Cypress Semiconductor Corporation – An Infineon Technologies Company
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PRODUCT CHANGE NOTIFICATION

PCN: PCN200902A **Date:** November 25, 2020

Subject: Addendum to PCN200902 - Qualification of PTI-SG as an Additional Bumping, Wafer Sort, Backend and Finish Site for Select WLCSP Products

To: FUTURE ELECTRONICS
FUTURE ELE
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Change Type: Major

Description of Change:
The purpose of this addendum is to announce that Cypress, an Infineon Technologies Company has decided to not pursue the qualification of Powertech Technology Inc. (PTI-SG – 12 Ang Mo Kio Street 65, Singapore 569060) as an additional bumping, wafer sort, backend and finish site due to their decision to shut down the plant by end of December 2020.

Twenty-six (26) products listed in attached list identified with a “Note 1” have not and will not be run as production in Powertech Technology Inc. (PTI-SG – 12 Ang Mo Kio Street 65, Singapore 569060) due to plant closure.

Part Numbers Affected: 28
See the attached ‘Affected Parts List’ file for a list of all part numbers affected by this change.

Approximate Implementation Date:
This change is effective with this notification.

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# 192010 Version **

CYW89493 / 89702 / 43493 / 43502 / 43909 / 4373 / 4334 / 20702

Qualification Of PTI Singapore As An Additional WLCSP Site For UMC-SG Ball Drop And Backend Process

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

Product Description: CYW89359CUBGT **Cypress Division:** IoT Division

Single-Chip 5G WiFi IEEE 802.11ac 2×2 MAC/Baseband/ Radio with RSDB and Bluetooth 4.2 for Automotive Applications

Package:	WLCSP	**QTP:**	192010		
Description:	(4.97 x 7.5 x 0.55mm) 194 Ball, Wafer Level Chip Scale Package (WLCSP)			**Flammability:**	**O2 Index:**
Assembly:	PTI Singapore	**Molding Compound:**	N/A	UL-V0	>28
Electrical Test:	N/A				
Substrate/Leadframe:	N/A	**Die Attachment:**	N/A		
Lead Finish:	SAC-Q (SAC405 + 2% Bi + Ge/P), CY				
Comments:					

Est. Field Temperature:	55 °C	**Life Test Temperature:**	125 °C
Est. DC Field Current:	20 mA	**Life Test Dynamic Current:**	5 mA
Est. Field Voltage:	1.2 V	**Life Test Voltage:**	1.38 V
Est. Field Power Dissipation:	24 mWatts	**Est. Stress Power Dissipation:**	6.9 mWatts

Die:	89493QVB1DA	**Die Size:**	7.46 x 4.93 mm
Process:	40NM LP	**Fab:**	UMC-12I
Type:		**Density:**	N/A

II. 40nm GLL/LP/RF Life Test Failure Rate Calculation

HTOL Stress Temperature - 125 °C

Failure Mechanism	Read Points / Test Results				Modeling Parameters @ 55°C					Avg. Failure Rate FITS @ 55°C, 60% Conf.	
	24 hrs	168 hrs	500 hrs	1000 hrs	Ea eV	TAF	VAF	OAF	MTTF (yrs)	PPM	FIT
PLASTIC											
Sample Size	2716	2519	1559	1559							
Zero fails, Process ave. Ea	0 *	0	0	0	0.66	71	1	71			
Totals	**0**	**0**	**0**	**0**					**14269**	**0**	**8**

* - Contributes to early life FITS

III. Summary of Stress Test Results

Stress Test	Stress Condition	Package Type	Sample Size	Num. of Lots	Num. of Fails	Failure Rate %	Comments
Data From Qualification 192010:							
High Temp Bake	(150°C)	WLCSP [1]	45	1	0	0.00	1000 hours
ESD CDM	N/A	WLCSP [1]	3	1	Passed 1.0kV		
Preconditioning	(PC5/260°C, +0°C/-5°C)	WLCSP [1]	693	3	Passed Jedec L1		
Precon+Temp Cycle	(PC5/260°C, -65°C/150°C)	WLCSP [1]	231	3	0	0.00	500 cycles
Precon+uHAST	(PC5/260°C, Unbiased, 130°C/85% RH)	WLCSP [1]	231	3	0	0.00	96 hours
Generic Reference Data:							
Precon+HAST	(PC2/260°C, Biased, 130°C/85% RH)	FCBGA [2]	231	3	0	0.00	96 hours

Notes / Justification: 1) Results from Qual 192010, CYW89359CUBGT, 40NM LP in 194 Ball WLCSP (4.97 x 7.5 x 0.55mm)
2) Results from Qual 191701, CYW43242KFFB4G in 252 Ball FCBGA (10 x 10 x 1.05mm)

Preconditioning Flows: PC5 (JEDEC L1): Bake 125°C, 24hr => Soak @ 85°C/85%RH, 168hr => 3x Reflow

Reliability Tests Performed per Specification Requirements

Stress	Condition	Specification Reference
ESD CDM	N/A	JS002 / AEC-Q100-011
High Temp Bake	(150°C)	JESD22-A103
Precon+HAST	(PC2/260°C, Biased, 130°C/85% RH)	JESD22-A110
Precon+Temp Cycle	(PC5/260°C, -65°C/150°C)	JESD22-A104
Precon+uHAST	(PC5/260°C, Unbiased, 130°C/85% RH)	JESD22-A118
Preconditioning	(PC5/260°C, +0°C/-5°C)	J-STD-020

IV. Revision History

Document Number: 002-29518

Document Title: Qualification Of PTI Singapore As An Additional WLCSP Site For UMC-SG Ball Drop And Backend Process

Rev.	Issue Date	ECN#	Originator	Description
**	1/20/2020	6780959	BAKC	Initial Release.

Item	Marketing Part Number	Family	Sample Order Part Number	Package	Sample Availability	Note
1	2ICT00167A	WLAUTO	N/A	145-Ball WLCSP	N/A	Note1
2	71.28933.00UAG	WLAUTO	N/A	145-Ball WLCSP	N/A	Note1
3	BCM20713A1KUBXGT	WLAUTO	N/A	42-Ball WLCSP	N/A	Note1
4	BCM43353LIUBGT	WLAUTO	N/A	145-Ball WLCSP	N/A	Note1
5	BCM88335L2CUBGT	WLAUTO	N/A	145-Ball WLCSP	N/A	Note1
6	BCM88359CUBGT	WLAUTO	N/A	194-Ball WLCSP	N/A	Note1
7	BCM89335L2CUBGT	WLAUTO	N/A	145-Ball WLCSP	N/A	Note1
8	BCM89335LCUBGT	WLAUTO	N/A	145-Ball WLCSP	N/A	Note1
9	CYW20713A1KUBXGT	WLAUTO	N/A	42-Ball WLCSP	N/A	Note1
10	CYW4334WKUBGT	WIFI	N/A	109-Ball WLCSP	N/A	Note1
11	CYW43353LIUBGT	WLAUTO	N/A	145-Ball WLCSP	N/A	Note1
12	CYW43362KUBGT	WIFI	N/A	69-Ball WLCSP	N/A	Note1
13	CYW43362SKUBGT	WIFI	N/A	69-Ball WLCSP	N/A	Note1
14	CYW4339XKUBGT	WIFI	N/A	145-Ball WLCSP	N/A	Note1
15	CYW4343WKWBGT	WIFI	N/A	133-Ball WLCSP	N/A	Note1
16	CYW4354XKUBGT	WIFI	CYW4354XKUBZGT	192-Ball WLCSP	Yes	
17	CYW4356XKUBGT	WIFI	CYW4356XKUBZGT	192-Ball WLCSP	Yes	
18	CYW4373IUBGT	WIFI	N/A	128-Ball WLCSP	N/A	Note1
19	CYW43903KUBGT	WIFI	N/A	151-Ball WLCSP	N/A	Note1
20	CYW88335L2CUBGT	WLAUTO	N/A	145-Ball WLCSP	N/A	Note1
21	CYW88359CUBGT	WLAUTO	N/A	194-Ball WLCSP	N/A	Note1
22	CYW89335L2CUBGT	WLAUTO	N/A	145-Ball WLCSP	N/A	Note1
23	CYW89335LCUBGT	WLAUTO	N/A	145-Ball WLCSP	N/A	Note1
24	CG8674BAT	WIFI	N/A	192-Ball WLCSP	N/A	Note1
25	CG8705AFT	WIFI	N/A	109-Ball WLCSP	N/A	Note1
26	CG8732AFT	WIFI	N/A	109-Ball WLCSP	N/A	Note1
27	CG8883AMT	WIFI	N/A	133-Ball WLCSP	N/A	Note1
28	CG8921AMT	WIFI	N/A	192-Ball WLCSP	N/A	Note1