927	612023630	ZB32	IG	8	COMP	30	0	
		2911002	612030612	ZB32F	IG	9	COMP	30	0	
BIASED HAST	130°C / 85%RH	4918482	612023628	ZB32	IG	1	96	80	0	
		4918482	612023627	ZB32	IG	2	96	80	0	
		4918482	612023632	ZB32	IG	3	96	80	0	
BOND PULL STRENGTH	As specified	4918482	612023628	ZB32	IG	1	COMP	30	0	
		4918482	612023627	ZB32	IG	2	COMP	30	0	
		4918482	612023632	ZB32	IG	3	COMP	30	0	
		2928001	612023096	ZB32F	IG	4	COMP	30	0	
		2928001	612023097	ZB32F	IG	5	COMP	30	0	
		2928001	612023099	ZB32F	IG	6	COMP	30	0	
		4812350	612023625	ZB32	IG	7	COMP	30	0	
		4911927	612023630	ZB32	IG	8	COMP	30	0	
		2911002	612030612	ZB32F	IG	9	COMP	30	0	
CONSTRUCTION ANALYSIS	As specified	4918482	612023628	ZB32	IG	1	COMP	5	0	
		4918482	612023627	ZB32	IG	2	COMP	5	0	
		4918482	612023632	ZB32	IG	3	COMP	5	0	
		2928001	612023096	ZB32F	IG	4	COMP	5	0	
		2928001	612023097	ZB32F	IG	5	COMP	5	0	
		2928001	612023099	ZB32F	IG	6	COMP	5	0	
		4812350	612023625	ZB32	IG	7	COMP	5	0	
		4911927	612023630	ZB32	IG	8	COMP	5	0	
		2911002	612030612	ZB32F	IG	9	COMP	5	0	
DIE SHEAR	As specified	4918482	612023628	ZB32	IG	1	COMP	5	0	
		4918482	612023627	ZB32	IG	2	COMP	5	0	
		4918482	612023632	ZB32	IG	3	COMP	5	0	
		2928001	612023096	ZB32F	IG	4	COMP	5	0	
		2928001	612023097	ZB32F	IG	5	COMP	5	0	
		2928001	612023099	ZB32F	IG	6	COMP	5	0	
		4812350	612023625	ZB32	IG	7	COMP	5	0	
		4911927	612023630	ZB32	IG	8	COMP	5	0	
		2911002	612030612	ZB32F	IG	9	COMP	5	0	
DYE PENETRANT	As specified	4918482	612023628	ZB32	IG	1	COMP	15	0	
		4918482	612023627	ZB32	IG	2	COMP	15	0	
		4918482	612023632	ZB32	IG	3	COMP	15	0	
		2928001	612023096	ZB32F	IG	4	COMP	15	0	
		2928001	612023097	ZB32F	IG	5	COMP	15	0	
		2928001	612023099	ZB32F	IG	6	COMP	15	0	
		4812350	612023625	ZB32	IG	7	COMP	15	0	
		4911927	612023630	ZB32	IG	8	COMP	15	0	
		2911002	612030612	ZB32F	IG	9	COMP	15	0	



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ESD (CDM) SENSITIVITY	500V, 1000V, 1250V	4918482	612023628	ZB32	IG	1	COMP	15	0	
FINAL VISUAL INSPECTION	As specified	4918482	612023628	ZB32	IG	1	COMP	878	0	
		4918482	612023627	ZB32	IG	2	COMP	791	0	
		4918482	612023632	ZB32	IG	3	COMP	755	0	
		2928001	612023096	ZB32F	IG	4	COMP	970	0	
		2928001	612023097	ZB32F	IG	5	COMP	970	0	
		2928001	612023099	ZB32F	IG	6	COMP	970	0	
		4812350	612023625	ZB32	IG	7	COMP	570	0	
		4911927	612023630	ZB32	IG	8	COMP	970	0	
		2911002	612030612	ZB32F	IG	9	COMP	770	0	
GLUE ADHESION	As specified	4918482	612023628	ZB32	IG	1	COMP	15	0	
		4918482	612023627	ZB32	IG	2	COMP	15	0	
		4918482	612023632	ZB32	IG	3	COMP	15	0	
HIGH TEMP STORAGE LIFE	150°C	4918482	612023628	ZB32	IG	1	500 1000	80 80	0	
	175°C	4918482	612023628	ZB32	IG	1	500 1000	80 80	0	
INTERNAL VISUAL	As specified	4918482	612023628	ZB32	IG	1	COMP	5	0	
		4918482	612023627	ZB32	IG	2	COMP	5	0	
		4918482	612023632	ZB32	IG	3	COMP	5	0	
PHYSICAL DIMENSIONS	As specified	4918482	612023628	ZB32	IG	1	COMP	10	0	
		4918482	612023627	ZB32	IG	2	COMP	10	0	
		4918482	612023632	ZB32	IG	3	COMP	10	0	
		2928001	612023096	ZB32F	IG	4	COMP	10	0	
		2928001	612023097	ZB32F	IG	5	COMP	10	0	
		2928001	612023099	ZB32F	IG	6	COMP	10	0	
		4812350	612023625	ZB32	IG	7	COMP	10	0	
		4911927	612023630	ZB32	IG	8	COMP	10	0	
		2911002	612030612	ZB32F	IG	9	COMP	10	0	
PRE CONDITIONING	24HRS_125°C MSL3_30°C / 60%RH for 192 hrs	4918482	612023628	ZB32	IG	1	COMP	240	0	
		4918482	612023627	ZB32	IG	2	COMP	240	0	
		4918482	612023632	ZB32	IG	3	COMP	240	0	
PRESSURE COOKER TEST	121°C / 100%RH / 15psig	4918482	612023628	ZB32	IG	1	168 288	80 79	0	
		4918482	612023627	ZB32	IG	2	168 288	79	0	
		4918482	612023632	ZB32	IG	3	168	79	0	
SOLDERABILITY DIP AND LOOK	As specified	4918482	612023628	ZB32	IG	1	COMP	5	0	
		4918482	612023627	ZB32	IG	2	COMP	5	0	
		4918482	612023632	ZB32	IG	3	COMP	5	0	
TEMP CYCLE	C -65°C to 150°C	4918482	612023628	ZB32	IG	1	500 1000	80 80	0	
		4918482	612023627	ZB32	IG	2	500 1000	80 80	0	
		4918482	612023632	ZB32	IG	3	500	80	0	
TIME ZERO CSAM	As specified	2928001	612023096	ZB32F	IG	4	COMP	22	0	
		2928001	612023097	ZB32F	IG	5	COMP	22	0	
		2928001	612023099	ZB32F	IG	6	COMP	22	0	
		4812350	612023625	ZB32	IG	7	COMP	22	0	
		4911927	612023630	ZB32	IG	8	COMP	22	0	
		2911002	612030612	ZB32F	IG	9	COMP	22	0	

TIN WHISKER TESTING	As specified	4918482	612023628	ZB32	IG	1	COMP	204	0	
X-RAY FA	As specified	4918482	612023628	ZB32	IG	1	COMP	15	0	
		4918482	612023627	ZB32	IG	2	COMP	15	0	
		4918482	612023632	ZB32	IG	3	COMP	15	0	
		2928001	612023096	ZB32F	IG	4	COMP	15	0	
		2928001	612023097	ZB32F	IG	5	COMP	15	0	
		2928001	612023099	ZB32F	IG	6	COMP	15	0	
		4812350	612023625	ZB32	IG	7	COMP	15	0	
		4911927	612023630	ZB32	IG	8	COMP	15	0	
		2911002	612030612	ZB32F	IG	9	COMP	15	0	

Reliability Tests Performed per Specification Requirement

Stress	Condition	Specification Reference
BALL BOND SHEAR	As specified	JESD22-B116 MIL-STD-883, MET 2011.9
BIASED HAST	130°C / 85%RH	JESD22-A110
CONSTRUCTION ANALYSIS	As specified	25-20035
DIE SHEAR	As specified	MIL--883 MET 2019 MIL-STD-883, MET 5005 2019/TM 2027
DYE PENETRANT	As specified	25-20035, 12-00292
ESD (CDM) SENSITIVITY	As specified	JS-002
FINAL VISUAL INSPECTION	As specified	12-00292, 12-00103
GLUE ADHESION	As specified	JESD22-A111
HIGH TEMP STORAGE LIFE	175°C	JESD22-A103
HIGH TEMP STORAGE LIFE	150°C	JESD22-A103
INTERNAL VISUAL	As specified	12-00292/ 001-64317/001-13598
PHYSICAL DIMENSIONS	As specified	JESD22-B100, JESD22B-108 MIL-STD-883 MET 2016
PRE CONDITIONING	MSL3_30°C / 60%RH for 192 hrs	JTD-020, JESD22-A113
PRESSURE COOKER TEST	121°C / 100%RH / 15psig	JESD22-A102
SOLDERABILITY DIP AND LOOK	As specified	JESD22-B102, J-STD-002 MIL-STD-883 MET 2003.13
TEMP CYCLE	C -65°C to 150°C	MIL-STD-883 MET 1010 , MILPRF-38535 JESD22-A104, JESD47
TIME ZERO CSAM	As specified	J-STD-020E
X-RAY FA	As specified	MIL-STD-883 MET 2012



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Revision History

Document Title: New Qualification Report for - Device
(CY62148ESL/FM28V100/CY62128ELL/CY62138FV30LL/FM28V020),
Technology (C9_CAP / FRAM), Greatek-Taiwan (IG), QTP #(202801)

Document Number: 002-32562

Rev.	Issue Date	ECN No.	Originator	Description
**	02/07/2021	7085174	JOSEPHINE.PINEDA	New Qualification Report for - Device (CY62148ESL/FM28V100/CY62128ELL/CY62138FV30LL/FM28V020), Technology (C9_CAP / FRAM), Greatek-Taiwan (IG), QTP # (202801)

Item	Marketing Part Number	Family	Sample Order Part Number	Sample Availability
1	CY62128ELL-45ZAXI	ASync	CY62128ELL-45ZAXIKT	Available
2	CY62128ELL-45ZAXIT	ASync	CY62128ELL-45ZAXIKT	Available
3	CY62128EV30LL-45ZAXI	ASync	CY62128EV30LL-45ZAXIKT	Available
4	CY62128EV30LL-45ZAXIT	ASync	CY62128EV30LL-45ZAXIKT	Available
5	CY62138FV30LL-45ZAXI	ASync	CY62138FV30LL-45ZAXIKT	Available
6	CY62138FV30LL-45ZAXIT	ASync	CY62138FV30LL-45ZAXIKT	Available
7	CY62148ESL-55ZAXI	ASync	CY62148ESL-55ZAXIKT	Available
8	CY62148ESL-55ZAXIT	ASync	CY62148ESL-55ZAXIKT	Available
9	CG7679AA	ASync	CG7679UA	Subject to lead time
10	CG7679AAT	ASync	CG7679UA	Subject to lead time
11	FM28V020-TG	FRAM	FM28V020-TGKT	Available
12	FM28V020-TGTR	FRAM	FM28V020-TGKT	Available
13	FM28V100-TG	FRAM	FM28V100-TGKT	Available
14	FM28V100-TGTR	FRAM	FM28V100-TGKT	Available