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PRODUCT CHANGE NOTIFICATION

PCN: PCN190302A

Date: April 05, 2019

Subject: Addendum to PCN190302 - Qualification of G700LA Mold Compound, Pure Sn Leadfinish and CuPdAu Wire for Select QFN Packages Assembled at ASE-KH

To: FUTURE ELECTRONICS
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Change Type: Major

Description of Change:

The purpose of this addendum is to update the affected parts list communicated in the initial PCN190302.

Cypress announced the qualification of G700LA mold compound, Pure Sn leadfinish and CuPdAu wire for select QFN packages assembled at Advanced Semiconductor Engineering-Kaohsiung (ASE-KH, 26 Chin 3rd Rd., 811, Nantze Export Processing Zone Kaohsiung, Taiwan, R.O.C.).

This mold compound is consistent with Cypress' drive to Green and Pb-free RoHS compliant packages. In addition, this Green and Pb-free G700LA mold compound is compatible with industry standard reflow temperatures for applicable package volume, thickness and lead finish. Also, the new leadfinish and new bond wire type is compatible with industry standards.

The 56-Lead QFN packages are assembled at ASE-KH using the following Bill of Materials:

Material	New ASE-KH Bill of Materials	Current ASE-KH Bill of Materials
Mold Compound	Sumitomo G700LA	Sumitomo G631H
Leadfinish	Pure Sn	NiPdAu
Die Attach Material	Hitachi EN4900F	Hitachi EN4900F
Bond Wire	0.8 mil CuPdAu wire	0.8 mil bare Cu wire

The 48-Lead QFN packages are assembled at ASE-KH using the following Bill of Materials:

Material	New ASE-KH Bill of Materials	Current ASE-KH Bill of Materials
Mold Compound	Sumitomo G700LA	Sumitomo G631H
Leadfinish	Pure Sn	NiPdAu
Die Attach Material	Hitachi EN4900F	Hitachi EN4900F
Bond Wire	0.8 mil CuPdAu wire	0.8 mil bare Cu wire

The 32-Lead QFN packages are assembled at ASE-KH using the following Bill of Materials:

Material	New ASE-KH Bill of Materials	Current ASE-KH Bill of Materials
Mold Compound	Sumitomo G700LA	Sumitomo G631H
Leadfinish	Pure Sn	NiPdAu
Die Attach Material	Hitachi EN4900F	Hitachi EN4900F
Bond Wire	0.8 mil CuPdAu wire	0.8 mil bare Cu wire

Benefit of Change:

The qualification of the G700LA mold compound and Pure Sn leadfinish allows for an improvement in product reliability and/or product cycle time.

The conversion to CuPdAu wire bonds will keep Cypress in alignment with the overall industry trend towards copper wire bonds.

Part Numbers Affected: 71

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 PCN.

Qualification Status:

These changes have been qualified through a series of tests documented in the Qualification Test Plans 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
182610	56L QFN 8x8x1mm BOM CHANGE QUAL AT ASE KAOHSIUNG TO MITIGATE DELAMINATION
183315	48L QFN BOM CHANGE QUAL AND CUPDAU WIRE PHASE-IN AT ASE KAOHSIUNG TO MITIGATE DELAMINATION
184103	32L QFN BOM CHANGE QUAL AND CUPDAU WIRE PHASE-IN AT ASE KAOHSIUNG TO MITIGATE DELAMINATION

Sample Status:

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 ASE-KH 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 of Commercial, Industrial and Automotive non-PPAP part numbers in the attached file will be assembled at ASE-KH or other approved assembly sites.

Anticipated Impact:

Products assembled with the G700LA mold compound, Pure Sn leadfinish and CuPdAu wire 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.

Sincerely,

Cypress PCN Administration

Cypress Semiconductor Package Qualification Report

QTP# 183315 VERSION
December 2018**

**QFN-48 (7x7x1.0mm)
Pure Sn, CuPdAu Wire
MSL3, 260°C Reflow
ASEK-Taiwan (G)**

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

QTP Number	Description of Qualification Purpose	Date
133309	Qualification of QFN-48 (7x7x1.0mm) / QFN68L (8x8x1.0mm) in ASEK assembly using 0.8mil CuPd wire, G700LA / G700SLA mold comp, EN4900F die attach epoxy with Pure Sn leadfinish. This is large die qual for 68L QFN assembled in ASEK.	Aug 2013
182610	Qualification of QFN-56 (8x8x1.0mm) in ASEK-Taiwan (G) using 0.8mil CuPdAu wire with G700LA mold compound, EN4900F die attach material and Pure Sn leadfinish at MSL3, 260°C Reflow Temperature	Dec 2018
183315	Qualification of QFN-48 (7x7x1.0mm) in ASEK-Taiwan (G) using 0.8mil CuPdAu wire with G700LA mold compound, EN4900F die attach material and Pure Sn leadfinish at MSL3, 260°C Reflow Temperature	Dec 2018

MAJOR PACKAGE INFORMATION USED IN THIS QUALIFICATION	
Package Designation:	QFN68L
Package Outline, Type, or Name:	QFN68L (8x8x1.0mm)
Mold Compound Name/Manufacturer:	G700LA / Sumitomo G700SLA / Sumitomo
Mold Compound Flammability Rating:	V-0 / UL94
Mold Compound Alpha Emission Rate:	G700LA – n/a G700SLA - <0.001 cph/m2
Oxygen Rating Index: >28%	54% (typical)
Lead Frame Designation:	RMP (with slots)
Lead Frame Material:	Copper
Substrate Material:	n/a
Lead Finish, Composition / Thickness:	Pure Sn
Die Backside Preparation Method/Metallization:	Backgrind
Die Separation Method:	Wafer Saw
Die Attach Supplier:	HITACHI
Die Attach Material:	EN4900F
Bond Diagram Designation	001-76055
Wire Bond Method:	Thermosonic
Wire Material/Size:	CuPd / 0.8mil
Thermal Resistance Theta JA °C/W:	14.17 C/W
Package Cross Section Yes/No:	n/a
Assembly Process Flow:	49-41999
Name/Location of Assembly (prime) facility:	ASE-G
MSL LEVEL	3
REFLOW PROFILE	260C

ELECTRICAL TEST / FINISH DESCRIPTION	
Test Location:	CML (R)

Note: Please contact a Cypress Representative for other package availability.

MAJOR PACKAGE INFORMATION USED IN THIS QUALIFICATION	
Package Designation:	QFN56
Package Outline, Type, or Name:	QFN56 (8x8x1.0mm)
Mold Compound Name/Manufacturer:	G700LA / Sumitomo
Mold Compound Flammability Rating:	V-0 / UL94
Mold Compound Alpha Emission Rate:	G700LA – n/a
Oxygen Rating Index: >28%	54% (typical)
Lead Frame Designation:	RMP (with slots)
Lead Frame Material:	Copper
Substrate Material:	n/a
Lead Finish, Composition / Thickness:	Pure Sn
Die Backside Preparation Method/Metallization:	Backgrind
Die Separation Method:	Wafer Saw
Die Attach Supplier:	HITACHI
Die Attach Material:	EN4900F
Bond Diagram Designation	001-74242 / 001-69552 / 001-68162
Wire Bond Method:	Thermosonic
Wire Material/Size:	CuPdAu / 0.8mil (20um)
Thermal Resistance Theta JA °C/W:	16.6 C/W
Package Cross Section Yes/No:	n/a
Assembly Process Flow:	49-41999
Name/Location of Assembly (prime) facility:	ASE-G
MSL Level	3
Reflow Profile	260C

ELECTRICAL TEST / FINISH DESCRIPTION	
Test Location:	CML (R)

Note: Please contact a Cypress Representative for other package availability.

MAJOR PACKAGE INFORMATION USED IN THIS QUALIFICATION	
Package Designation:	QFN48
Package Outline, Type, or Name:	QFN48 (7x7x1.0mm)
Mold Compound Name/Manufacturer:	G700LA / Sumitomo
Mold Compound Flammability Rating:	V-0 / UL94
Mold Compound Alpha Emission Rate:	G700LA – n/a
Oxygen Rating Index: >28%	54% (typical)
Lead Frame Designation:	RMP (with slots)
Lead Frame Material:	Copper
Substrate Material:	n/a
Lead Finish, Composition / Thickness:	Pure Sn
Die Backside Preparation Method/Metallization:	Backgrind
Die Separation Method:	Wafer Saw
Die Attach Supplier:	HITACHI
Die Attach Material:	EN4900F
Bond Diagram Designation	001-69865
Wire Bond Method:	Thermosonic
Wire Material/Size:	CuPdAu / 0.8mil (20um)
Thermal Resistance Theta JA °C/W:	16.6 C/W
Package Cross Section Yes/No:	n/a
Assembly Process Flow:	49-41999
Name/Location of Assembly (prime) facility:	ASE-G
MSL Level	3
Reflow Profile	260C

ELECTRICAL TEST / FINISH DESCRIPTION	
Test Location:	CML (R)

Note: Please contact a Cypress Representative for other package availability.

RELIABILITY TESTS PERFORMED PER SPECIFICATION REQUIREMENTS

Stress/Test	Test Condition (Temp/Bias)	Result P/F
Pressure Cooker Test	JESD22-A102, 121 C, 100%RH, 15 PSIG Precondition: JESD22 Moisture Sensitivity Level (192 Hrs., 30 C°, 60% RH, 260C Reflow)	P
Temperature Cycle	MIL-STD-883C, Method 1010, Condition C, -65 C to 150 C Precondition: JESD22 Moisture Sensitivity Level (192 Hrs., 30 C°, 60% RH, 260C Reflow)	P
Acoustic Microscopy	J-STD-020 Precondition: JESD22 Moisture Sensitivity Level (192 Hrs., 30 C°, 60% RH, 260C Reflow)	P
Constructional Analysis	Criteria: Meet external and internal characteristics of package	P
High Accelerated Saturation Test (HAST)	JEDEC STD 22-A110, 130 C, 85%RH, 5.5V Precondition: JESD22 Moisture Sensitivity Level (192 Hrs., 30 C°, 60% RH, 260C Reflow)	P
X-Ray	MIL-STD-883 - 2012	P
Ball Shear	JESD22-B116A, Cpk : 1.33, Ppk : 1.66	P
Internal Visual	MIL-STD-883-2014	P
High Temp Storage	JESD22-A103: 150 C, no bias	P
Dye Penetrant Test	Test to determine the existence and extent of cracks, Criteria: No Package Crack	P
Die Shear	MIL-STD-883, Method 2019	
Thermal Shock	MIL-STD-883C, Method 1011, Condition B, -55 C to 125C and JESD22-A106B	P
Bond Pull	MIL-STD-883 – Method 2011, Cpk : 1.33, Ppk : 1.66 P	P

Reliability Test Data

QTP #: 133309

<i>Device</i>	<i>Package</i>	<i>Fab Lot #</i>	<i>Assy Lot #</i>	<i>Assy Loc</i>	<i>Duration</i>	<i>Samp</i>	<i>Rej</i>	<i>Failure Mechanism</i>
STRESS: ACOUSTIC, MSL3								
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314399	ASE-G	COMP	15	0	
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314401	ASE-G	COMP	15	0	
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314402	ASE-G	COMP	15	0	
STRESS: BALL SHEAR								
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314399	ASE-G	COMP	150	0	
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314401	ASE-G	COMP	150	0	
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314402	ASE-G	COMP	150	0	
STRESS: BOND PULL								
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314399	ASE-G	COMP	150	0	
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314401	ASE-G	COMP	150	0	
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314402	ASE-G	COMP	150	0	
STRESS: CONSTRUCTIONAL ANALYSIS								
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314399	ASE-G	COMP	5	0	
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314401	ASE-G	COMP	5	0	
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314402	ASE-G	COMP	5	0	
STRESS: DIE SHEAR								
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314399	ASE-G	COMP	15	0	
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314401	ASE-G	COMP	15	0	
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314402	ASE-G	COMP	15	0	
STRESS: DYE PENETRANT TEST								
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314399	ASE-G	COMP	15	0	
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314401	ASE-G	COMP	15	0	
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314402	ASE-G	COMP	15	0	
STRESS: HI-ACCEL SATURATION TEST, 130C, 5.5V, 85%RH, PRE COND 192 HR 30C/60%RH, MSL3								
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314399	ASE-G	128	80	0	
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314401	ASE-G	128	80	0	
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314402	ASE-G	128	37	0	

Reliability Test Data

QTP #: 133309

<i>Device</i>	<i>Package</i>	<i>Fab Lot #</i>	<i>Assy Lot #</i>	<i>Assy Loc</i>	<i>Duration</i>	<i>Samp</i>	<i>Rej</i>	<i>Failure Mechanism</i>
STRESS: HIGH TEMPERATURE STORAGE								
CY8CTMA4634 (8CC20411BC)	LQ56B	4225607	611318686	ASE-G	500	78	0	
CY8CTMA4634 (8CC20411BC)	LQ56B	4225607	611318688	ASE-G	500	78	0	
CY8CTMA4634 (8CC20411BC)	LQ56B	4225607	611318689	ASE-G	500	78	0	
STRESS: INTERNAL VISUAL								
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314399	ASE-G	COMP	5	0	
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314401	ASE-G	COMP	80	0	
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314402	ASE-G	COMP	37	0	
STRESS: PRESSURE COOKER TEST (121C, 100%RH), 15 Psig, PRE COND 192 HR 30C/60%RH (MSL3)								
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314399	ASE-G	168	80	0	
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314399	ASE-G	288	80	0	
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314401	ASE-G	168	80	0	
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314401	ASE-G	288	80	0	
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314402	ASE-G	168	80	0	
STRESS: TC COND. C -65C TO 150C, PRECONDITION 192 HRS 30C/60%RH								
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314399	ASE-G	500	80	0	
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314399	ASE-G	1000	80	0	
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314401	ASE-G	500	80	0	
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314401	ASE-G	1000	80	0	
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314402	ASE-G	500	80	0	
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314402	ASE-G	1000	80	0	
STRESS: XRAY								
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314399	ASE-G	COMP	15	0	
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314401	ASE-G	COMP	15	0	
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314402	ASE-G	COMP	15	0	

Reliability Test Data

QTP #: 182610

<i>Device</i>	<i>Package</i>	<i>Fab Lot #</i>	<i>Assy Lot #</i>	<i>Assy Loc</i>	<i>Duration</i>	<i>Samp</i>	<i>Rej</i>	<i>Failure Mechanism</i>
STRESS: ACOUSTIC, MSL3								
CY8CLED01D01 (8CC43341BC)	LT56Y	4705810	611813012	ASE-G	COMP	22	0	
CY7C65621 (7CC65620DK)	LT56Y	4745119	611813010	ASE-G	COMP	22	0	
CY7C65640A (7CC65642EC)	LT56Y	4712660	611813011	ASE-G	COMP	22	0	
STRESS: BALL SHEAR								
CY8CLED01D01 (8CC43341BC)	LT56Y	4705810	611813012	ASE-G	COMP	100	0	
CY7C65621 (7CC65620DK)	LT56Y	4745119	611813010	ASE-G	COMP	100	0	
CY7C65640A (7CC65642EC)	LT56Y	4712660	611813011	ASE-G	COMP	100	0	
STRESS: BOND PULL								
CY8CLED01D01 (8CC43341BC)	LT56Y	4705810	611813012	ASE-G	COMP	100	0	
CY7C65621 (7CC65620DK)	LT56Y	4745119	611813010	ASE-G	COMP	100	0	
CY7C65640A (7CC65642EC)	LT56Y	4712660	611813011	ASE-G	COMP	100	0	
STRESS: CONSTRUCTIONAL ANALYSIS								
CY8CLED01D01 (8CC43341BC)	LT56Y	4705810	611813012	ASE-G	COMP	5	0	
STRESS: DYE PENETRANT TEST								
CY8CLED01D01 (8CC43341BC)	LT56Y	4705810	611813012	ASE-G	COMP	15	0	
CY7C65621 (7CC65620DK)	LT56Y	4745119	611813010	ASE-G	COMP	15	0	
CY7C65640A (7CC65642EC)	LT56Y	4712660	611813011	ASE-G	COMP	15	0	
STRESS: FINAL VISUAL INSPECTION								
CY8CLED01D01 (8CC43341BC)	LT56Y	4705810	611813012	ASE-G	COMP	468	0	
CY7C65621 (7CC65620DK)	LT56Y	4745119	611813010	ASE-G	COMP	495	0	
CY7C65640A (7CC65642EC)	LT56Y	4712660	611813011	ASE-G	COMP	491	0	
STRESS: HIGH TEMPERATURE STORAGE								
CY8CLED01D01 (8CC43341BC)	LT56Y	4705810	611813012	ASE-G	500	50	0	
STRESS: HIGH TEMP DYNAMIC OPERATING LIFE-LATENT FAILURE RATE (150C, 3.8V, Vcc Max)								
CY7C65621 (7CC65620DK)	LT56Y	4745119	611813010	ASE-G	500	80	0	

Reliability Test Data

QTP #: 182610

Device	Package	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: HI-ACCEL SATURATION TEST, 130C, 5.6V, 85%RH, PRE COND 192 HR 30C/60%RH, MSL3								
CY7C65621 (7CC65620DK)	LT56Y	4745119	611813010	ASE-G	96	30	0	
CY7C65640A (7CC65642EC)	LT56Y	4712660	611813011	ASE-G	96	30	0	
CY8C28645 (8CC28645AC)	LT48D	4752146	611815204	ASE-G	96	30	0	
STRESS: PRESSURE COOKER TEST (121C, 100%RH), 15 Psig, PRE COND 192 HR 30C/60%RH (MSL3)								
CY8CLED01D01 (8CC43341BC)	LT56Y	4705810	611813012	ASE-G	168	80	0	
CY7C65621 (7CC65620DK)	LT56Y	4745119	611813010	ASE-G	168	80	0	
CY7C65640A (7CC65642EC)	LT56Y	4712660	611813011	ASE-G	168	80	0	
STRESS: TC COND. C -65C TO 150C, PRECONDITION 192 HRS 30C/60%RH								
CY8CLED01D01 (8CC43341BC)	LT56Y	4705810	611813012	ASE-G	500	80	0	
CY7C65621 (7CC65620DK)	LT56Y	4745119	611813010	ASE-G	500	80	0	
CY7C65621 (7CC65620DK)	LT56Y	4745119	611813010	ASE-G	1000	80	0	
CY7C65640A (7CC65642EC)	LT56Y	4712660	611813011	ASE-G	500	80	0	
CY7C65640A (7CC65642EC)	LT56Y	4712660	611813011	ASE-G	1000	80	0	
STRESS: XRAY								
CY8CLED01D01 (8CC43341BC)	LT56Y	4705810	611813012	ASE-G	COMP	15	0	
CY7C65621 (7CC65620DK)	LT56Y	4745119	611813010	ASE-G	COMP	15	0	
CY7C65640A (7CC65642EC)	LT56Y	4712660	611813011	ASE-G	COMP	15	0	

Reliability Test Data

QTP #: 183315

<i>Device</i>	<i>Package</i>	<i>Fab Lot #</i>	<i>Assy Lot #</i>	<i>Assy Loc</i>	<i>Duration</i>	<i>Samp</i>	<i>Rej</i>	<i>Failure Mechanism</i>
STRESS: ACOUSTIC, MSL3								
CY8C28645 (8CC28645AC)	LT48D	4752146	611815204	ASE-G	COMP	22	0	
CY8C28645 (8CC28645AC)	LT48D	4752146	611812800	ASE-G	COMP	22	0	
CY8C28645 (8CC28645AC)	LT48D	4752146	611819299	ASE-G	COMP	22	0	
STRESS: BALL SHEAR								
CY8C28645 (8CC28645AC)	LT48D	4752146	611815204	ASE-G	COMP	100	0	
CY8C28645 (8CC28645AC)	LT48D	4752146	611812800	ASE-G	COMP	100	0	
CY8C28645 (8CC28645AC)	LT48D	4752146	611819299	ASE-G	COMP	100	0	
STRESS: BOND PULL								
CY8C28645 (8CC28645AC)	LT48D	4752146	611815204	ASE-G	COMP	100	0	
CY8C28645 (8CC28645AC)	LT48D	4752146	611812800	ASE-G	COMP	100	0	
CY8C28645 (8CC28645AC)	LT48D	4752146	611819299	ASE-G	COMP	100	0	
STRESS: CONSTRUCTIONAL ANALYSIS								
CY8C28645 (8CC28645AC)	LT48D	4752146	611815204	ASE-G	COMP	5	0	
CY8C28645 (8CC28645AC)	LT48D	4752146	611812800	ASE-G	COMP	5	0	
CY8C28645 (8CC28645AC)	LT48D	4752146	611819299	ASE-G	COMP	5	0	
STRESS: DYE PENETRANT TEST								
CY8C28645 (8CC28645AC)	LT48D	4752146	611815204	ASE-G	COMP	15	0	
CY8C28645 (8CC28645AC)	LT48D	4752146	611812800	ASE-G	COMP	15	0	
CY8C28645 (8CC28645AC)	LT48D	4752146	611819299	ASE-G	COMP	15	0	
STRESS: FINAL VISUAL INSPECTION								
CY8C28645 (8CC28645AC)	LT48D	4752146	611815204	ASE-G	COMP	499	0	
CY8C28645 (8CC28645AC)	LT48D	4752146	611812800	ASE-G	COMP	496	0	
CY8C28645 (8CC28645AC)	LT48D	4752146	611819299	ASE-G	COMP	498	0	
STRESS: HI-ACCEL SATURATION TEST, 130C, 5.6V, 85%RH, PRE COND 192 HR 30C/60%RH, MSL3								
CY8C28645 (8CC28645AC)	LT48D	4752146	611815204	ASE-G	96	30	0	
CY8C28645 (8CC28645AC)	LT48D	4752146	611812800	ASE-G	96	30	0	
CY8C28645 (8CC28645AC)	LT48D	4752146	611819299	ASE-G	96	30	0	

Reliability Test Data

QTP #: 183315

Device	Package	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
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STRESS: HIGH TEMPERATURE STORAGE

CY8C28645 (8CC28645AC)	LT48D	4752146	611815204	ASE-G	500	50	0	
CY8C28645 (8CC28645AC)	LT48D	4752146	611815204	ASE-G	1000	50	0	

STRESS: PRESSURE COOKER TEST (121C, 100%RH), 15 Psig, PRE COND 192 HR 30C/60%RH (MSL3)

CY8C28645 (8CC28645AC)	LT48D	4752146	611815204	ASE-G	96	80	0	
CY8C28645 (8CC28645AC)	LT48D	4752146	611815204	ASE-G	168	80	0	
CY8C28645 (8CC28645AC)	LT48D	4752146	611812800	ASE-G	96	80	0	
CY8C28645 (8CC28645AC)	LT48D	4752146	611812800	ASE-G	168	80	0	
CY8C28645 (8CC28645AC)	LT48D	4752146	611819299	ASE-G	96	80	0	
CY8C28645 (8CC28645AC)	LT48D	4752146	611819299	ASE-G	168	80	0	

STRESS: TC COND. C -65C TO 150C, PRECONDITION 192 HRS 30C/60%RH

CY8C28645 (8CC28645AC)	LT48D	4752146	611815204	ASE-G	500	80	0	
CY8C28645 (8CC28645AC)	LT48D	4752146	611815204	ASE-G	1000	80	0	
CY8C28645 (8CC28645AC)	LT48D	4752146	611812800	ASE-G	500	79	0	
CY8C28645 (8CC28645AC)	LT48D	4752146	611812800	ASE-G	1000	79	0	
CY8C28645 (8CC28645AC)	LT48D	4752146	611819299	ASE-G	500	80	0	
CY8C28645 (8CC28645AC)	LT48D	4752146	611819299	ASE-G	1000	80	0	

STRESS: XRAY

CY8C28645 (8CC28645AC)	LT48D	4752146	611815204	ASE-G	COMP	15	0	
CY8C28645 (8CC28645AC)	LT48D	4752146	611812800	ASE-G	COMP	15	0	
CY8C28645 (8CC28645AC)	LT48D	4752146	611819299	ASE-G	COMP	15	0	



Document History Page

Document Title:QTP#183315: QFN-48 (7x7x1.0mm) PURE SN, CUPDAU WIRE MSL3, 260C REFLOW ASEK-TAIWAN (G)

Document Number: 002-25944

Rev.	ECN No.	Orig. of Change	Description of Change
**	6410114	HSTO	Initial Spec Release

Cypress Semiconductor Package Qualification Report

QTP# 184103 VERSION
December 2018**

**QFN-32 (5x5x1.0mm)
Pure Sn, CuPdAu Wire
MSL3, 260°C Reflow
ASEK-Taiwan (G)**

**FOR ANY QUESTIONS ON THIS REPORT, PLEASE CONTACT
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Approved By:
David Hoffman (DHH)
Reliability Director

PACKAGE QUALIFICATION HISTORY

QTP Number	Description of Qualification Purpose	Date
133309	Qualification of QFN-48 (7x7x1.0mm) / QFN68L (8x8x1.0mm) in ASEK assembly using 0.8mil CuPd wire, G700LA / G700SLA mold comp, EN4900F die attach epoxy with Pure Sn leadfinish. This is large die qual for 68L QFN assembled in ASEK.	Aug. 2013
182610	Qualification of QFN-56 (8x8x1.0mm) in ASEK-Taiwan (G) using 0.8mil CuPdAu wire with G700LA mold compound, EN4900F die attach material and Pure Sn leadfinish at MSL3, 260°C Reflow Temperature	Dec. 2018
183315	Qualification of QFN-48 (7x7x1.0mm) in ASEK-Taiwan (G) using 0.8mil CuPdAu wire with G700LA mold compound, EN4900F die attach material and Pure Sn leadfinish at MSL3, 260°C Reflow Temperature	Dec. 2018
184103	Qualification of QFN-32 (5x5x1.0mm) in ASEK-Taiwan (G) using 0.8mil CuPdAu wire with G700LA mold compound, EN4900F die attach material and Pure Sn leadfinish at MSL3, 260°C Reflow Temperature	Dec. 2018

MAJOR PACKAGE INFORMATION USED IN THIS QUALIFICATION	
Package Designation:	QFN68
Package Outline, Type, or Name:	QFN68 (8x8x1.0mm)
Mold Compound Name/Manufacturer:	G700LA / Sumitomo G700SLA / Sumitomo
Mold Compound Flammability Rating:	V-0 / UL94
Mold Compound Alpha Emission Rate:	G700LA – n/a G700SLA - <0.001 cph/m2
Oxygen Rating Index: >28%	54% (typical)
Lead Frame Designation:	RMP (with slots)
Lead Frame Material:	Copper
Substrate Material:	n/a
Lead Finish, Composition / Thickness:	Pure Sn
Die Backside Preparation Method/Metallization:	Backgrind
Die Separation Method:	Wafer Saw
Die Attach Supplier:	HITACHI
Die Attach Material:	EN4900F
Bond Diagram Designation	001-76055
Wire Bond Method:	Thermosonic
Wire Material/Size:	CuPd / 0.8mil
Thermal Resistance Theta JA °C/W:	14.17 C/W
Package Cross Section Yes/No:	n/a
Assembly Process Flow:	49-41999
Name/Location of Assembly (prime) facility:	ASE-G
MSL LEVEL	3
REFLOW PROFILE	260C

ELECTRICAL TEST / FINISH DESCRIPTION	
Test Location:	CML (R)

Note: Please contact a Cypress Representative for other package availability.

MAJOR PACKAGE INFORMATION USED IN THIS QUALIFICATION	
Package Designation:	QFN56
Package Outline, Type, or Name:	QFN56 (8x8x1.0mm)
Mold Compound Name/Manufacturer:	G700LA / Sumitomo
Mold Compound Flammability Rating:	V-0 / UL94
Mold Compound Alpha Emission Rate:	G700LA – n/a
Oxygen Rating Index: >28%	54% (typical)
Lead Frame Designation:	RMP (with slots)
Lead Frame Material:	Copper
Substrate Material:	n/a
Lead Finish, Composition / Thickness:	Pure Sn
Die Backside Preparation Method/Metallization:	Backgrind
Die Separation Method:	Wafer Saw
Die Attach Supplier:	HITACHI
Die Attach Material:	EN4900F
Bond Diagram Designation	001-74242 / 001-69552 / 001-68162
Wire Bond Method:	Thermosonic
Wire Material/Size:	CuPdAu / 0.8mil (20um)
Package Cross Section Yes/No:	n/a
Assembly Process Flow:	49-41999
Name/Location of Assembly (prime) facility:	ASE-G
MSL Level	3
Reflow Profile	260C

ELECTRICAL TEST / FINISH DESCRIPTION	
Test Location:	CML (R)

Note: Please contact a Cypress Representative for other package availability.

MAJOR PACKAGE INFORMATION USED IN THIS QUALIFICATION	
Package Designation:	QFN48
Package Outline, Type, or Name:	QFN48 (7x7x1.0mm)
Mold Compound Name/Manufacturer:	G700LA / Sumitomo
Mold Compound Flammability Rating:	V-0 / UL94
Mold Compound Alpha Emission Rate:	G700LA – n/a
Oxygen Rating Index: >28%	54% (typical)
Lead Frame Designation:	RMP (with slots)
Lead Frame Material:	Copper
Substrate Material:	n/a
Lead Finish, Composition / Thickness:	Pure Sn
Die Backside Preparation Method/Metallization:	Backgrind
Die Separation Method:	Wafer Saw
Die Attach Supplier:	HITACHI
Die Attach Material:	EN4900F
Bond Diagram Designation	001-69865
Wire Bond Method:	Thermosonic
Wire Material/Size:	CuPdAu / 0.8mil (20um)
Package Cross Section Yes/No:	n/a
Assembly Process Flow:	49-41999
Name/Location of Assembly (prime) facility:	ASE-G
MSL Level	3
Reflow Profile	260C

ELECTRICAL TEST / FINISH DESCRIPTION	
Test Location:	CML (R)

Note: Please contact a Cypress Representative for other package availability.

MAJOR PACKAGE INFORMATION USED IN THIS QUALIFICATION	
Package Designation:	QFN32
Package Outline, Type, or Name:	QFN32 (5x5x1.0mm)
Mold Compound Name/Manufacturer:	G700LA / Sumitomo
Mold Compound Flammability Rating:	V-0 / UL94
Mold Compound Alpha Emission Rate:	G700LA – n/a
Oxygen Rating Index: >28%	54% (typical)
Lead Frame Designation:	FMP
Lead Frame Material:	Copper
Substrate Material:	n/a
Lead Finish, Composition / Thickness:	Pure Sn
Die Backside Preparation Method/Metallization:	Backgrind
Die Separation Method:	Wafer Saw
Die Attach Supplier:	HITACHI
Die Attach Material:	EN4900F
Bond Diagram Designation	001-90049/ 001-68160/ 001-69576
Wire Bond Method:	Thermosonic
Wire Material/Size:	CuPdAu / 0.8mil (20um)
Package Cross Section Yes/No:	n/a
Assembly Process Flow:	49-41999
Name/Location of Assembly (prime) facility:	ASE-G
MSL Level	3
Reflow Profile	260C

RELIABILITY TESTS PERFORMED PER SPECIFICATION REQUIREMENTS

Stress/Test	Test Condition (Temp/Bias)	Result P/F
Pressure Cooker Test	JESD22-A102, 121 C, 100%RH, 15 PSIG Precondition: JESD22 Moisture Sensitivity Level (192 Hrs., 30 C°, 60% RH, 260C Reflow)	P
Temperature Cycle	MIL-STD-883C, Method 1010, Condition C, -65 C to 150 C Precondition: JESD22 Moisture Sensitivity Level (192 Hrs., 30 C°, 60% RH, 260C Reflow)	P
Acoustic Microscopy	J-STD-020 Precondition: JESD22 Moisture Sensitivity Level (192 Hrs., 30 C°, 60% RH, 260C Reflow)	P
Constructional Analysis	Criteria: Meet external and internal characteristics of package	P
High Accelerated Saturation Test (HAST)	JEDEC STD 22-A110, 130 C, 85%RH, 5.5V Precondition: JESD22 Moisture Sensitivity Level (192 Hrs., 30 C°, 60% RH, 260C Reflow)	P
X-Ray	MIL-STD-883 - 2012	P
Ball Shear	JESD22-B116A, Cpk : 1.33, Ppk : 1.66	P
Internal Visual	MIL-STD-883-2014	P
High Temp Storage	JESD22-A103: 150 C, no bias	P
Dye Penetrant Test	Test to determine the existence and extent of cracks, Criteria: No Package Crack	P
Die Shear	MIL-STD-883, Method 2019	
Thermal Shock	MIL-STD-883C, Method 1011, Condition B, -55 C to 125C and JESD22-A106B	P
Bond Pull	MIL-STD-883 – Method 2011, Cpk : 1.33, Ppk : 1.66 P	P

Reliability Test Data

QTP #: 133309

<i>Device</i>	<i>Package</i>	<i>Fab Lot #</i>	<i>Assy Lot #</i>	<i>Assy Loc</i>	<i>Duration</i>	<i>Samp</i>	<i>Rej</i>	<i>Failure Mechanism</i>
STRESS: ACOUSTIC, MSL3								
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314399	ASE-G	COMP	15	0	
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314401	ASE-G	COMP	15	0	
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314402	ASE-G	COMP	15	0	
STRESS: BALL SHEAR								
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314399	ASE-G	COMP	150	0	
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314401	ASE-G	COMP	150	0	
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314402	ASE-G	COMP	150	0	
STRESS: BOND PULL								
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314399	ASE-G	COMP	150	0	
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314401	ASE-G	COMP	150	0	
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314402	ASE-G	COMP	150	0	
STRESS: CONSTRUCTIONAL ANALYSIS								
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314399	ASE-G	COMP	5	0	
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314401	ASE-G	COMP	5	0	
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314402	ASE-G	COMP	5	0	
STRESS: DIE SHEAR								
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314399	ASE-G	COMP	15	0	
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314401	ASE-G	COMP	15	0	
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314402	ASE-G	COMP	15	0	
STRESS: DYE PENETRANT TEST								
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314399	ASE-G	COMP	15	0	
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314401	ASE-G	COMP	15	0	
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314402	ASE-G	COMP	15	0	
STRESS: HI-ACCEL SATURATION TEST, 130C, 5.5V, 85%RH, PRE COND 192 HR 30C/60%RH, MSL3								
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314399	ASE-G	128	80	0	
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314401	ASE-G	128	80	0	
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314402	ASE-G	128	37	0	

Reliability Test Data

QTP #: 133309

<i>Device</i>	<i>Package</i>	<i>Fab Lot #</i>	<i>Assy Lot #</i>	<i>Assy Loc</i>	<i>Duration</i>	<i>Samp</i>	<i>Rej</i>	<i>Failure Mechanism</i>
STRESS: HIGH TEMPERATURE STORAGE								
CY8CTMA4634 (8CC20411BC)	LQ56B	4225607	611318686	ASE-G	500	78	0	
CY8CTMA4634 (8CC20411BC)	LQ56B	4225607	611318688	ASE-G	500	78	0	
CY8CTMA4634 (8CC20411BC)	LQ56B	4225607	611318689	ASE-G	500	78	0	
STRESS: INTERNAL VISUAL								
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314399	ASE-G	COMP	5	0	
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314401	ASE-G	COMP	80	0	
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314402	ASE-G	COMP	37	0	
STRESS: PRESSURE COOKER TEST (121C, 100%RH), 15 Psig, PRE COND 192 HR 30C/60%RH (MSL3)								
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314399	ASE-G	168	80	0	
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314399	ASE-G	288	80	0	
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314401	ASE-G	168	80	0	
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314401	ASE-G	288	80	0	
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314402	ASE-G	168	80	0	
STRESS: TC COND. C -65C TO 150C, PRECONDITION 192 HRS 30C/60%RH								
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314399	ASE-G	500	80	0	
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314399	ASE-G	1000	80	0	
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314401	ASE-G	500	80	0	
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314401	ASE-G	1000	80	0	
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314402	ASE-G	500	80	0	
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314402	ASE-G	1000	80	0	
STRESS: XRAY								
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314399	ASE-G	COMP	15	0	
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314401	ASE-G	COMP	15	0	
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314402	ASE-G	COMP	15	0	

Reliability Test Data

QTP #: 182610

Device	Package	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: ACOUSTIC, MSL3								
CY8CLED01D01 (8CC43341BC)	LT56Y	4705810	611813012	ASE-G	COMP	22	0	
CY7C65621 (7CC65620DK)	LT56Y	4745119	611813010	ASE-G	COMP	22	0	
CY7C65640A (7CC65642EC)	LT56Y	4712660	611813011	ASE-G	COMP	22	0	
STRESS: BALL SHEAR								
CY8CLED01D01 (8CC43341BC)	LT56Y	4705810	611813012	ASE-G	COMP	100	0	
CY7C65621 (7CC65620DK)	LT56Y	4745119	611813010	ASE-G	COMP	100	0	
CY7C65640A (7CC65642EC)	LT56Y	4712660	611813011	ASE-G	COMP	100	0	
STRESS: BOND PULL								
CY8CLED01D01 (8CC43341BC)	LT56Y	4705810	611813012	ASE-G	COMP	100	0	
CY7C65621 (7CC65620DK)	LT56Y	4745119	611813010	ASE-G	COMP	100	0	
CY7C65640A (7CC65642EC)	LT56Y	4712660	611813011	ASE-G	COMP	100	0	
STRESS: CONSTRUCTIONAL ANALYSIS								
CY8CLED01D01 (8CC43341BC)	LT56Y	4705810	611813012	ASE-G	COMP	5	0	
STRESS: DYE PENETRANT TEST								
CY8CLED01D01 (8CC43341BC)	LT56Y	4705810	611813012	ASE-G	COMP	15	0	
CY7C65621 (7CC65620DK)	LT56Y	4745119	611813010	ASE-G	COMP	15	0	
CY7C65640A (7CC65642EC)	LT56Y	4712660	611813011	ASE-G	COMP	15	0	
STRESS: FINAL VISUAL INSPECTION								
CY8CLED01D01 (8CC43341BC)	LT56Y	4705810	611813012	ASE-G	COMP	468	0	
CY7C65621 (7CC65620DK)	LT56Y	4745119	611813010	ASE-G	COMP	495	0	
CY7C65640A (7CC65642EC)	LT56Y	4712660	611813011	ASE-G	COMP	491	0	
STRESS: HIGH TEMPERATURE STORAGE								
CY8CLED01D01 (8CC43341BC)	LT56Y	4705810	611813012	ASE-G	500	50	0	
STRESS: HIGH TEMP DYNAMIC OPERATING LIFE-LATENT FAILURE RATE (150C, 3.8V, Vcc Max)								
CY7C65621 (7CC65620DK)	LT56Y	4745119	611813010	ASE-G	500	80	0	

Reliability Test Data

QTP #: 182610

Device	Package	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
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STRESS: HI-ACCEL SATURATION TEST, 130C, 5.6V, 85%RH, PRE COND 192 HR 30C/60%RH, MSL3

CY7C65621 (7CC65620DK)	LT56Y	4745119	611813010	ASE-G	96	30	0	
CY7C65640A (7CC65642EC)	LT56Y	4712660	611813011	ASE-G	96	30	0	
CY8C28645 (8CC28645AC)	LT48D	4752146	611815204	ASE-G	96	30	0	

STRESS: PRESSURE COOKER TEST (121C, 100%RH), 15 Psig, PRE COND 192 HR 30C/60%RH (MSL3)

CY8CLED01D01 (8CC43341BC)	LT56Y	4705810	611813012	ASE-G	168	80	0	
CY7C65621 (7CC65620DK)	LT56Y	4745119	611813010	ASE-G	168	80	0	
CY7C65640A (7CC65642EC)	LT56Y	4712660	611813011	ASE-G	168	80	0	

STRESS: TC COND. C -65C TO 150C, PRECONDITION 192 HRS 30C/60%RH

CY8CLED01D01 (8CC43341BC)	LT56Y	4705810	611813012	ASE-G	500	80	0	
CY7C65621 (7CC65620DK)	LT56Y	4745119	611813010	ASE-G	500	80	0	
CY7C65621 (7CC65620DK)	LT56Y	4745119	611813010	ASE-G	1000	80	0	
CY7C65640A (7CC65642EC)	LT56Y	4712660	611813011	ASE-G	500	80	0	
CY7C65640A (7CC65642EC)	LT56Y	4712660	611813011	ASE-G	1000	80	0	

STRESS: XRAY

CY8CLED01D01 (8CC43341BC)	LT56Y	4705810	611813012	ASE-G	COMP	15	0	
CY7C65621 (7CC65620DK)	LT56Y	4745119	611813010	ASE-G	COMP	15	0	
CY7C65640A (7CC65642EC)	LT56Y	4712660	611813011	ASE-G	COMP	15	0	

Reliability Test Data

QTP #: 183315

Device	Package	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: ACOUSTIC, MSL3								
CY8C28645 (8CC28645AC)	LT48D	4752146	611815204	ASE-G	COMP	22	0	
CY8C28645 (8CC28645AC)	LT48D	4752146	611812800	ASE-G	COMP	22	0	
CY8C28645 (8CC28645AC)	LT48D	4752146	611819299	ASE-G	COMP	22	0	
STRESS: BALL SHEAR								
CY8C28645 (8CC28645AC)	LT48D	4752146	611815204	ASE-G	COMP	100	0	
CY8C28645 (8CC28645AC)	LT48D	4752146	611812800	ASE-G	COMP	100	0	
CY8C28645 (8CC28645AC)	LT48D	4752146	611819299	ASE-G	COMP	100	0	
STRESS: BOND PULL								
CY8C28645 (8CC28645AC)	LT48D	4752146	611815204	ASE-G	COMP	100	0	
CY8C28645 (8CC28645AC)	LT48D	4752146	611812800	ASE-G	COMP	100	0	
CY8C28645 (8CC28645AC)	LT48D	4752146	611819299	ASE-G	COMP	100	0	
STRESS: CONSTRUCTIONAL ANALYSIS								
CY8C28645 (8CC28645AC)	LT48D	4752146	611815204	ASE-G	COMP	5	0	
CY8C28645 (8CC28645AC)	LT48D	4752146	611812800	ASE-G	COMP	5	0	
CY8C28645 (8CC28645AC)	LT48D	4752146	611819299	ASE-G	COMP	5	0	
STRESS: DYE PENETRANT TEST								
CY8C28645 (8CC28645AC)	LT48D	4752146	611815204	ASE-G	COMP	15	0	
CY8C28645 (8CC28645AC)	LT48D	4752146	611812800	ASE-G	COMP	15	0	
CY8C28645 (8CC28645AC)	LT48D	4752146	611819299	ASE-G	COMP	15	0	
STRESS: FINAL VISUAL INSPECTION								
CY8C28645 (8CC28645AC)	LT48D	4752146	611815204	ASE-G	COMP	499	0	
CY8C28645 (8CC28645AC)	LT48D	4752146	611812800	ASE-G	COMP	496	0	
CY8C28645 (8CC28645AC)	LT48D	4752146	611819299	ASE-G	COMP	498	0	
STRESS: HI-ACCEL SATURATION TEST, 130C, 5.6V, 85%RH, PRE COND 192 HR 30C/60%RH, MSL3								
CY8C28645 (8CC28645AC)	LT48D	4752146	611815204	ASE-G	96	30	0	
CY8C28645 (8CC28645AC)	LT48D	4752146	611812800	ASE-G	96	30	0	
CY8C28645 (8CC28645AC)	LT48D	4752146	611819299	ASE-G	96	30	0	

Reliability Test Data

QTP #: 183315

Device	Package	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
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STRESS: HIGH TEMPERATURE STORAGE

CY8C28645 (8CC28645AC)	LT48D	4752146	611815204	ASE-G	500	50	0	
CY8C28645 (8CC28645AC)	LT48D	4752146	611815204	ASE-G	1000	50	0	

STRESS: PRESSURE COOKER TEST (121C, 100%RH), 15 Psig, PRE COND 192 HR 30C/60%RH (MSL3)

CY8C28645 (8CC28645AC)	LT48D	4752146	611815204	ASE-G	96	80	0	
CY8C28645 (8CC28645AC)	LT48D	4752146	611815204	ASE-G	168	80	0	
CY8C28645 (8CC28645AC)	LT48D	4752146	611812800	ASE-G	96	80	0	
CY8C28645 (8CC28645AC)	LT48D	4752146	611812800	ASE-G	168	80	0	
CY8C28645 (8CC28645AC)	LT48D	4752146	611819299	ASE-G	96	80	0	
CY8C28645 (8CC28645AC)	LT48D	4752146	611819299	ASE-G	168	80	0	

STRESS: TC COND. C -65C TO 150C, PRECONDITION 192 HRS 30C/60%RH

CY8C28645 (8CC28645AC)	LT48D	4752146	611815204	ASE-G	500	80	0	
CY8C28645 (8CC28645AC)	LT48D	4752146	611815204	ASE-G	1000	80	0	
CY8C28645 (8CC28645AC)	LT48D	4752146	611812800	ASE-G	500	79	0	
CY8C28645 (8CC28645AC)	LT48D	4752146	611812800	ASE-G	1000	79	0	
CY8C28645 (8CC28645AC)	LT48D	4752146	611819299	ASE-G	500	80	0	
CY8C28645 (8CC28645AC)	LT48D	4752146	611819299	ASE-G	1000	80	0	

STRESS: XRAY

CY8C28645 (8CC28645AC)	LT48D	4752146	611815204	ASE-G	COMP	15	0	
CY8C28645 (8CC28645AC)	LT48D	4752146	611812800	ASE-G	COMP	15	0	
CY8C28645 (8CC28645AC)	LT48D	4752146	611819299	ASE-G	COMP	15	0	

Reliability Test Data

QTP #: 184103

<i>Device</i>	<i>Package</i>	<i>Fab Lot #</i>	<i>Assy Lot #</i>	<i>Assy Loc</i>	<i>Duration</i>	<i>Samp</i>	<i>Rej</i>	<i>Failure Mechanism</i>
STRESS: ACOUSTIC, MSL3								
CY7C65213 (7CC68401A)	LT32B	4809318	611831198	ASE-G	COMP	22	0	
CS7453AT (8CC21434A)	LT32B	4748091	611832499	ASE-G	COMP	22	0	
CY8C24423A (8CC24423C)	LT32B	5805009	611829991	ASE-G	COMP	22	0	
STRESS: BALL SHEAR								
CY7C65213 (7CC68401A)	LT32B	4809318	611831198	ASE-G	COMP	100	0	
CS7453AT (8CC21434A)	LT32B	4748091	611832499	ASE-G	COMP	100	0	
CY8C24423A (8CC24423C)	LT32B	5805009	611829991	ASE-G	COMP	100	0	
STRESS: BOND PULL								
CY7C65213 (7CC68401A)	LT32B	4809318	611831198	ASE-G	COMP	100	0	
CS7453AT (8CC21434A)	LT32B	4748091	611832499	ASE-G	COMP	100	0	
CY8C24423A (8CC24423C)	LT32B	5805009	611829991	ASE-G	COMP	100	0	
STRESS: CONSTRUCTIONAL ANALYSIS								
CY7C65213 (7CC68401A)	LT32B	4809318	611831198	ASE-G	COMP	5	0	
CS7453AT (8CC21434A)	LT32B	4748091	611832499	ASE-G	COMP	5	0	
CY8C24423A (8CC24423C)	LT32B	5805009	611829991	ASE-G	COMP	5	0	
STRESS: CROSS SECTION								
CY7C65213 (7CC68401A)	LT32B	4809318	611831198	ASE-G	COMP	5	0	
CS7453AT (8CC21434A)	LT32B	4748091	611832499	ASE-G	COMP	5	0	
CY8C24423A (8CC24423C)	LT32B	5805009	611829991	ASE-G	COMP	5	0	
STRESS: DYE PENETRANT TEST								
CY7C65213 (7CC68401A)	LT32B	4809318	611831198	ASE-G	COMP	15	0	
CS7453AT (8CC21434A)	LT32B	4748091	611832499	ASE-G	COMP	15	0	
CY8C24423A (8CC24423C)	LT32B	5805009	611829991	ASE-G	COMP	15	0	
STRESS: FINAL VISUAL INSPECTION								
CY7C65213 (7CC68401A)	LT32B	4809318	611831198	ASE-G	COMP	497	0	
CS7453AT (8CC21434A)	LT32B	4748091	611832499	ASE-G	COMP	489	0	
CY8C24423A (8CC24423C)	LT32B	5805009	611829991	ASE-G	COMP	494	0	

Document History Page

Document Title:QTP# 184103: 32-Pin QFN (5x5x1.0mm) Pure Sn Leadfinish, CuPdAu Wire MSL3, 260C Reflow, ASEK-Taiwan (G)

Document Number: 002-25951

Rev.	ECN No.	Orig. of Change	Description of Change
**	6410281	JYF	Initial Spec Release

Cypress Semiconductor Package Qualification Report

QTP# 182610 VERSION
December 2018**

**QFN-56 (8x8x1.0mm)
Pure Sn, CuPdAu Wire
MSL3, 260°C Reflow
ASEK-Taiwan (G)**

**FOR ANY QUESTIONS ON THIS REPORT, PLEASE CONTACT
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Reliability Director

PACKAGE QUALIFICATION HISTORY

QTP Number	Description of Qualification Purpose	Date
133309	Qualification of QFN-48 (7x7x1.0mm) / QFN68L (8x8x1.0mm) in ASEK assembly using 0.8mil CuPd wire, G700LA / G700SLA mold comp, EN4900F die attach epoxy with Pure Sn leadfinish. This is large die qual for 68L QFN assembled in ASEK.	Aug 2013
182610	Qualification of QFN-56 (8x8x1.0mm) in ASEK-Taiwan (G) using 0.8mil CuPdAu wire with G700LA mold compound, EN4900F die attach material and Pure Sn leadfinish at MSL3, 260°C Reflow Temperature	Dec 2018

MAJOR PACKAGE INFORMATION USED IN THIS QUALIFICATION	
Package Designation:	QFN68L
Package Outline, Type, or Name:	QFN68L (8x8x1.0mm)
Mold Compound Name/Manufacturer:	G700LA / Sumitomo G700SLA / Sumitomo
Mold Compound Flammability Rating:	V-0 / UL94
Mold Compound Alpha Emission Rate:	G700LA – n/a G700SLA - <0.001 cph/m2
Oxygen Rating Index: >28%	54% (typical)
Lead Frame Designation:	RMP (with slots)
Lead Frame Material:	Copper
Substrate Material:	n/a
Lead Finish, Composition / Thickness:	Pure Sn
Die Backside Preparation Method/Metallization:	Backgrind
Die Separation Method:	Wafer Saw
Die Attach Supplier:	HITACHI
Die Attach Material:	EN4900F
Bond Diagram Designation	001-76055
Wire Bond Method:	Thermosonic
Wire Material/Size:	CuPd / 0.8mil
Thermal Resistance Theta JA °C/W:	14.17 C/W
Package Cross Section Yes/No:	n/a
Assembly Process Flow:	49-41999
Name/Location of Assembly (prime) facility:	ASE-G
MSL LEVEL	3
REFLOW PROFILE	260C

ELECTRICAL TEST / FINISH DESCRIPTION	
Test Location:	CML (R)

Note: Please contact a Cypress Representative for other package availability.

MAJOR PACKAGE INFORMATION USED IN THIS QUALIFICATION	
Package Designation:	QFN56
Package Outline, Type, or Name:	QFN56 (8x8x1.0mm)
Mold Compound Name/Manufacturer:	G700LA / Sumitomo
Mold Compound Flammability Rating:	V-0 / UL94
Mold Compound Alpha Emission Rate:	G700LA – n/a
Oxygen Rating Index: >28%	54% (typical)
Lead Frame Designation:	RMP (with slots)
Lead Frame Material:	Copper
Substrate Material:	n/a
Lead Finish, Composition / Thickness:	Pure Sn
Die Backside Preparation Method/Metallization:	Backgrind
Die Separation Method:	Wafer Saw
Die Attach Supplier:	HITACHI
Die Attach Material:	EN4900F
Bond Diagram Designation	001-74242 / 001-69552 / 001-68162
Wire Bond Method:	Thermosonic
Wire Material/Size:	CuPdAu / 0.8mil (20um)
Thermal Resistance Theta JA °C/W:	16.6 C/W
Package Cross Section Yes/No:	n/a
Assembly Process Flow:	49-41999
Name/Location of Assembly (prime) facility:	ASE-G
MSL Level	3
Reflow Profile	260C

ELECTRICAL TEST / FINISH DESCRIPTION	
Test Location:	CML (R)

Note: Please contact a Cypress Representative for other package availability.

RELIABILITY TESTS PERFORMED PER SPECIFICATION REQUIREMENTS

Stress/Test	Test Condition (Temp/Bias)	Result P/F
Pressure Cooker Test	JESD22-A102, 121 C, 100%RH, 15 PSIG Precondition: JESD22 Moisture Sensitivity Level (192 Hrs., 30 C°, 60% RH, 260C Reflow)	P
Temperature Cycle	MIL-STD-883C, Method 1010, Condition C, -65 C to 150 C Precondition: JESD22 Moisture Sensitivity Level (192 Hrs., 30 C°, 60% RH, 260C Reflow)	P
Acoustic Microscopy	J-STD-020 Precondition: JESD22 Moisture Sensitivity Level (192 Hrs., 30 C°, 60% RH, 260C Reflow)	P
Constructional Analysis	Criteria: Meet external and internal characteristics of package	P
High Accelerated Saturation Test (HAST)	JEDEC STD 22-A110, 130 C, 85%RH, 5.5V Precondition: JESD22 Moisture Sensitivity Level (192 Hrs., 30 C°, 60% RH, 260C Reflow)	P
X-Ray	MIL-STD-883 - 2012	P
Ball Shear	JESD22-B116A, Cpk : 1.33, Ppk : 1.66	P
Internal Visual	MIL-STD-883-2014	P
High Temp Storage	JESD22-A103: 150 C, no bias	P
Dye Penetrant Test	Test to determine the existence and extent of cracks, Criteria: No Package Crack	P
Die Shear	MIL-STD-883, Method 2019	
Thermal Shock	MIL-STD-883C, Method 1011, Condition B, -55 C to 125C and JESD22-A106B	P
Bond Pull	MIL-STD-883 – Method 2011, Cpk : 1.33, Ppk : 1.66 P	P

Reliability Test Data

QTP #: 133309

Device	Package	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: ACOUSTIC, MSL3								
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314399	ASE-G	COMP	15	0	
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314401	ASE-G	COMP	15	0	
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314402	ASE-G	COMP	15	0	
STRESS: BALL SHEAR								
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314399	ASE-G	COMP	150	0	
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314401	ASE-G	COMP	150	0	
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314402	ASE-G	COMP	150	0	
STRESS: BOND PULL								
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314399	ASE-G	COMP	150	0	
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314401	ASE-G	COMP	150	0	
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314402	ASE-G	COMP	150	0	
STRESS: CONSTRUCTIONAL ANALYSIS								
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314399	ASE-G	COMP	5	0	
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314401	ASE-G	COMP	5	0	
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314402	ASE-G	COMP	5	0	
STRESS: DIE SHEAR								
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314399	ASE-G	COMP	15	0	
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314401	ASE-G	COMP	15	0	
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314402	ASE-G	COMP	15	0	
STRESS: DYE PENETRANT TEST								
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314399	ASE-G	COMP	15	0	
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314401	ASE-G	COMP	15	0	
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314402	ASE-G	COMP	15	0	
STRESS: HI-ACCEL SATURATION TEST, 130C, 5.5V, 85%RH, PRE COND 192 HR 30C/60%RH, MSL3								
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314399	ASE-G	128	80	0	
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314401	ASE-G	128	80	0	
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314402	ASE-G	128	37	0	

Reliability Test Data

QTP #: 133309

<i>Device</i>	<i>Package</i>	<i>Fab Lot #</i>	<i>Assy Lot #</i>	<i>Assy Loc</i>	<i>Duration</i>	<i>Samp</i>	<i>Rej</i>	<i>Failure Mechanism</i>
STRESS: HIGH TEMPERATURE STORAGE								
CY8CTMA4634 (8CC20411BC)	LQ56B	4225607	611318686	ASE-G	500	78	0	
CY8CTMA4634 (8CC20411BC)	LQ56B	4225607	611318688	ASE-G	500	78	0	
CY8CTMA4634 (8CC20411BC)	LQ56B	4225607	611318689	ASE-G	500	78	0	
STRESS: INTERNAL VISUAL								
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314399	ASE-G	COMP	5	0	
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314401	ASE-G	COMP	80	0	
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314402	ASE-G	COMP	37	0	
STRESS: PRESSURE COOKER TEST (121C, 100%RH), 15 Psig, PRE COND 192 HR 30C/60%RH (MSL3)								
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314399	ASE-G	168	80	0	
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314399	ASE-G	288	80	0	
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314401	ASE-G	168	80	0	
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314401	ASE-G	288	80	0	
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314402	ASE-G	168	80	0	
STRESS: TC COND. C -65C TO 150C, PRECONDITION 192 HRS 30C/60%RH								
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314399	ASE-G	500	80	0	
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314399	ASE-G	1000	80	0	
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314401	ASE-G	500	80	0	
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314401	ASE-G	1000	80	0	
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314402	ASE-G	500	80	0	
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314402	ASE-G	1000	80	0	
STRESS: XRAY								
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314399	ASE-G	COMP	15	0	
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314401	ASE-G	COMP	15	0	
CY8C5868LTI (8C560681AC)	LT68G	4304019	611314402	ASE-G	COMP	15	0	

Reliability Test Data

QTP #: 182610

<i>Device</i>	<i>Package</i>	<i>Fab Lot #</i>	<i>Assy Lot #</i>	<i>Assy Loc</i>	<i>Duration</i>	<i>Samp</i>	<i>Rej</i>	<i>Failure Mechanism</i>
STRESS: ACOUSTIC, MSL3								
CY8CLED01D01 (8CC43341BC)	LT56Y	4705810	611813012	ASE-G	COMP	22	0	
CY7C65621 (7CC65620DK)	LT56Y	4745119	611813010	ASE-G	COMP	22	0	
CY7C65640A (7CC65642EC)	LT56Y	4712660	611813011	ASE-G	COMP	22	0	
STRESS: BALL SHEAR								
CY8CLED01D01 (8CC43341BC)	LT56Y	4705810	611813012	ASE-G	COMP	100	0	
CY7C65621 (7CC65620DK)	LT56Y	4745119	611813010	ASE-G	COMP	100	0	
CY7C65640A (7CC65642EC)	LT56Y	4712660	611813011	ASE-G	COMP	100	0	
STRESS: BOND PULL								
CY8CLED01D01 (8CC43341BC)	LT56Y	4705810	611813012	ASE-G	COMP	100	0	
CY7C65621 (7CC65620DK)	LT56Y	4745119	611813010	ASE-G	COMP	100	0	
CY7C65640A (7CC65642EC)	LT56Y	4712660	611813011	ASE-G	COMP	100	0	
STRESS: CONSTRUCTIONAL ANALYSIS								
CY8CLED01D01 (8CC43341BC)	LT56Y	4705810	611813012	ASE-G	COMP	5	0	
STRESS: DYE PENETRANT TEST								
CY8CLED01D01 (8CC43341BC)	LT56Y	4705810	611813012	ASE-G	COMP	15	0	
CY7C65621 (7CC65620DK)	LT56Y	4745119	611813010	ASE-G	COMP	15	0	
CY7C65640A (7CC65642EC)	LT56Y	4712660	611813011	ASE-G	COMP	15	0	
STRESS: FINAL VISUAL INSPECTION								
CY8CLED01D01 (8CC43341BC)	LT56Y	4705810	611813012	ASE-G	COMP	468	0	
CY7C65621 (7CC65620DK)	LT56Y	4745119	611813010	ASE-G	COMP	495	0	
CY7C65640A (7CC65642EC)	LT56Y	4712660	611813011	ASE-G	COMP	491	0	
STRESS: HIGH TEMPERATURE STORAGE								
CY8CLED01D01 (8CC43341BC)	LT56Y	4705810	611813012	ASE-G	500	50	0	
STRESS: HIGH TEMP DYNAMIC OPERATING LIFE-LATENT FAILURE RATE (150C, 3.8V, Vcc Max)								
CY7C65621 (7CC65620DK)	LT56Y	4745119	611813010	ASE-G	500	80	0	

Reliability Test Data

QTP #: 182610

Device	Package	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: HI-ACCEL SATURATION TEST, 130C, 5.6V, 85%RH, PRE COND 192 HR 30C/60%RH, MSL3								
CY7C65621 (7CC65620DK)	LT56Y	4745119	611813010	ASE-G	96	30	0	
CY7C65640A (7CC65642EC)	LT56Y	4712660	611813011	ASE-G	96	30	0	
CY8C28645 (8CC28645AC)	LT48D	4752146	611815204	ASE-G	96	30	0	
STRESS: PRESSURE COOKER TEST (121C, 100%RH), 15 Psig, PRE COND 192 HR 30C/60%RH (MSL3)								
CY8CLED01D01 (8CC43341BC)	LT56Y	4705810	611813012	ASE-G	168	80	0	
CY7C65621 (7CC65620DK)	LT56Y	4745119	611813010	ASE-G	168	80	0	
CY7C65640A (7CC65642EC)	LT56Y	4712660	611813011	ASE-G	168	80	0	
STRESS: TC COND. C -65C TO 150C, PRECONDITION 192 HRS 30C/60%RH								
CY8CLED01D01 (8CC43341BC)	LT56Y	4705810	611813012	ASE-G	500	80	0	
CY7C65621 (7CC65620DK)	LT56Y	4745119	611813010	ASE-G	500	80	0	
CY7C65621 (7CC65620DK)	LT56Y	4745119	611813010	ASE-G	1000	80	0	
CY7C65640A (7CC65642EC)	LT56Y	4712660	611813011	ASE-G	500	80	0	
CY7C65640A (7CC65642EC)	LT56Y	4712660	611813011	ASE-G	1000	80	0	
STRESS: XRAY								
CY8CLED01D01 (8CC43341BC)	LT56Y	4705810	611813012	ASE-G	COMP	15	0	
CY7C65621 (7CC65620DK)	LT56Y	4745119	611813010	ASE-G	COMP	15	0	
CY7C65640A (7CC65642EC)	LT56Y	4712660	611813011	ASE-G	COMP	15	0	



Document History Page

Document Title:QTP#182610: QFN-56 (8x8x1.0mm) PURE SN, CUPDAU WIRE MSL3, 260C REFLOW ASEK-TAIWAN (G)

Document Number: 002-25941

Rev.	ECN No.	Orig. of Change	Description of Change
**	6409970	HSTO	Initial Spec Release

Item	Marketing Part Number	Sample Ordering Part Number	Package	Remarks
1	CY22391LTXC-06	CY22391LTXC-06KGG, subject to lead time	32L QFN	Added to PCN190302A
2	CY22391LTXC-06T	CY22391LTXC-06KGG, subject to lead time	32L QFN	Added to PCN190302A
3	CY22391LTXC-07	CY22391LTXC-07KGG, subject to lead time	32L QFN	Added to PCN190302A
4	CY22391LTXC-07T	CY22391LTXC-07KGG, subject to lead time	32L QFN	Added to PCN190302A
5	CY7C63833-LTXC	CY7C63833-LTXCKGG, subject to lead time	32L QFN	Added to PCN190302A
6	CY7C63833-LTXCT	CY7C63833-LTXCKGG, subject to lead time	32L QFN	Added to PCN190302A
7	CY7C65213-32LTXI	CY7C65213-32LTXIKG	32L QFN	
8	CY7C65213-32LTXIT	CY7C65213-32LTXIKG	32L QFN	Added to PCN190302A
9	CY7C65213A-32LTXI	CY7C65213A-32LTXIKGG, subject to lead time	32L QFN	Added to PCN190302A
10	CY7C65213A-32LTXIT	CY7C65213A-32LTXIKGG, subject to lead time	32L QFN	Added to PCN190302A
11	CY7C65215-32LTXI	CY7C65215-32LTXIKGG, subject to lead time	32L QFN	Added to PCN190302A
12	CY7C65215-32LTXIT	CY7C65215-32LTXIKGG, subject to lead time	32L QFN	Added to PCN190302A
13	CY7C65215A-32LTXI	CY7C65215A-32LTXIKGG, subject to lead time	32L QFN	Added to PCN190302A
14	CY7C65215A-32LTXIT	CY7C65215A-32LTXIKGG, subject to lead time	32L QFN	Added to PCN190302A
15	CY7C65620-56LTXC	CY7C65620-56LTXCKGG	56L QFN	
16	CY7C65620-56LTXCT	CY7C65620-56LTXCKGG	56L QFN	Added to PCN190302A
17	CY7C65620-56LTXI	CY7C65620-56LTXIKGG, subject to lead time	56L QFN	Added to PCN190302A
18	CY7C65620-56LTXIT	CY7C65620-56LTXIKGG, subject to lead time	56L QFN	Added to PCN190302A
19	CY7C65621-56LTXC	CY7C65621-56LTXCKGG, subject to lead time	56L QFN	Added to PCN190302A
20	CY7C65621-56LTXCT	CY7C65621-56LTXCKGG, subject to lead time	56L QFN	Added to PCN190302A
21	CY7C65621-56LTXI	CY7C65621-56LTXIKG	56L QFN	
22	CY7C65621-56LTXIT	CY7C65621-56LTXIKG	56L QFN	Added to PCN190302A
23	CY7C65630-56LTXC	CY7C65630-56LTXCKGG	56L QFN	
24	CY7C65630-56LTXCT	CY7C65630-56LTXCKGG	56L QFN	Added to PCN190302A
25	CY7C65630-56LTXI	CY7C65630-56LTXIKGG, subject to lead time	56L QFN	Added to PCN190302A
26	CY7C65630-56LTXIT	CY7C65630-56LTXIKGG, subject to lead time	56L QFN	Added to PCN190302A
27	CY7C65631-56LTXC	CY7C65631-56LTXCKGG	56L QFN	
28	CY7C65631-56LTXCT	CY7C65631-56LTXCKGG	56L QFN	Added to PCN190302A
29	CY7C65631-56LTXI	CY7C65631-56LTXIKG	56L QFN	
30	CY7C65631-56LTXIT	CY7C65631-56LTXIKG	56L QFN	Added to PCN190302A
31	CY7C68001-56LTXC	CY7C68001-56LTXCKGG, subject to lead time	56L QFN	Added to PCN190302A
32	CY8C21434-24LTXI	CY8C21434-24LTXIKGG	32L QFN	
33	CY8C21434-24LTXIT	CY8C21434-24LTXIKGG	32L QFN	Added to PCN190302A
34	CY8C21434B-24LTXI	CY8C21434B-24LTXIKGG, subject to lead time	32L QFN	Added to PCN190302A
35	CY8C24423A-24LTXI	CY8C24423A-24LTXIKGG	32L QFN	
36	CY8C24423A-24LTXIT	CY8C24423A-24LTXIKGG	32L QFN	Added to PCN190302A
37	CY8C28643-24LTXI	CY8C28643-24LTXIKGG,subject to lead time	48L QFN	Added to PCN190302A
38	CY8C28643-24LTXIT	CY8C28643-24LTXIKGG,subject to lead time	48L QFN	Added to PCN190302A
39	CY8C28645-24LTXI	CY8C28645-24LTXIKG	48L QFN	
40	CY8C28645-24LTXIT	CY8C28645-24LTXIKG	48L QFN	Added to PCN190302A
41	CY8CLED01D01-56LTXI	CY8CLED01D01-56LTIKGG, subject to lead time	56L QFN	Added to PCN190302A
42	CY8CLED01D01-56LTXQ	CY8CLED01D01-56LTQKGG, subject to lead time	56L QFN	Added to PCN190302A
43	CY8CLED02D01-56LTXI	CY8CLED02D01-56LTIKGG, subject to lead time	56L QFN	Added to PCN190302A
44	CY8CLED03D01-56LTXI	CY8CLED03D01-56LTIKGG, subject to lead time	56L QFN	Added to PCN190302A
45	CY8CLED03D02-56LTXI	CY8CLED03D02-56LTIKGG, subject to lead time	56L QFN	Added to PCN190302A
46	CY8CLED03G01-56LTXI	CY8CLED03G01-56LTIKGG, subject to lead time	56L QFN	Added to PCN190302A
47	CY8CLED04D01-56LTXI	CY8CLED04D01-56LTIKGG, subject to lead time	56L QFN	Added to PCN190302A
48	CY8CLED04D02-56LTXI	CY8CLED04D02-56LTIKGG, subject to lead time	56L QFN	Added to PCN190302A
49	CY8CLED04DOCD1-56LTXI	CY8CLED04DOCD1-56LKGG, subject to lead time	56L QFN	Added to PCN190302A
50	CY8CLED04G01-56LTXI	CY8CLED04G01-56LTIKGG, subject to lead time	56L QFN	Added to PCN190302A
51	CG7297AM	CG7297XM	32L QFN	
52	CG7297AMT	CG7297XM	32L QFN	Added to PCN190302A
53	CG7392AM	CG7392XM, subject to lead time	32L QFN	Added to PCN190302A
54	CG7392AMT	CG7392XM, subject to lead time	32L QFN	Added to PCN190302A

55	CG7558AA	CG7558XA	32L QFN	
56	CG7558AAT	CG7558XA	32L QFN	Added to PCN190302A
57	CG7680AA	CG7680XA, subject to lead time	56L QFN	Added to PCN190302A
58	CG7680AAT	CG7680XA, subject to lead time	56L QFN	Added to PCN190302A
59	CG7786AA	CG7786AXT	56L QFN	Added to PCN190302A
60	CG7786AAT	CG7786AXT	56L QFN	
61	CG7788AA	CG7788XA, subject to lead time	32L QFN	Added to PCN190302A
62	CG7788AAT	CG7788XA, subject to lead time	32L QFN	Added to PCN190302A
63	CP6759DM	CP6759XM, subject to lead time	32L QFN	Added to PCN190302A
64	CP6759DMT	CP6759XM, subject to lead time	32L QFN	Added to PCN190302A
65	CP8151AT	CP8151XT, subject to lead time	32L QFN	Added to PCN190302A
66	CP8151ATT	CP8151XT, subject to lead time	32L QFN	Added to PCN190302A
67	CP8688AT	CP8688XT, subject to lead time	32L QFN	Added to PCN190302A
68	CP8688ATT	CP8688XT, subject to lead time	32L QFN	Added to PCN190302A
69	CP8688BT	CP8688YT, subject to lead time	32L QFN	Added to PCN190302A
70	CP8688BTT	CP8688YT, subject to lead time	32L QFN	Added to PCN190302A
71	CS7453ATT	CS7453XT, subject to lead time	32L QFN	Added to PCN190302A
	CS7224AA	CS7224XA	32L QFN	Removed per PTN185104
	CS7224AAT	CS7224XA	32L QFN	Removed per PTN185104
	CY7C65640A-LTXC	CY7C65640A-LTXCKGG	56L QFN	Removed per PTN185104
	CY7C65640A-LTXCT	CY7C65640A-LTXCKGG	56L QFN	Removed per PTN185104