Cypress Semiconductor Corporation, 198 Champion Court, San Jose, CA 95134. Tel: (408) 943-2600

PRODUCT CHANGE NOTIFICATION

PCN: PCN182503 **Date:** June 20, 2018

Subject: Qualification of Fab 25 as an Additional Wafer Fab Site and Test 25 as an Additional Wafer Sort Site for PSoC® 5 LP Product Family

To: FUTURE ELECTRONICS
FUTURE ELE
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Change Type: Major

Description of Change:
Cypress announces the qualification of Fab 25 in Austin, Texas as an additional wafer fab site and Test 25 as an additional wafer sort site for PSoC® 5 LP product family.

Benefit of Change:
Qualification of alternate manufacturing sites is part of the ongoing flexible manufacturing initiative announced by Cypress. The goal of the flexible manufacturing initiative is to provide the means for Cypress to continue to meet delivery commitments through dynamic, changing market conditions.

Part Numbers Affected: 60
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 products have been qualified through a series of tests documented in the Qualification Test Plans summarized in the table below. The 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
162806	Fab 25 PSoC® 5 LP Device
171610	Test 25 Additional Sort Site

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 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 the affected part numbers in the attached file will be supplied from any of the qualified manufacturing sites.

Anticipated Impact:
Products manufactured at Fab 25 and sorted at Test 25 are completely compatible with existing products from a form, fit, functional, parametric and quality performance perspective.

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
Product Qualification Report

QTP#162806 VERSION**
June 2018

PSoC5 LP Device Family S8PM-10P Technology, Fab25	
CY8C5265 /CY8C5266 CY8C5267 / CY8C5268 CY8C5288/7	PsoC® 5LP CY8C52LP Family Programmable System-on-Chip (PsoC®)
CY8C5465 / CY8C5466 CY8C5467 / CY8C5468 CY8C5488	PsoC® 5LP CY8C54LP Family Programmable System-on-Chip (PsoC®)
CY8C5666 / CY8C5667 CY8C5668 / CY8C5688 CY8C5686 / CY8C5687	PsoC® 5LP CY8C56LP Family Programmable System-on-Chip (PsoC®)
CY8C5866 / CY8C5867 CY8C5868	PsoC® 5LP CY8C58LP Family Programmable System-on-Chip (PsoC®)
CY8C5886 / CY8C5887 CY8C5888	PsoC® 5LP CY8C58LP Family Programmable System-on-Chip (PsoC®)

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

QTP Number	Description of Qualification Purpose	Date
151008	Qualification of S8* Technology in Fab25 Using TSG6M Device	Dec 2015
151403	Qualification of PSoC® 4100 and PSoC® 4200 Device, S8PF-10R Technology in Fab25	Dec 2015
151303	Qualification of CapSense® MBR3 Device, S8PF-10R Technology in Fab25	Dec 2015
160401	Qualification of TrueTouch® Fingerprint Device, S8PFHD-10R Technology in Fab25	May 2016
160301	Qualification of TrueTouch® Gen6XL Touchscreen Controller Device, S8SPF-10P Technology in Fab25	Jun 2016
160803	Qualification of PSoC® 4000S Device, S8PFHD-10R Technology in Fab25	Jun 2016
160207	Qualification of PSoC3 Leopard T06, S8P12-10P Technology in Fab25	Jul 2016
160702	Qualification of PSoC® 4200L, S8SPF-10P Technology in Fab25 (AL BEOL Interconnect)	Sep 2016
160701	Qualification of PSoC® 4200L, S8SPF-10P Technology in Fab25 (Cu BEOL Interconnect)	Apr 2017
172307	Qualification of PSoC® 4200L Fix TO Metal Mask Non-Minor Add-On, S8SPF-10P Technology in Fab25. (Cu BEOL Interconnect)	Nov 2017
173204	Qualification of PSoC® 4100S Plus Device, S8SPFHD-10 in Fab25 (Cu BEOL Interconnect)	Dec 2017
162806	Qualification of PSoC5 LP Device Family, S8PM-10P Technology in Fab25	Jun 2018

PRODUCT DESCRIPTION (for qualification)	
Qualification Purpose: Qualification of PSoC5 LP Device Family, S8PM-10P Technology in Fab25	
Marketing Part :	CY8C526x, CY8C546x, CY8C566x, CY8C586x, CY8C5488, CY8C5288 7
Device Description:	1.71V to 5.5V, Industrial Programmable System on a Chip
Cypress Division:	Cypress Semiconductor Corporation – MCU and Connectivity Division (MCD)

TECHNOLOGY/FAB PROCESS DESCRIPTION			
Number of Metal Layers:	Proprietary	Metal Composition:	Proprietary
Passivation Type and Thickness:			Proprietary
Generic Process Technology Design Rule (μ-drawn):			Proprietary
Gate Oxide Material Thickness (MOS):			Proprietary
Name Location of Die Fab (prime) Facility:			Cypress, Fab 25
Die Fab Line ID Wafer Process ID:			Fab25 S8PM-10P

PACKAGE AVAILABILITY

PACKAGE	ASSEMBLY SITE	QTP NUMBER
100-Lead TQFP (14x14x1.4mm)	**CML-Philippines (R)**	**112302**
100-Lead TQFP (14x14x1.4mm)	**JCET-China (JT)**	**111817**

MAJOR PACKAGE INFORMATION USED IN THIS QUALIFICATION	
Package Designation:	AZ100
Package Outline, Type, or Name:	100L TQFP 14x14mm Thin Quad Flatpack package
Mold Compound Name/Manufacturer:	KE-G6000 Kyocera
Mold Compound Flammability Rating:	V-O per UL94
Oxygen Rating Index:	None
Lead Frame Material:	Copper
Lead Finish, Composition	NiPdAu
Die Backside Preparation Method/Metallization:	Backgrind
Die Separation Method:	Sawing
Die Attach Supplier:	Dexter
Die Attach Material:	QMI509
Die Attach Method:	Die Attach Epoxy
Bond Diagram Designation:	001-75839, 001-75838
Wire Bond Method:	Thermosonic
Wire Material/Size:	Au. 0.8 mil
Thermal Resistance Theta JA °C/W:	44.66 C W
Package Cross Section Yes/No:	N A
Assembly Process Flow:	001-73775
Name/Location of Assembly (prime) facility:	CML-RA
MSL Level	3
Reflow Profile	260C

ELECTRICAL TEST / FINISH DESCRIPTION	
Test Location:	ASEK-Taiwan (G), CML-Philippines (RA)

RELIABILITY TESTS PERFORMED PER SPECIFICATION REQUIREMENTS

Stress/Test	Test Condition (Temp/Bias)	Result P/F
High Temperature Operating Life Early Failure Rate (EFR)	Dynamic Operating Condition, 150 C, 2.07V, 48 Hours JESD22-A-108-B	P
High Temperature Operating Life Latent Failure Rate (LFR)	Dynamic Operating Condition, 150 C, 2.07V, 500 Hours JESD22-A-108-B	P
Low Temperature Operating Life	-40 C	P
Endurance	Per datasheet, JESD22-A117	P
Data Retention	JESD22-A117 and JESD22-A103, 150C, 1000 Hours	P
Temperature Cycle	-65^{0}C to 150^{0}C, JESD22-A-104, 500 Cycles 1000Cycles Precondition: JESD22 Moisture Sensitivity Level 3 192 Hrs, 30C 60 RH 3IR-Reflow, 260 C 0, -5 C	P
High Accelerated Saturation Test (HAST)	130C, 5.5V, 85 RH, JESD22-A-110-B, 96 Hours Precondition: JESD22 Moisture Sensitivity Level 3 192 Hrs, 30C 60 RH 3IR-Reflow, 260 C 0, -5 C	P
Pressure Cooker	121C 100 RH, JESD22-A102-C, 168 Hours Precondition: JESD22 Moisture Sensitivity Level 3 192 Hrs, 30C 60 RH 3IR-Reflow, 260 C 0, -5 C	P
Electrostatic Discharge Human Body Model (ESD-HBM)	2200V, 3300V, JESD22-A114E	P
Electrostatic Discharge Charge Device Model (ESD-CDM)	500V JESD22-C101C	P
Static Latch-up	140mA, 125C 85 C, JESD78	P
Acoustic (M3)	J-STD-020	P

RELIABILITY FAILURE RATE SUMMARY

Stress/Test	Device Tested/ Device Hours	# Fails	Activation Energy	Thermal AF[3]	Failure Rate
High Temperature Operating Life Early Failure Rate	1,545 Devices	0	N A	N A	0 PPM 1
High Temperature Operating Life Long Term Failure Rate	570,000	0	0.7	170	9 FIT 2

1. EFR devices number is based on QTP 162806 EFR data.
2. LFR device hours are based on QTP 151008, QTP 151403, QTP 151303, QTP 160301, QTP 160207, QTP 160702, QTP 160701, QTP 172307 and QTP 162806 LFR data.

[1] Assuming an ambient temperature of 55°C and a junction temperature rise of 15°C.
[2] Chi-squared 60 estimations used to calculate the failure rate.
[3] Thermal Acceleration Factor is calculated from the Arrhenius equation

$$AF = \exp\left[\frac{E_A}{k}\left[\frac{1}{T_2} - \frac{1}{T_1}\right]\right]$$

where:

E_A The Activation Energy of the defect mechanism.
K Boltzmann's constant = 8.62×10^{-5} eV Kelvin.
T_1 is the junction temperature of the device under stress and T_2 is the junction temperature of the device at use conditions.

Reliability Test Data

QTP #: 151008

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: ACOUSTIC, MSL3							
CYTT214032 (8CP206101)	4539372	611534008	CML-RA	COMP	15	0	
CYTT214032 (8CP206101)	4540145	611534709	CML-RA	COMP	15	0	
CY8C42452 (8CP44200)	4537464	611531543	CML-RA	COMP	15	0	
STRESS: DATA RETENTION, PLASTIC, 150C							
CYTT214032 (8CP206101)	4539372	611534008	CML-RA	500	80	0	
CYTT214032 (8CP206101)	4539372	611534008	CML-RA	1000	80	0	
CYTT214032 (8CP206101)	4540145	611534709	CML-RA	500	80	0	
CYTT214032 (8CP206101)	4540145	611534709	CML-RA	1000	80	0	
CY8C42452 (8CP44200)	4537464	611531543	CML-RA	500	80	0	
STRESS: DATA RETENTION, PLASTIC, 175C							
CYTT214032 (8CP206101)	4539372	611534008	CML-RA	76	80	0	
CYTT214032 (8CP206101)	4539372	611534008	CML-RA	152	79	0	
CYTT214032 (8CP206101)	4540145	611534709	CML-RA	76	80	0	
CYTT214032 (8CP206101)	4540145	611534709	CML-RA	152	80	0	
CY8C42452 (8CP44200)	4537464	611531543	CML-RA	76	80	0	
CY8C42452 (8CP44200)	4537464	611531543	CML-RA	152	80	0	
STRESS: HIGH TEMP DYNAMIC OPERATING LIFE-EARLY FAILURE RATE (150, 2.07V, Vcc Max)							
CYTT214032 (8CP206101)	4539372	611534008	CML-RA	48	1490	0	
CYTT214032 (8CP206101)	4540145	611534709	CML-RA	48	1510	0	
CYTT214032 (8CP206101)	4545249	611537364	CML-RA	48	1547	0	
STRESS: ENDURANCE							
CYTT214032 (8CP206101)	4539372	611534008	CML-RA	168	78	0	
CYTT214032 (8CP206101)	4539372	611534008	CML-RA	500	78	0	
CYTT214032 (8CP206101)	4540145	611534709	CML-RA	168	80	0	
CYTT214032 (8CP206101)	4540145	611534709	CML-RA	500	80	0	
CY8C42452 (8CP44200)	4537464	611531543	CML-RA	168	80	0	
CY8C42452 (8CP44200)	4537464	611531543	CML-RA	500	80	0	
STRESS: ESD-CHARGE DEVICE MODEL							
CYTT214032 (8CP206101)	4539372	611534008	CML-RA	500	9	0	
CYTT214032 (8CP206101)	4539372	611534008	CML-RA	750	3	0	
CYTT214032 (8CP206101)	4539372	611534008	CML-RA	1000	3	0	
CYTT214032 (8CP206101)	4539372	611534008	CML-RA	1250	3	0	
CYTT214032 (8CP206101)	4539372	611534008	CML-RA	1500	3	0	
CYTT214032 (8CP206101)	4539372	611534008	CML-RA	1750	3	0	

Reliability Test Data

QTP #: 151008

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: ESD-CHARGE DEVICE MODEL							
CYTT214032 (8CP206101)	4540145	611534709	CML-RA	500	9	0	
CYTT214032 (8CP206101)	4540145	611534709	CML-RA	750	3	0	
CYTT214032 (8CP206101)	4540145	611534709	CML-RA	1000	3	0	
CYTT214032 (8CP206101)	4540145	611534709	CML-RA	1250	3	0	
CYTT214032 (8CP206101)	4540145	611534709	CML-RA	1500	3	0	
CYTT214032 (8CP206101)	4540145	611534709	CML-RA	1750	3	0	
CY8C42452 (8CP44200)	4537464	611531543	CML-RA	500	9	0	
CY8C42452 (8CP44200)	4537464	611531543	CML-RA	750	3	0	
CY8C42452 (8CP44200)	4537464	611531543	CML-RA	1000	3	0	
CY8C42452 (8CP44200)	4537464	611531543	CML-RA	1250	3	0	
CY8C42452 (8CP44200)	4537464	611531543	CML-RA	1500	3	0	
CY8C42452 (8CP44200)	4537464	611531543	CML-RA	1750	3	0	
STRESS: ESD-HUMAN BODY MODEL PER JESD22, METHOD A114							
CYTT214032 (8CP206101)	4539372	611534008	CML-RA	1100	3	0	
CYTT214032 (8CP206101)	4539372	611534008	CML-RA	2200	8	0	
CYTT214032 (8CP206101)	4539372	611534008	CML-RA	3300	3	0	
CYTT214032 (8CP206101)	4539372	611534008	CML-RA	4000	3	0	
CYTT214032 (8CP206101)	4539372	611534008	CML-RA	5000	3	0	
CYTT214032 (8CP206101)	4540145	611534709	CML-RA	1100	3	0	
CYTT214032 (8CP206101)	4540145	611534709	CML-RA	2200	8	0	
CYTT214032 (8CP206101)	4540145	611534709	CML-RA	3300	3	0	
CYTT214032 (8CP206101)	4540145	611534709	CML-RA	4000	3	0	
CY8C42452 (8CP44200)	4537464	611531543	CML-RA	1100	3	0	
CY8C42452 (8CP44200)	4537464	611531543	CML-RA	2200	8	0	
CY8C42452 (8CP44200)	4537464	611531543	CML-RA	3300	3	0	
CY8C42452 (8CP44200)	4537464	611531543	CML-RA	4000	3	0	
STRESS: HI-ACCEL SATURATION TEST (130C, 85%RH, 5.5V), PRE COND 192 HR 30C/60%RH (MSL3)							
CYTT214032 (8CP206101)	4539372	611534008	CML-RA	96	30	0	
CYTT214032 (8CP206101)	4540145	611534709	CML-RA	96	30	0	
STRESS: HIGH TEMP DYNAMIC OPERATING LIFE-LATENT FAILURE RATE (150C, 2.07V, Vcc Max)							
CYTT214032 (8CP206101)	4539372	611534008	CML-RA	80	116	0	
CYTT214032 (8CP206101)	4539372	611534008	CML-RA	500	116	0	
CYTT214032 (8CP206101)	4540145	611534709	CML-RA	80	120	0	
CYTT214032 (8CP206101)	4540145	611534709	CML-RA	500	120	0	

Reliability Test Data

QTP #: 151008

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: LOW TEMPERATURE OPERATING LIFE, -40C							
CYTT214032 (8CP206101)	4539372	611534008	CML-RA	160	40	0	
CYTT214032 (8CP206101)	4539372	611534008	CML-RA	380	40	0	
STRESS: PRESSURE COOKER TEST (121C, 100%RH), 15 Psig, PRE COND 192 HR 30C/60%RH (MSL3)							
CYTT214032 (8CP206101)	4539372	611534008	CML-RA	168	75	0	
CYTT214032 (8CP206101)	4540145	611534709	CML-RA	168	78	0	
CY8C42452 (8CP44200)	4537464	611531543	CML-RA	168	80	0	
CY8C42452 (8CP44200)	4537464	611531543	CML-RA	288	80	0	
STRESS: PRE/POST LFR PARAMETER ASSESSMENT							
CYTT214032 (8CP206101)	4539372	611534008	CML-RA	COMP	10 2	0	
CYTT214032 (8CP206101)	4540145	611534709	CML-RA	COMP	10 2	0	
CY8C42452 (8CP44200)	4537464	611531543	CML-RA	COMP	10 2	0	
STRESS: STATIC LATCH-UP (85C, 140mA)							
CYTT214032 (8CP206101)	4539372	611534008	CML-RA	COMP	6	0	
CYTT214032 (8CP206101)	4540145	611534709	CML-RA	COMP	6	0	
CY8C42452 (8CP44200)	4537464	611531543	CML-RA	COMP	6	0	
STRESS: STATIC LATCH-UP (85C, 200mA)							
CYTT214032 (8CP206101)	4539372	611534008	CML-RA	COMP	3	0	
CYTT214032 (8CP206101)	4540145	611534709	CML-RA	COMP	3	0	
CY8C42452 (8CP44200)	4537464	611531543	CML-RA	COMP	3	0	
STRESS: STATIC LATCH-UP (85C, 300mA)							
CYTT214032 (8CP206101)	4539372	611534008	CML-RA	COMP	3	0	
CYTT214032 (8CP206101)	4540145	611534709	CML-RA	COMP	3	0	
CY8C42452 (8CP44200)	4537464	611531543	CML-RA	COMP	3	0	
STRESS: SEM CROSS SECTION							
CYTT214032 (8CP206101)	4539372	611534008	CML-RA	COMP	1	0	
STRESS: TC COND. C -65C TO 150C, PRE COND 192 HRS 30C/60%RH (MSL3)							
CYTT214032 (8CP206101)	4539372	611534008	CML-RA	500	80	0	
CYTT214032 (8CP206101)	4539372	611534008	CML-RA	1000	80	0	
CYTT214032 (8CP206101)	4540145	611534709	CML-RA	500	80	0	
CY8C42452 (8CP44200)	4537464	611531543	CML-RA	500	79	0	
CY8C42452 (8CP44200)	4537464	611531543	CML-RA	1000	79	0	
STRESS: THERMAL JUNCTION MEASUREMENT							
CYTT214032 (8CP206101)	4539372	611534008	CML-RA	COMP	1	0	

Reliability Test Data

QTP #: 151403

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: ACOUSTIC, MSL3							
CY8C42452A(8CP44200DB)	4537464	611531543	CML-R	COMP	15	0	
STRESS: DATA RETENTION, PLASTIC, 150C							
CY8C42452A(8CP44200DB)	4537464	611531543	CML-R	500	80	0	
STRESS: DATA RETENTION, PLASTIC, 175C							
CY8C42452A(8CP44200DB)	4537464	611531543	CML-R	76	80	0	
CY8C42452A(8CP44200DB)	4537464	611531543	CML-R	152	80	0	
STRESS: HIGH TEMP DYNAMIC OPERATING LIFE-EARLY FAILURE RATE (150C, 2.07V, Vcc Max)							
CY8C42452A(8CP44200DB)	4537464	611531543	CML-R	48	1510	0	
STRESS: ENDURANCE							
CY8C42452A(8CP44200DB)	4537464	611531543	CML-R	168	80	0	
CY8C42452A(8CP44200DB)	4537464	611531543	CML-R	500	80	0	
STRESS: ESD-CHARGE DEVICE MODEL							
CY8C42452A(8CP44200DB)	4537464	611531543	CML-R	500	9	0	
CY8C42452A(8CP44200DB)	4537464	611531543	CML-R	750	3	0	
CY8C42452A(8CP44200DB)	4537464	611531543	CML-R	1000	3	0	
CY8C42452A(8CP44200DB)	4537464	611531543	CML-R	1250	3	0	
CY8C42452A(8CP44200DB)	4537464	611531543	CML-R	1500	3	0	
CY8C42452A(8CP44200DB)	4537464	611531543	CML-R	1750	3	0	
CY8C42452A(8CP44200DB)	4537464	611531543	CML-R	2000	3	0	
STRESS: ESD-HUMAN BODY MODEL PER JESD22, METHOD A114							
CY8C42452A(8CP44200DB)	4537464	611531543	CML-R	1100	3	0	
CY8C42452A(8CP44200DB)	4537464	611531543	CML-R	2200	8	0	
CY8C42452A(8CP44200DB)	4537464	611531543	CML-R	3300	3	0	
CY8C42452A(8CP44200DB)	4537464	611531543	CML-R	4000	3	0	
STRESS: HIGH TEMP DYNAMIC OPERATING LIFE-LATENT FAILURE RATE (150C, 2.07V, Vcc Max)							
CY8C42452A(8CP44200DB)	4537464	611531543	CML-R	80	120	0	
CY8C42452A(8CP44200DB)	4537464	611531543	CML-R	500	120	0	
STRESS: PRESSURE COOKER TEST (121C, 100%RH), 15 Psig, PRE COND 192 HR 30C/60%RH (MSL3)							
CY8C42452A(8CP44200DB)	4537464	611531543	CML-R	168	80	0	
CY8C42452A(8CP44200DB)	4537464	611531543	CML-R	288	80	0	
STRESS: PRE/POST LFR PARAMETER ASSESSMENT							
CY8C42452A(8CP44200DB)	4537464	611531543	CML-R	COMP	10 2	0	
STRESS: STATIC LATCH-UP (85C, 140mA)							
CY8C42452A(8CP44200DB)	4537464	611531543	CML-R	COMP	6	0	
STRESS: STATIC LATCH-UP (85C, 200mA)							
CY8C42452A(8CP44200DB)	4537464	611531543	CML-R	COMP	3	0	
STRESS: STATIC LATCH-UP (125C, 140mA)							
CY8C42452A(8CP44200DB)	4537464	611531543	CML-R	COMP	3	0	

Reliability Test Data

QTP #: 151403

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: STATIC LATCH-UP (85C, 300mA)							
CY8C42452A(8CP44200DB)	4537464	611531543	CML-R	COMP	3	0	
STRESS: TC COND. C -65C TO 150C, PRE COND 192 HRS 30C/60%RH (MSL3)							
CY8C42452A(8CP44200DB)	4537464	611531543	CML-R	500	79	0	
CY8C42452A(8CP44200DB)	4537464	611531543	CML-R	1000	79	0	
STRESS: HIGH TEMP DYNAMIC OPERATING LIFE-EARLY FAILURE RATE (150C, 2.07V, Vcc Max)							
CY8C42452A(8CP44200DB)	4537464	611531543	CML-R	48	1469	0	

Reliability Test Data

QTP #: 151303

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: ACOUSTIC, MSL3							
CY8CMBR3106S2(8CP44304)	4542914	611534639	CML-RA	COMP	15	0	
STRESS: DATA RETENTION, PLASTIC, 150C							
CY8CMBR3106S2(8CP44304)	4542914	611534639	CML-RA	500	80	0	
STRESS: DATA RETENTION, PLASTIC, 175C							
CY8CMBR3106S2(8CP44304)	4542914	611534639	CML-RA	76	80	0	
CY8CMBR3106S2(8CP44304)	4542914	611534639	CML-RA	152	80	0	
STRESS: HIGH TEMP DYNAMIC OPERATING LIFE-EARLY FAILURE RATE (150C, 2.07V, Vcc Max)							
CY8CMBR31552 (8CP44303CB)	4542914	611534693	ASE-G	48	1469	0	
STRESS: ENDURANCE							
CY8CMBR31552 (8CP44303CB)	4542914	611534693	ASE-G	168	80	0	
CY8CMBR31552 (8CP44303CB)	4542914	611534693	ASE-G	500	80	0	
STRESS: ESD-CHARGE DEVICE MODEL							
CY8CMBR3106S2(8CP44304)	4542914	611534639	CML-RA	500	9	0	
CY8CMBR3106S2(8CP44304)	4542914	611534639	CML-RA	750	3	0	
CY8CMBR3106S2(8CP44304)	4542914	611534639	CML-RA	1000	3	0	
CY8CMBR3106S2(8CP44304)	4542914	611534639	CML-RA	1250	3	0	
CY8CMBR3106S2(8CP44304)	4542914	611534639	CML-RA	1500	3	0	
CY8CMBR3106S2(8CP44304)	4542914	611534639	CML-RA	1750	3	0	
STRESS: ESD-HUMAN BODY MODEL PER JESD22, METHOD A114							
CY8CMBR3106S2(8CP44304)	4542914	611534639	CML-RA	1100	3	0	
CY8CMBR3106S2(8CP44304)	4542914	611534639	CML-RA	2200	8	0	
CY8CMBR3106S2(8CP44304)	4542914	611534639	CML-RA	3300	3	0	
CY8CMBR3106S2(8CP44304)	4542914	611534639	CML-RA	4000	3	0	
CY8CMBR3106S2(8CP44304)	4542914	611534639	CML-RA	5000	3	0	
CY8CMBR3106S2(8CP44304)	4542914	611534639	CML-RA	6000	3	0	
CY8CMBR3106S2(8CP44304)	4542914	611534639	CML-RA	7000	3	0	
STRESS: HIGH TEMP DYNAMIC OPERATING LIFE-LATENT FAILURE RATE (150C, 2.07V, Vcc Max)							
CY8CMBR31552(8CP44303CB)	4542914	611534693	ASE-G	80	120	0	
CY8CMBR31552(8CP44303CB)	4542914	611534693	ASE-G	500	120	0	
STRESS: PRESSURE COOKER TEST (121C, 100%RH), 15 Psig, PRE COND 192 HR 30C/60%RH (MSL3)							
CY8CMBR3106S2(8CP44304)	4542914	611534639	CML-RA	168	80	0	
CY8CMBR3106S2(8CP44304)	4542914	611534639	CML-RA	288	79	0	
STRESS: PRE/POST LFR PARAMETER ASSESSMENT							
CY8CMBR31552(8CP44303CB)	4542914	611534693	ASE-G	COMP	10 2	0	

Reliability Test Data

QTP #: 151303

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: STATIC LATCH-UP (85C, 140mA)							
CY8CMBR3106S2(8CP44304)	4542914	611534639	CML-RA	COMP	6	0	
STRESS: STATIC LATCH-UP (85C, 200mA)							
CY8CMBR3106S2(8CP44304)	4542914	611534639	CML-RA	COMP	3	0	
STRESS: STATIC LATCH-UP (125C, 140mA)							
CY8CMBR3106S2(8CP44304)	4542914	611534639	CML-RA	COMP	3	0	
STRESS: STATIC LATCH-UP (85C, 300mA)							
CY8CMBR3106S2(8CP44304)	4542914	611534639	CML-RA	COMP	3	0	
STRESS: TC COND. C -65C TO 150C, PRE COND 192 HRS 30C/60%RH (MSL3)							
CY8CMBR3106S2(8CP44304)	4542914	611534639	CML-RA	500	80	0	
CY8CMBR3106S2(8CP44304)	4542914	611534639	CML-RA	1000	80	0	

Reliability Test Data

QTP #: 160401

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: ACOUSTIC, MSL3							
CYFPA1 (8CP2F1001BB)	3609025	611610290	CML-R	COMP	15	0	
STRESS: DATA RETENTION, PLASTIC, 150C							
CY8C42452(8CP44200DB)	4537464	611531543	CML-RA	500	80	0	
CY8C42452(8CP44200DB)	4537464	611531543	CML-RA	1000	80	0	
STRESS: HIGH TEMP DYNAMIC OPERATING LIFE-EARLY FAILURE RATE (150C, 2.07V, Vcc Max)							
CYFPA1 (8CP2F1001BB)	3609025	611610290	CML-R	48	1550	0	
STRESS: ENDURANCE							
CY8C42452(8CP44200DB)	4537464	611531543	CML-RA	168	80	0	
CY8C42452(8CP44200DB)	4537464	611531543	CML-RA	1000	80	0	
STRESS: ESD-CHARGE DEVICE MODEL							
CYFPA1 (8CP2F1001BB)	3609025	611610290	CML-R	500	9	0	
CYFPA1 (8CP2F1001BB)	3609025	611610290	CML-R	750	3	0	
CYFPA1 (8CP2F1001BB)	3609025	611610290	CML-R	1000	3	0	
STRESS: ESD-HUMAN BODY MODEL PER JESD22, METHOD A114							
CYFPA1 (8CP2F1001BB)	3609025	611610290	CML-R	1100	3	0	
CYFPA1 (8CP2F1001BB)	3609025	611610290	CML-R	2200	3	0	
CYFPA1 (8CP2F1001BB)	3609025	611610290	CML-R	3300	3	0	
STRESS: PRESSURE COOKER TEST (121C, 100%RH), 15 Psig, PRE COND 192 HR 30C/60%RH (MSL3)							
CYFPA1 (8CP2F1001BB)	3609025	611610290	CML-R	168	80	0	
CYFPA1 (8CP2F1001BB)	3609025	611610290	CML-R	168	76	0	
STRESS: STATIC LATCH-UP (125C, 100mA)							
CYFPA1 (8CP2F1001BB)	3609025	611610290	CML-R	COMP	3	0	
STRESS: STATIC LATCH-UP (125C, 140mA)							
CYFPA1 (8CP2F1001BB)	3609025	611610290	CML-R	COMP	3	0	
STRESS: STATIC LATCH-UP (85C, 200mA)							
CYFPA1 (8CP2F1001BB)	3609025	611610290	CML-R	COMP	3	0	
STRESS: STATIC LATCH-UP (85C, 300mA)							
CYFPA1 (8CP2F1001BB)	3609025	611610290	CML-R	COMP	3	0	
STRESS: TC COND. C -65C TO 150C, PRE COND 192 HRS 30C/60%RH (MSL3)							
CYFPA1 (8CP2F1001BB)	3609025	611610290	CML-R	500	78	0	
CYFPA1 (8CP2F1001BB)	3609025	611610290	CML-R	1000	76	0	

Reliability Test Data

QTP #: 160301

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: DATA RETENTION, PLASTIC, 150C							
CYAT816882 (8C206802BB)	3613017	611611087	CML-R	500	80	0	
CYAT816882 (8C206802BB)	3613017	611611087	CML-R	1000	80	0	
STRESS: DATA RETENTION, PLASTIC, 175C							
CYAT816882 (8C206802BB)	3613017	611611087	CML-R	76	80	0	
CYAT816882 (8C206802BB)	3613017	611611087	CML-R	152	80	0	
STRESS: HIGH TEMP DYNAMIC OPERATING LIFE-EARLY FAILURE RATE (150C, 2.07V, Vcc Max)							
CYAT816882 (8C206802BB)	3613017	611611087	CML-R	48	2609	1	No Visual Defect found
CYAT816882 (8C206802BB)	3617006	611617664	CML-R	48	1013	0	
STRESS: ENDURANCE							
CYAT816882 (8C206802BB)	3613017	611611087	CML-R	500	80	0	
CYAT816882 (8C206802BB)	3613017	611611087	CML-R	1000	80	0	
STRESS: ESD-CHARGE DEVICE MODEL							
CYAT816882 (8C206802BB)	3613017	611611087	CML-R	500	9	0	
CYAT816882 (8C206802BB)	3613017	611611087	CML-R	750	3	0	
CYAT816882 (8C206802BB)	3613017	611611087	CML-R	1000	3	0	
STRESS: ESD-CHARGE DEVICE MODEL							
CYTT417012 (8CP206801BB)	3613017	611614958	CML-R	500	9	0	
CYTT417012 (8CP206801BB)	3613017	611614958	CML-R	1000	3	0	
CYTT417012 (8CP206801BB)	3613017	611614958	CML-R	1250	3	0	
CYTT417012 (8CP206801BB)	3613017	611614958	CML-R	1500	3	0	
CYTT417012 (8CP206801BB)	3613017	611614958	CML-R	1750	3	0	
CYTT417012 (8CP206801BB)	3613017	611614958	CML-R	2000	3	0	
STRESS: ESD-HUMAN BODY MODEL PER JESD22, METHOD A114							
CYAT816882 (8C206802BB)	3613017	611611087	CML-R	1100	3	0	
CYAT816882 (8C206802BB)	3613017	611611087	CML-R	2200	8	0	
CYAT816882 (8C206802BB)	3613017	611611087	CML-R	3300	3	0	
CYAT816882 (8C206802BB)	3613017	611611087	CML-R	4000	3	0	
CYAT816882 (8C206802BB)	3613017	611611087	CML-R	5000	3	0	
CYAT816882 (8C206802BB)	3613017	611611087	CML-R	6000	3	0	
CYAT816882 (8C206802BB)	3613017	611611087	CML-R	7000	3	0	
STRESS: HIGH TEMP DYNAMIC OPERATING LIFE-LATENT FAILURE RATE (150C, 2.07V, Vcc Max)							
CYAT816882 (8C206802BB)	3613017	611611087	CML-R	500	99	0	
STRESS: PRE/POST LFR PARAMETER ASSESSMENT							
CYAT816882 (8C206802BB)	3613017	611611087	CML-R	COMP	10	0	
STRESS: STATIC LATCH-UP (125C, 140mA)							
CYAT816882 (8C206802BB)	3613017	611611087	CML-R	COMP	3	0	

Reliability Test Data

QTP #: 160301

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: STATIC LATCH-UP (85C, 140mA)							
CYAT816882 (8C206802BB)	3613017	611611087	CML-R	COMP	3	0	
STRESS: STATIC LATCH-UP (85C, 200mA)							
CYAT816882 (8C206802BB)	3613017	611611087	CML-R	COMP	3	0	
STRESS: STATIC LATCH-UP (85C, 300mA)							
CYAT816882 (8C206802BB)	3613017	611611087	CML-R	COMP	3	0	
STRESS: TC COND. C -65C TO 150C, PRE COND 192 HRS 30C/60%RH (MSL3)							
CYAT816882 (8C206802BB)	3613017	611611087	CML-R	500	80	0	
CYAT816882 (8C206802BB)	3613017	611611087	CML-R	1000	80	0	

Reliability Test Data

QTP #: 160803

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: HIGH TEMP DYNAMIC OPERATING LIFE-EARLY FAILURE RATE (150C, 2.07V, Vcc Max)							
CY8C4045 (8CP40003BB)	3615013	611612344	OSE-T	48	1596	0	
STRESS: ESD-CHARGE DEVICE MODEL							
CY8C4045 (8CP40003BB)	3615013	611612344	OSE-T	500	9	0	
CY8C4045 (8CP40003BB)	3615013	611612344	OSE-T	750	3	0	
CY8C4045 (8CP40003BB)	3615013	611612344	OSE-T	1000	3	0	
CY8C4045 (8CP40003BB)	3615013	611612344	OSE-T	1250	3	0	
CY8C4045 (8CP40003BB)	3615013	611612344	OSE-T	1500	3	0	
STRESS: ESD-HUMAN BODY MODEL PER JESD22, METHOD A114							
CY8C4045 (8CP40003BB)	3615013	611612344	OSE-T	1100	3	0	
CY8C4045 (8CP40003BB)	3615013	611612344	OSE-T	2200	8	0	
CY8C4045 (8CP40003BB)	3615013	611612344	OSE-T	3300	3	0	
CY8C4045 (8CP40003BB)	3615013	611612344	OSE-T	4000	3	0	
CY8C4045 (8CP40003BB)	3615013	611612344	OSE-T	5000	3	0	
CY8C4045 (8CP40003BB)	3615013	611612344	OSE-T	6000	3	0	
CY8C4045 (8CP40003BB)	3615013	611612344	OSE-T	7000	3	0	
STRESS: STATIC LATCH-UP (125C, 100Ma)							
CY8C4045 (8CP40003BB)	3615013	611612344	OSE-T	COMP	3	0	
STRESS: STATIC LATCH-UP (125C, 140Ma)							
CY8C4045 (8CP40003BB)	3615013	611612344	OSE-T	COMP	3	0	
STRESS: STATIC LATCH-UP (85C, 140Ma)							
CY8C4045 (8CP40003BB)	3615013	611612344	OSE-T	COMP	3	0	
STRESS: STATIC LATCH-UP (85C, 200Ma)							
CY8C4045 (8CP40003BB)	3615013	611612344	OSE-T	COMP	3	0	
STRESS: STATIC LATCH-UP (85C, 300Ma)							
CY8C4045 (8CP40003BB)	3615013	611612344	OSE-T	COMP	3	0	

Reliability Test Data

QTP #: 160207

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: ACOUSTIC, MSL3							
CY8C3866A (8CP38661HB)	3617013	611615839	CML-R	COMP	15	0	
STRESS: DATA RETENTION, PLASTIC, 150C							
CY8C3866A (8CP38661HB)	3617013	611615839	CML-R	500	90	0	
CY8C3866A (8CP38661HB)	3617013	611615839	CML-R	1000	90	0	
STRESS: DATA RETENTION, PLASTIC, 175C							
CY8C3866A (8CP38661HB)	3617013	611615839	CML-R	76	90	0	
CY8C3866A (8CP38661HB)	3617013	611615839	CML-R	152	90	0	
STRESS: HIGH TEMP DYNAMIC OPERATING LIFE-EARLY FAILURE RATE (150C, 2.07V, Vcc Max)							
CY8C3866A (8CP38661HB)	3617013	611615839	CML-R	48	2303	0	
STRESS: ENDURANCE							
CY8C3866A (8CP38661HB)	3617013	611615839	CML-R	168	90	0	
CY8C3866A (8CP38661HB)	3617013	611615839	CML-R	500	90	0	
STRESS: ESD-CHARGE DEVICE MODEL							
CY8C3866A (8CP38661HB)	3617013	611615839	CML-R	500	9	0	
STRESS: ESD-HUMAN BODY MODEL PER JESD22, METHOD A114							
CY8C3866A (8CP38661HB)	3617013	611615839	CML-R	1100	3	0	
CY8C3866A (8CP38661HB)	3617013	611615839	CML-R	2200	8	0	
STRESS: HI-ACCEL SATURATION TEST (130C, 85%RH, 5.5V), PRE COND 192 HR 30C/60%RH (MSL3)							
CY8C3866A (8CP38661HB)	3617013	611615839	CML-R	96	30	0	
STRESS: HIGH TEMP DYNAMIC OPERATING LIFE-LATENT FAILURE RATE (150C, 5.07V, Vcc Max)							
CY8C3866A (8CP38661HB)	3617013	611615839	CML-R	500	125	0	
STRESS: PRESSURE COOKER TEST (121C, 100%RH), 15 Psig, PRE COND 192 HR 30C/60%RH (MSL3)							
CY8C3866A (8CP38661HB)	3617013	611615839	CML-R	168	78	0	
STRESS: STATIC LATCH-UP (125C, 100mA)							
CY8C3866A (8CP38661HB)	3617013	611615839	CML-R	COMP	3	0	
STRESS: STATIC LATCH-UP (125C, 140mA)							
CY8C3866A (8CP38661HB)	3617013	611615839	CML-R	COMP	3	0	
STRESS: STATIC LATCH-UP (85C, 140mA)							
CY8C3866A (8CP38661HB)	3617013	611615839	CML-R	COMP	3	0	
STRESS: STATIC LATCH-UP (85C, 200mA)							
CY8C3866A (8CP38661HB)	3617013	611615839	CML-R	COMP	3	0	
STRESS: STATIC LATCH-UP (85C, 300mA)							
CY8C3866A (8CP38661HB)	3617013	611615839	CML-R	COMP	3	0	
STRESS: TC COND. C -65C TO 150C, PRE COND 192 HRS 30C/60%RH (MSL3)							
CY8C3866A (8CP38661HB)	3617013	611615839	CML-R	500	80	0	

Reliability Test Data

QTP #: 160702

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: ACOUSTIC, MSL3							
CY8C4248 (8CP42003CB)	3621015	611619413	ASE-G	COMP	15	0	
CY8C4246 (8CP480001BB)	4542101	611535695	CML-RA	COMP	15	0	
STRESS: DATA RETENTION, PLASTIC, 175C							
CY8C4248 (8CP42003CB)	3621015	611619413	ASE-G	76	80	0	
CY8C4248 (8CP42003CB)	3621015	611619413	ASE-G	152	80	0	
STRESS: HIGH TEMP DYNAMIC OPERATING LIFE-EARLY FAILURE RATE (150C, 2.07V, Vcc Max)							
CY8C4248 (8CP42003CB)	3621015	611619413	ASE-G	48	1521	0	
CY8C4246 (8CP480001BB)	4542101	611535695	CML-RA	48	1532	0	
STRESS: ENDURANCE							
CY8C4248 (8CP42003CB)	3621015	611619413	ASE-G	168	80	0	
STRESS: ESD-CHARGE DEVICE MODEL							
CY8C4248 (8CP42003CB)	3621015	611619413	ASE-G	500	9	0	
CY8C4248 (8CP42003CB)	3621015	611619413	ASE-G	750	3	0	
CY8C4248 (8CP42003CB)	3621015	611619413	ASE-G	1000	3	0	
CY8C4248 (8CP42003CB)	3621015	611619413	ASE-G	1250	3	0	
CY8C4248 (8CP42003CB)	3621015	611619413	ASE-G	1500	3	0	
CY8C4248 (8CP42003CB)	3621015	611619413	ASE-G	1750	3	0	
CY8C4248 (8CP42003CB)	3621015	611619413	ASE-G	2000	3	0	
CY8C4248 (8CP42005CB)	3621015	611619414	ASE-G	500	9	0	
CY8C4248 (8CP42005CB)	3621015	611619414	ASE-G	750	3	0	
CY8C4248 (8CP42005CB)	3621015	611619414	ASE-G	1000	3	0	
CY8C4248 (8CP42005CB)	3621015	611619414	ASE-G	1250	3	0	
CY8C4248 (8CP42005CB)	3621015	611619414	ASE-G	1500	3	0	
CY8C4248 (8CP42005CB)	3621015	611619414	ASE-G	1750	3	0	
CY8C4248 (8CP42005CB)	3621015	611619414	ASE-G	2000	3	0	
STRESS: ESD-HUMAN BODY MODEL PER JESD22, METHOD A114							
CY8C4248 (8CP42003CB)	3621015	611619413	ASE-G	1100	3	0	
CY8C4248 (8CP42003CB)	3621015	611619413	ASE-G	2200	8	0	
CY8C4248 (8CP42003CB)	3621015	611619413	ASE-G	3300	3	0	
CY8C4248 (8CP42003CB)	3621015	611619413	ASE-G	4000	3	0	
STRESS: HI-ACCEL SATURATION TEST (130C, 85%RH, 5.5V), PRE COND 192 HR 30C/60%RH (MSL3)							
CY8C4248 (8CP42003CB)	3621015	611619413	ASE-G	96	30	0	
STRESS: HIGH TEMP DYNAMIC OPERATING LIFE-LATENT FAILURE RATE (150C, 5.07V, Vcc Max)							
CY8C4246 (8CP480001BB)	4542101	611535695	CML-RA	80	80	0	
CY8C4246 (8CP480001BB)	4542101	611535695	CML-RA	500	80	0	

Reliability Test Data

QTP #: 160702

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: PRESSURE COOKER TEST (121C, 100%RH), 15 Psig, PRE COND 192 HR 30C/60%RH (MSL3)							
CY8C4248 (8CP42003CB)	3621015	611619413	ASE-G	168	80	0	
STRESS: STATIC LATCH-UP (125C, 100mA)							
CY8C4248 (8CP42003CB)	3621015	611619413	ASE-G	COMP	3	0	
STRESS: STATIC LATCH-UP (125C, 140mA)							
CY8C4248 (8CP42003CB)	3621015	611619413	ASE-G	COMP	3	0	
STRESS: STATIC LATCH-UP (85C, 140mA)							
CY8C4248 (8CP42003CB)	3621015	611619413	ASE-G	COMP	3	0	
STRESS: STATIC LATCH-UP (85C, 200mA)							
CY8C4248 (8CP42003CB)	3621015	611619413	ASE-G	COMP	3	0	
STRESS: STATIC LATCH-UP (85C, 300mA)							
CY8C4248 (8CP42003CB)	3621015	611619413	ASE-G	COMP	3	0	
STRESS: TC COND. C -65C TO 150C, PRE COND 192 HRS 30C/60%RH (MSL3)							
CY8C4248 (8CP42003CB)	3621015	611619413	ASE-G	500	80	0	
CY8C4246 (8CP480001BB)	4542101	611535695	CML-RA	500	80	0	
CY8C4246 (8CP480001BB)	4542101	611535695	CML-RA	1000	80	0	

Reliability Test Data

QTP #: 160701

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: ACOUSTIC, MSL3							
CY8C4248 (8CP42003CB)	3631019	611627888	ASE-G	COMP	15	0	
CY8C4248 (8CP42003DB)	3649066	611701516	ASE-G	COMP	15	0	
CY8C4248 (8CP42003DB)	3649067	611701515	ASE-G	COMP	15	0	
STRESS: DATA RETENTION, PLASTIC, 150C							
CY8C4248 (8CP42003CB)	3631019	611627888	ASE-G	500	80	0	
CY8C4248 (8CP42003CB)	3631019	611627888	ASE-G	1000	80	0	
STRESS: DATA RETENTION, PLASTIC, 175C							
CY8C4248 (8CP42003CB)	3631019	611627888	ASE-G	76	80	0	
CY8C4248 (8CP42003CB)	3631019	611627888	ASE-G	152	80	0	
STRESS: HIGH TEMP DYNAMIC OPERATING LIFE-EARLY FAILURE RATE (150C, 2.07V, Vcc Max)							
CY8C4248 (8CP42003CB)	3631019	611627888	ASE-G	48	1598	0	
CY8C4248 (8CP42003DB)	3649066	611701516	ASE-G	48	1550	0	
STRESS: ENDURANCE							
CY8C4248 (8CP42003CB)	3631019	611627888	ASE-G	168	88	0	
CY8C4248 (8CP42003CB)	3631019	611627888	ASE-G	500	88	0	
STRESS: ESD-CHARGE DEVICE MODEL							
CY8C4248 (8CP42003CB)	3631019	611627888	ASE-G	500	9	0	
CY8C4248 (8CP42003CB)	3631019	611627888	ASE-G	750	3	0	
CY8C4248 (8CP42003CB)	3631019	611627888	ASE-G	1000	3	0	
CY8C4248 (8CP42003CB)	3631019	611627888	ASE-G	1250	3	0	
CY8C4248 (8CP42003CB)	3631019	611627888	ASE-G	1500	3	0	
CY8C4248 (8CP42003CB)	3631019	611627888	ASE-G	1750	3	0	
CY8C4248 (8CP42003CB)	3631019	611627888	ASE-G	2000	3	0	
STRESS: ESD-HUMAN BODY MODEL PER JESD22, METHOD A114							
CY8C4248 (8CP42003CB)	3631019	611627888	ASE-G	1000	3	0	
CY8C4248 (8CP42003CB)	3631019	611627888	ASE-G	2200	8	0	
CY8C4248 (8CP42003CB)	3631019	611627888	ASE-G	3300	3	0	
CY8C4248 (8CP42003CB)	3631019	611627888	ASE-G	4000	3	0	
CY8C4248 (8CP42003CB)	3631019	611627888	ASE-G	5000	3	0	
CY8C4248 (8CP42003CB)	3631019	611627888	ASE-G	6000	3	0	
CY8C4248 (8CP42003CB)	3631019	611627888	ASE-G	7000	3	0	
CY8C4248 (8CP42003CB)	3631019	611627888	ASE-G	8000	3	0	
STRESS: HI-ACCEL SATURATION TEST (130C, 85%RH, 5.5V), PRE COND 192 HR 30C/60%RH (MSL3)							
CY8C4248 (8CP42003CB)	3631019	611627888	ASE-G	96	25	0	
CY8C4248 (8CP42003CB)	3631019	611627888	ASE-G	192	25	0	

Reliability Test Data

QTP #: 160701

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: HIGH TEMP DYNAMIC OPERATING LIFE-LATENT FAILURE RATE (150C, 2.07V, Vcc Max)							
CY8C4248 (8CP42003CB)	3631019	611627888	ASE-G	80	80	0	
CY8C4248 (8CP42003CB)	3631019	611627888	ASE-G	500	80	0	
CY8C4248 (8CP42003DB)	3649066	611701516	ASE-G	500	80	0	
STRESS: PRESSURE COOKER TEST (121C, 100%RH), 15 Psig, PRE COND 192 HR 30C/60%RH (MSL3)							
CY8C4248 (8CP42003CB)	3631019	611627888	ASE-G	96	80	0	
CY8C4248 (8CP42003DB)	3649066	611701516	ASE-G	168	80	0	
STRESS: PRE/POST LFR PARAMETER ASSESSMENT							
CY8C4248 (8CP42003CB)	3631019	611627888	ASE-G	COMP	12	0	
STRESS: STATIC LATCH-UP (125C, 100mA)							
CY8C4248 (8CP42003CB)	3631019	611627888	ASE-G	COMP	3	0	
STRESS: STATIC LATCH-UP (125C, 140mA)							
CY8C4248 (8CP42003CB)	3631019	611627888	ASE-G	COMP	3	0	
STRESS: STATIC LATCH-UP (85C, 140mA)							
CY8C4248 (8CP42003CB)	3631019	611627888	ASE-G	COMP	3	0	
STRESS: STATIC LATCH-UP (85C, 200mA)							
CY8C4248 (8CP42003CB)	3631019	611627888	ASE-G	COMP	3	0	
STRESS: STATIC LATCH-UP (85C, 300mA)							
CY8C4248 (8CP42003CB)	3631019	611627888	ASE-G	COMP	3	0	
STRESS: TC COND. C -65C TO 150C, PRE COND 192 HRS 30C/60%RH (MSL3)							
CY8C4248 (8CP42003CB)	3631019	611627888	ASE-G	500	80	0	
CY8C4248 (8CP42003CB)	3631019	611627888	ASE-G	1000	80	0	
CY8C4248 (8CP42003DB)	3649066	611701516	ASE-G	500	80	0	
CY8C4248 (8CP42003DB)	3649066	611701516	ASE-G	1000	80	0	
CY8C4248 (8CP42003DB)	3649067	611701515	ASE-G	500	80	0	
CY8C4248 (8CP42003DB)	3649067	611701515	ASE-G	1000	80	0	

Reliability Test Data

QTP #: 172307

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: HIGH TEMP DYNAMIC OPERATING LIFE-EARLY FAILURE RATE (150C, 2.07V, Vcc Max)							
CY8C4248 (8CP42003DB)	3721130	611724119	ASE-G	48	1196	0	
CY8C4248 (8CP42003DB)	3721130	611729092	ASE-G	48	1200	0	
STRESS: ESD-CHARGE DEVICE MODEL							
CY8C4248 (8CP42003DB)	3721130	611724119	ASE-G	500	9	0	
CY8C4248 (8CP42003DB)	3721130	611724119	ASE-G	1000	3	0	
CY8C4248 (8CP42003DB)	3721130	611724119	ASE-G	1250	3	0	
CY8C4248 (8CP42005DB)	3726090	611732045	ASE-G	500	9	0	
CY8C4248 (8CP42005DB)	3726090	611732045	ASE-G	1000	3	0	
CY8C4248 (8CP42005DB)	3726090	611732045	ASE-G	1250	3	0	
STRESS: ESD-HUMAN BODY MODEL PER JESD22, METHOD A114							
CY8C4248 (8CP42003DB)	3721130	611724119	ASE-G	1100	3	0	
CY8C4248 (8CP42003DB)	3721130	611724119	ASE-G	2200	8	0	
CY8C4248 (8CP42003DB)	3721130	611724119	ASE-G	3300	3	0	
STRESS: HI-ACCEL SATURATION TEST (130C, 85%RH, 5.5V), PRE COND 192 HR 30C/60%RH (MSL3)							
CY8C4248 (8CP42003DB)	3721130	611724119	ASE-G	96	30	0	
STRESS: HIGH TEMP DYNAMIC OPERATING LIFE-LATENT FAILURE RATE (150C, 2.07V, Vcc Max)							
CY8C4248 (8CP42003DB)	3721130	611724119	ASE-G	500	80	0	
STRESS: PRESSURE COOKER TEST (121C, 100%RH), 15 Psig, PRE COND 192 HR 30C/60%RH (MSL3)							
CY8C4248 (8CP42003DB)	3721130	611724119	ASE-G	168	80	0	
STRESS: PRE/POST LFR PARAMETER ASSESSMENT							
CY8C4248 (8CP42003DB)	3721130	611724119	ASE-G	COMP	12	0	
STRESS: STATIC LATCH-UP (125C, 100mA)							
CY8C4248 (8CP42003DB)	3721130	611724119	ASE-G	COMP	3	0	
STRESS: STATIC LATCH-UP (125C, 140mA)							
CY8C4248 (8CP42003DB)	3721130	611724119	ASE-G	COMP	2	0	
STRESS: STATIC LATCH-UP (85C, 140mA)							
CY8C4248 (8CP42003DB)	3721130	611724119	ASE-G	COMP	2	0	
STRESS: STATIC LATCH-UP (85C, 200mA)							
CY8C4248 (8CP42003DB)	3721130	611724119	ASE-G	COMP	2	0	
STRESS: TC COND. C -65C TO 150C, PRE COND 192 HRS 30C/60%RH (MSL3)							
CY8C4248 (8CP42003DB)	3721130	611724119	ASE-G	COMP	80	0	
CY8C4248 (8CP42003DB)	3721130	611724119	ASE-G	COMP	78	0	

Reliability Test Data

QTP #: 173204

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: HIGH TEMP DYNAMIC OPERATING LIFE-EARLY FAILURE RATE (150C, 2.07V, Vcc Max)							
CY8C4147 (8CP43002AB)	3738085	611737095	ASE-G	48	537	0	
CY8C4147 (8CP43002AB)	3739025	611738647	ASE-G	48	1090	0	
STRESS: ESD-CHARGE DEVICE MODEL							
CY8C4147 (8CP43002AB)	3738085	611737095	ASE-G	500	9	0	
CY8C4147 (8CP43002AB)	3738085	611737095	ASE-G	1000	3	0	
CY8C4147 (8CP43002AB)	3738085	611737095	ASE-G	1250	3	0	
STRESS: ESD-HUMAN BODY MODEL PER JESD22, METHOD A114							
CY8C4147 (8CP43002AB)	3738085	611737095	ASE-G	1100	3	0	
CY8C4147 (8CP43002AB)	3738085	611737095	ASE-G	2200	8	0	
CY8C4147 (8CP43002AB)	3738085	611737095	ASE-G	3300	3	0	
STRESS: STATIC LATCH-UP (125C, 100mA)							
CY8C4147 (8CP43002AB)	3738085	611737095	ASE-G	1100	3	0	
STRESS: STATIC LATCH-UP (125C, 140mA)							
CY8C4147 (8CP43002AB)	3738085	611737095	ASE-G	1100	3	0	
STRESS: STATIC LATCH-UP (85C, 140mA)							
CY8C4147 (8CP43002AB)	3738085	611737095	ASE-G	1100	3	0	
STRESS: STATIC LATCH-UP (85C, 200mA)							
CY8C4147 (8CP43002AB)	3738085	611737095	ASE-G	1100	3	0	

Reliability Test Data

QTP #: 162806

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: ACOUSTIC, MSL3							
CY8C5668(8C561001CB)	3708110	611711571	CML-R	COMP	22	0	
STRESS: ENDURANCE							
CY8C3866A (8CP38661HB)	3617013	611615839	CML-R	CYCLING	90	0	
CY8C3866A (8CP38661HB)	3617013	611615839	CML-R	168	90	0	
CY8C3866A (8CP38661HB)	3617013	611615839	CML-R	500	90	0	
STRESS: ESD-CHARGE DEVICE MODEL							
CY8C5668(8C561001CB)	3708110	611711571	CML-R	500	9	0	
CY8C5668(8C561001CB)	3708110	611711571	CML-R	750	3	0	
CY8C5668(8C561001CB)	3708110	611711571	CML-R	1000	3	0	
CY8C5668(8C561001CB)	3708110	611711571	CML-R	1250	3	0	
CY8C5668(8C561001CB)	3708110	611711571	CML-R	1500	3	0	
CY8C5668(8C561001CB)	3708110	611711571	CML-R	1750	3	0	
STRESS: ESD-HUMAN BODY MODEL PER JESD22, METHOD A114							
CY8C5668(8C561001CB)	3708110	611711571	CML-R	1100	3	0	
CY8C5668(8C561001CB)	3708110	611711571	CML-R	2200	3	0	
STRESS: DATA RETENTION, PLASTIC, 175C							
CY8C5668(8C561001CB)	3708110	611711571	CML-R	76	22	0	
CY8C5668(8C561001CB)	3708110	611711571	CML-R	152	22	0	
STRESS: HIGH TEMP DYNAMIC OPERATING LIFE-EARLY FAILURE RATE (150C, 2.07V, Vcc Max)							
CY8C5668(8C561001CB)	3708110	611711571	CML-R	48	1545	0	
STRESS: HIGH TEMP DYNAMIC OPERATING LIFE-LATENT FAILURE RATE (150C, 2.07V, Vcc Max)							
CY8C5668(8C561001CB)	3708110	611711571	CML-R	80	120	0	
CY8C5668(8C561001CB)	3708110	611711571	CML-R	500	120	0	
STRESS: PRESSURE COOKER TEST (121C, 100%RH), 15 Psig, PRE COND 192 HR 30C/60%RH (MSL3)							
CY8C5668(8C561001CB)	3732049	611731960	CML-R	168	80	0	
CY8C5668(8C561001CB)	3732049	611731960	CML-R	288	78	0	
STRESS: PRE/POST LFR PARAMETER ASSESSMENT							
CY8C5668(8C561001CB)	3708110	611711571	CML-R	COMP	10 2	0	
STRESS: STATIC LATCH-UP (85C, 140mA)							
CY8C5668(8C561001CB)	3708110	611711571	CML-R	COMP	3	0	
STRESS: TC COND. C -65C TO 150C, PRE COND 192 HRS 30C/60%RH (MSL3)							
CY8C5668(8C561001CB)	3708110	611711571	CML-R	500	84	0	
CY8C5668(8C561001CB)	3708110	611711571	CML-R	1000	84	0	

Document History Page

Document Title: QTP 162806: PSoC5 LP Device Family S8PM-10P Technology, Fab25
Document Number: 002-24322

Rev.	ECN No.	Orig. of Change	Description of Change
**	6212734	HSTO	Initial Spec Release

Item	Marketing Part Number	Sample Order Part Number
1	CY8C5266FNI-LP205T	CY8C5266FNI2-LP205 Subject to lead time
2	CY8C5267AXI-LP051	CY8C5267AXI2-LP051 Subject to lead time
3	CY8C5267LTI-LP089	CY8C5267LTI2-LP089 Subject to lead time
4	CY8C5268AXI-LP047	CY8C5268AXI2-LP047 Subject to lead time
5	CY8C5268LTI-LP030	CY8C5268LTI2-LP030 Subject to lead time
6	CY8C5287AXI-LP095	CY8C5287AXI2-LP095 Subject to lead time
7	CY8C5288FNI-LP213T	CY8C5288FNI2-LP213 Subject to lead time
8	CY8C5288LTI-LP090	CY8C5288LTI2-LP090 Subject to lead time
9	CY8C5467AXI-LP108	CY8C5467AXI2-LP108 Subject to lead time
10	CY8C5467LTI-LP003	CY8C5467LTI2-LP003 Subject to lead time
11	CY8C5468AXI-LP042	CY8C5468AXI2-LP042 Subject to lead time
12	CY8C5468AXI-LP106	CY8C5468AXI2-LP106 Subject to lead time
13	CY8C5468LTI-LP026	CY8C5468LTI2-LP026 Subject to lead time
14	CY8C5488AXI-LP120	CY8C5488AXI2-LP120 Subject to lead time
15	CY8C5488FNI-LP212T	CY8C5488FNI2-LP212 Subject to lead time
16	CY8C5488LTI-LP093	CY8C5488LTI2-LP093 Subject to lead time
17	CY8C5666AXI-LP001	CY8C5666AXI2-LP001 Subject to lead time
18	CY8C5666AXI-LP004	CY8C5666AXI2-LP004 Subject to lead time
19	CY8C5666AXQ-LP004	CY8C5666AXQ2-LP004 Subject to lead time
20	CY8C5666LTI-LP005	CY8C5666LTI2-LP005 Subject to lead time
21	CY8C5667AXI-LP006	CY8C5667AXI2-LP006 Subject to lead time
22	CY8C5667AXI-LP040	CY8C5667AXI2-LP040 Subject to lead time
23	CY8C5667AXQ-LP040	CY8C5667AXQ2-LP040 Subject to lead time
24	CY8C5667LTI-LP009	CY8C5667LTI2-LP009 Subject to lead time
25	CY8C5667LTI-LP041	CY8C5667LTI2-LP041 Subject to lead time
26	CY8C5668AXI-LP010	CY8C5668AXI2-LP010 Subject to lead time
27	CY8C5668AXI-LP013	CY8C5668AXI2-LP013 Subject to lead time
28	CY8C5668AXI-LP034	CY8C5668AXI2-LP034 Subject to lead time
29	CY8C5668LTI-LP014	CY8C5668LTI2-LP014 Subject to lead time
30	CY8C5688AXI-LP099	CY8C5688AXI2-LP099 Subject to lead time
31	CY8C5688FNI-LP211T	CY8C5688FNI2-LP211 Subject to lead time
32	CY8C5688LTI-LP086	CY8C5688LTI2-LP086 Subject to lead time
33	CY8C5866AXI-LP020	CY8C5866AXI2-LP020 Subject to lead time
34	CY8C5866AXI-LP021	CY8C5866AXI2-LP021 Subject to lead time
35	CY8C5866LTI-LP022	CY8C5866LTI2-LP022 Subject to lead time
36	CY8C5867AXI-LP024	CY8C5867AXI2-LP024 Subject to lead time
37	CY8C5867LTI-LP025	CY8C5867LTI2-LP025 Subject to lead time
38	CY8C5867LTI-LP028	CY8C5867LTI2-LP028 Subject to lead time
39	CY8C5868AXI-LP032	CY8C5868AXI2-LP032 Subject to lead time
40	CY8C5868AXI-LP035	CY8C5868AXI2-LP035 Subject to lead time
41	CY8C5868LTI-LP038	CY8C5868LTI2-LP038 Subject to lead time
42	CY8C5868LTI-LP039	CY8C5868LTI2-LP039 Subject to lead time
43	CY8C5888AXI-LP096	CY8C5888AXI2-LP096 Subject to lead time
44	CY8C5888AXQ-LP096	CY8C5888AXQ2-LP096 Subject to lead time
45	CY8C5888FNI-LP210T	CY8C5888FNI2-LP210 Subject to lead time
46	CY8C5888FNI-LP214T	CY8C5888FNI2-LP214 Subject to lead time
47	CY8C5888LTI-LP097	CY8C5888LTI2-LP097 Subject to lead time
48	CY8C5888LTQ-LP097	CY8C5888LTQ2-LP097 Subject to lead time
49	CYSHM35936P-L099FNIT	CYSHM35936P2-L099FNI Subject to lead time
50	CG8576AA	CG8576XA Subject to lead time
51	CG8577AA	CG8577XA Subject to lead time
52	CG8578AA	CG8578XA Subject to lead time
53	CG8579AA	CG8579XA Subject to lead time
54	CG8580AA	CG8580XA Subject to lead time

55	CG8601AA	CG8601XA Subject to lead time
56	CG8623AA	CG8623XA Subject to lead time
57	CG8761AA	CG8761XA Subject to lead time
58	CP8420ATT	CP8420XT Subject to lead time
59	CS8091AA	CS8091XA Subject to lead time
60	CS8092AA	CS8092XA Subject to lead time

Cypress Semiconductor
Sort Site Qualification Report

QTP# 171610 VERSION *A
September 2017

Cypress Test 25, Austin, Texas **Sort Site for S8 Technology**
MPD / MCD Devices

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

QTP Number	Description of Qualification Purpose	Date
151907	Cypress Test 25, Austin, Texas Sort Site Qualification for S4 Technology	June 2015
171610	Cypress Test 25, Austin, Texas Sort Site Qualification for S8 Technology	April 2017

QUALIFICATION COVERAGE RANGE

MARKETING PART NUMBER	DEVICE DESCRIPTION
CY8C4013 CY8C4014 CY8CMBR3002 CY8CMBR3102 CY8CMBR3110	CapSense® MBR3
CY8CMBR31 CY8C4013 CY8C4014	PSoC® 4000
CY8C4014	Automotive PSoC® 4000
CY8C4124 CY8C4125 CY8C4244 CY8C4245	PSoC® 4100 PSoC® 4200
CY8C4124 CY8C4125 CY8C4244 CY8C4245	Automotive PSoC® 4100 PSoC® 4200
CY8CEBIKE	PSoC® 4100 PSoC® 4200
CY8C4125 CY8C4126 CY8C4127	PSoC® 4100M PSoC® 4200M M Series
CY8C4245 CY8C4246 CY8C4247	PSoC® 4100M PSoC® 4200M M Series
CY8C4246 CY8C4247 CY8C4248	PSoC® 4200L L-Series
CY8C4127 CY8C4247	PSoC® 4 BLE 128K
CYBL1016 CYBL10162 CYBL10163	PRoCTM-BLE 128K
CYBL10461 CYBL10462 CYBL10463	PRoCTM-BLE 128K
CYBL10561 CYBL10562 CYBL10563	PRoCTM-BLE 128K
CYBL10999	PRoCTM-BLE 128K
CY8C4128 CY8C4248	PSoC® 4 BLE 256K
CYBL10573	PRoCTM-BLE 256K
CY8C3244 CY8C3245 CY8C3246 CY8C3444	Automotive PSoC® 3
CY8C3445 CY8C3446 CY8C3645 CY8C3646 CY8C3665 CY8C3666 CY8C3846 CY8C3866	Automotive PSoC® 3
CY8C3244 CY8C3245 CY8C3246 CY8C3444	PSoC® 3
CY8C3445 CY8C3446 CY8C3665 CY8C3666 CY8C3846 CY8C3865 CY8C3866 CY8C3MFIDOCK CY8C3USBAUDIO	PSoC® 3
CY8C5267 CY8C5268 CY8C5287 CY8C5288 CY8C5467 CY8C5468 CY8C5488 CY8C5666 CY8C5667 CY8C5668 CY8C5688 CY8C5866 CY8C5867 CY8C5868 CY8C5888	PSoC® 5LP
CY8CTMA1036 CY8CTMA460 CY8CTMA461 CY8CTMA768	Automotive True Touch® Gen4 Touchscreen Controller

QUALIFICATION COVERAGE RANGE

MARKETING PART NUMBER	DEVICE DESCRIPTION
CYTMA445A CYTMA525A CYTT21100 CYTT21401 CYTT21402 CYTT21403	True Touch® Gen6M Touchscreen Controller
CYTT21100 CYTT21401 CYTT21402 CYTT21403 CYTT31401 CYTT31702 CYTT31802 CYTT32302	True Touch® Gen6L Touchscreen Controller
CYAT81682 CYAT81685 CYAT81688	Automotive True Touch® Gen6XL Touchscreen Controller
CYFPA1I	True Touch® Fingerprint
CYPD1103 CYPD1104 CYPD1105 CYPD1120 CYPD1121 CYPD1122 CYPD1134	EZ-PDTM CCG1 USB Type-C PD Controller
CYPD2103 CYPD2104 CYPD2105 CYPD2119 CYPD2120 CYPD2134	EZ-PDTM CCG2 USB Type-C PD Controller
CY7C65210 CY7C65211 CY7C65213 CY7C65215 CY7C65217 CY7C65221	USB-Serial Bridge Controller
CY14B064 CY14E064 CY14MB064 CY14ME064	64Kb Serial nvSRAM
CY14B256 CY14E256	256Kb Serial nvSRAM
CY14B512	512Kb Serial nvSRAM
CY14B101 CY14E101	1Mb Serial nvSRAM
CY14V101	1Mb Quad SPI nvSRAM
CY14B256 CY14E256 CY14U256 CY14V256	256Kb Parallel nvSRAM
CY14101V CY14B101 CY14V101	1Mb Parallel nvSRAM
CY14B102NS	2Mb Parallel nvSRAM
CY14104V CY14B104 CY14V104	4Mb Parallel nvSRAM
CY14B108 CYATB108	8Mb Parallel nvSRAM
CY14B116 CY14V116 CY14E116	16Mb Parallel nvSRAM
CY27410F CY27410L	4-PLL Spread-Spectrum Clock Generator

Reliability Test Data

QTP #: 151907

Device	*Fab Lot #*	*Assembly Lot#*	*Test Loc*	*Yield*
SORT TEST: CORRELATION				
Sort Yield:				
8C24094AC	4446219 w2, w4, w5	N A	CMI-FAB25	Correlated
8A24094AC	4510997 w5, w6, w7	N A	CMI-FAB25	Correlated
8A24094AC	4506339 w6, w7, w8	N A	CMI-FAB25	Correlated
Bin Movement:				
8C24094AC	4446219 w2	N A	CMI-FAB25	Correlated
8A24094AC	4510997 w5	N A	CMI-FAB25	Correlated
8A24094AC	4506339 w6	N A	CMI-FAB25	Correlated
Fishers Exact:				
8C24094AC	4446219 w2, w4, w5	N A	CMI-FAB25	0.05
8A24094AC	4510997 w5, w6, w7	N A	CMI-FAB25	0.05
8A24094AC	4506339 w6, w7, w8	N A	CMI-FAB25	0.05

Reliability Test Data

QTP #: 171610

Device	*Fab Lot #*	*Assembly Lot#*	*Test Loc*	*Yield*
SORT TEST: CORRELATION				
Sort Yield:				
8A20680BB	3639013 w21	N A	FAB25	Correlated
Bin Movement:				
8A20680BB	3639013 w21	N A	FAB25	2

Document History Page

Document Title: QTP 171610: Cypress Test 25, Austin, Texas Sort Site for S8 Technology
Document Number: 002-19700

Rev.	ECN No.	Orig. of Change	Description of Change
**	5747717	HSTO	Initial Spec Release
*A	5874099	GKUS	1. Rearranged the nvSRAM parts as per the density interface. 2. Included CY14B101 in the 1Mb Serial nvSRAM row which was missed in the last revision.

Cypress Semiconductor Corporation
CY8C5xxx PSoC® 5 LP FAB25 Characterization Report

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2.0 Introduction

2.1 General Description

With its unique array of configurable blocks, PSoC® 5 LP is a true system level solution providing microcontroller unit (MCU), memory, analog, and digital peripheral functions in a single chip. The CY8C5xxx family offers a modern method of signal acquisition, signal processing, and control with high accuracy, high bandwidth, and high flexibility.

Features:

- Single cycle ARM Cortex-M3 CPU
  - DC to 80 MHz operation
  - Multiply and divide instructions
  - Flash program memory, up to 256 KB, 100,000 write cycles, 20 years retention, and multiple security features
  - 1-KB flash cache
  - Up to 32-KB flash error correcting code (ECC) or configuration storage
  - Up to 64 KB SRAM
  - Up to 2 KB electrically erasable programmable read-only memory (EEPROM), 1 M cycles, and 20 years retention
  - 24-channel direct memory access (DMA) with multilayer AHB bus access
  - Programmable chained descriptors and priorities
  - High bandwidth 32-bit transfer support

- Low voltage, ultra low-power
  - Wide operating voltage range: 0.5 V to 5.5 V
  - High efficiency boost regulator from 0.5-V input through 1.8-V to 5.0-V output
  - 1.9 mA at 3 MHz, 3.1 mA at 6 MHz, and 15.4 mA at 48 MHz
  - Low-power modes including:
  - 2- A sleep mode with real time clock and low-voltage detect (LVD) interrupt
  - 300-nA hibernate mode with RAM retention

- Versatile I O system
  - 46 to 72 I O (62 GPIOs, eight special input outputs (SIO), two USBIOs
  - Any GPIO to any digital or analog peripheral routability
  - LCD direct drive from any GPIO, up to 46 16 segments
  - CapSense® support from any GPIO
  - 1.2-V to 5.5-V I O interface voltages, up to four domains
  - Maskable, independent IRQ on any pin or port
  - Schmitt-trigger transistor-transistor logic (TTL) inputs
  - All GPIO configurable as open drain high low, pull-up pull-down, High Z, or strong output
  - Configurable GPIO pin state at power-on reset (POR)
  - 25 mA sink on SIO

- Digital peripherals
  - 20 to 24 programmable logic device (PLD) based universal digital blocks (UDB)
  - Full CAN 2.0b 16 Rx, 8 Tx buffers
  - Full-speed (FS) USB 2.0 12 Mbps using internal oscillator

  - Up to four 16-bit configurable timer, counter, and PWM blocks
  - 80 MHz, 24-bit fixed point digital filter block (DFB) to implement FIR and IIR filters

- Library of standard peripherals
  - 8-, 16-, 24-, and 32-bit timers, counters, and PWMs
  - Serial peripheral interface (SPI), universal asynchronous transmitter receiver (UART), and I2C
  - Many others available in catalog

- Library of advanced peripherals
  - Cyclic redundancy check (CRC)
  - Pseudo random sequence (PRS) generator
  - Local interconnect network (LIN) bus 2.0
  - Quadrature decoder

- Analog peripherals (1.71 V ≤ VDDA ≤ 5.5 V)
  - 1.024 V 0.1 internal voltage reference across –40 C to 125 C
  - Configurable delta-sigma ADC with 8- to 20-bit resolution
  - Up to two 12-bit SAR ADCs
  - Sample rates up to 187 ksps
  - Programmable gain stage: 0.25 to 16
  - 12-bit mode, 192 ksps, 66-dB signal to noise and distortion ratio (SINAD), 1-bit INL DNL
  - 16-bit mode, 48 ksps, 84-dB SINAD, 2-bit INL, 1-bit DNL
  - Up to four 8-bit, 8-Msps IDACs or 1-Msps VDACs
  - Four comparators with 95-ns response time
  - Up to four uncommitted opamps with 25-mA drive capability
  - Up to four configurable multifunction analog blocks. Example configurations are programmable gain amplifier (PGA), transimpedance amplifier (TIA), mixer, and sample and hold CapSense support.

- Programming, debug, and trace
  - JTAG (4-wire), serial wire debug (SWD) (2-wire), and single wire viewer (SWV) interfaces
  - Eight address and one data breakpoint
  - 4-KB instruction trace buffer
  - Bootloader programming supportable through I2C, SPI, UART, USB, and other interfaces

- Precision, programmable clocking
  - 3- to 62-MHz internal oscillator over full temperature and voltage range
  - 4- to 25-MHz crystal oscillator for crystal PPM accuracy
  - Internal PLL clock generation up to 67 MHz
  - 32.768-kHz watch crystal oscillator
  - Low-power internal oscillator at 1, 33, and 100 kHz

- Temperature and packaging
  - –40 C to 105 C degrees extended industrial temperature
  - 68-pin QFN, and 100-pin TQFP package options

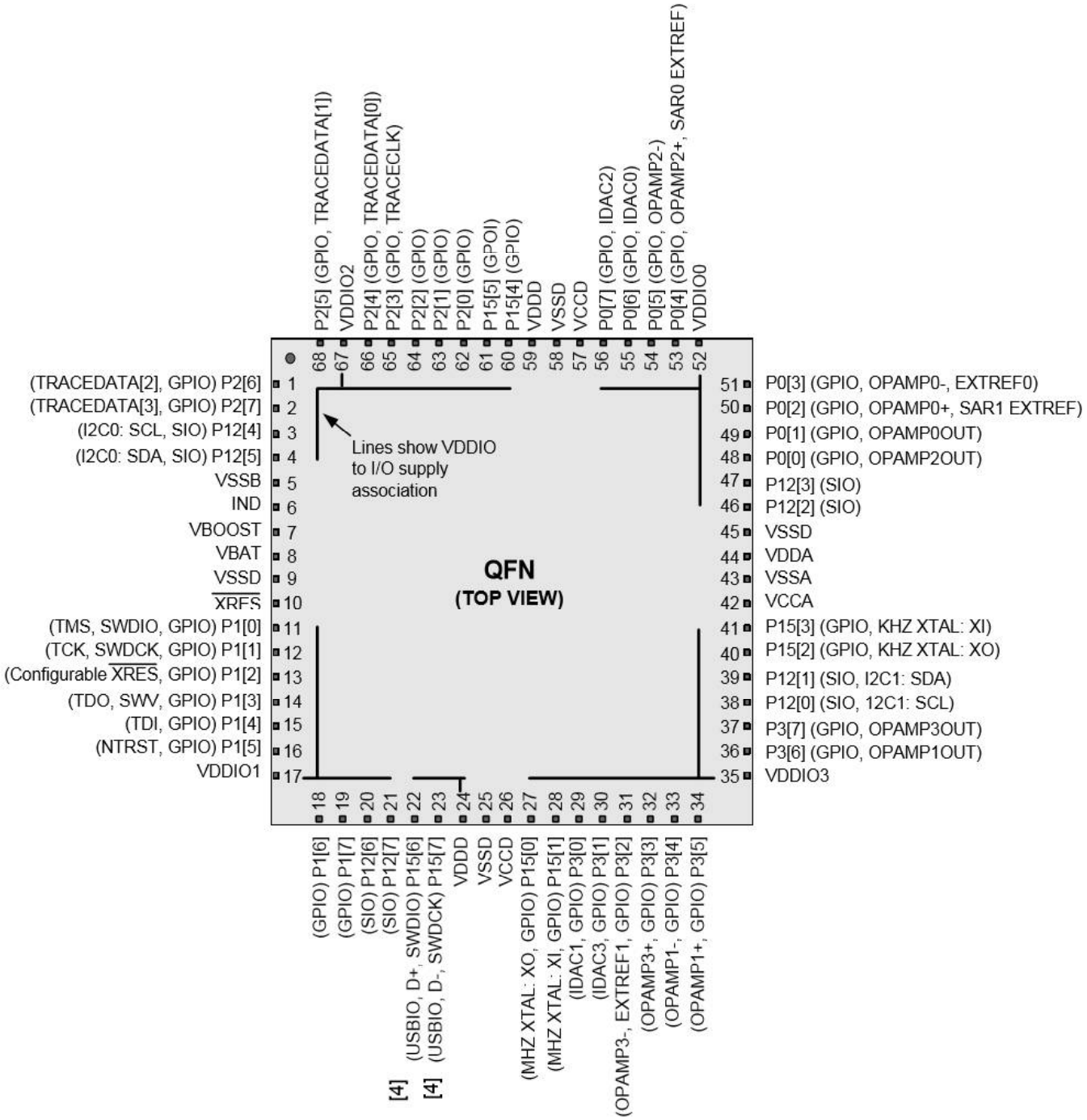

Figure3: 68-Pin QFN

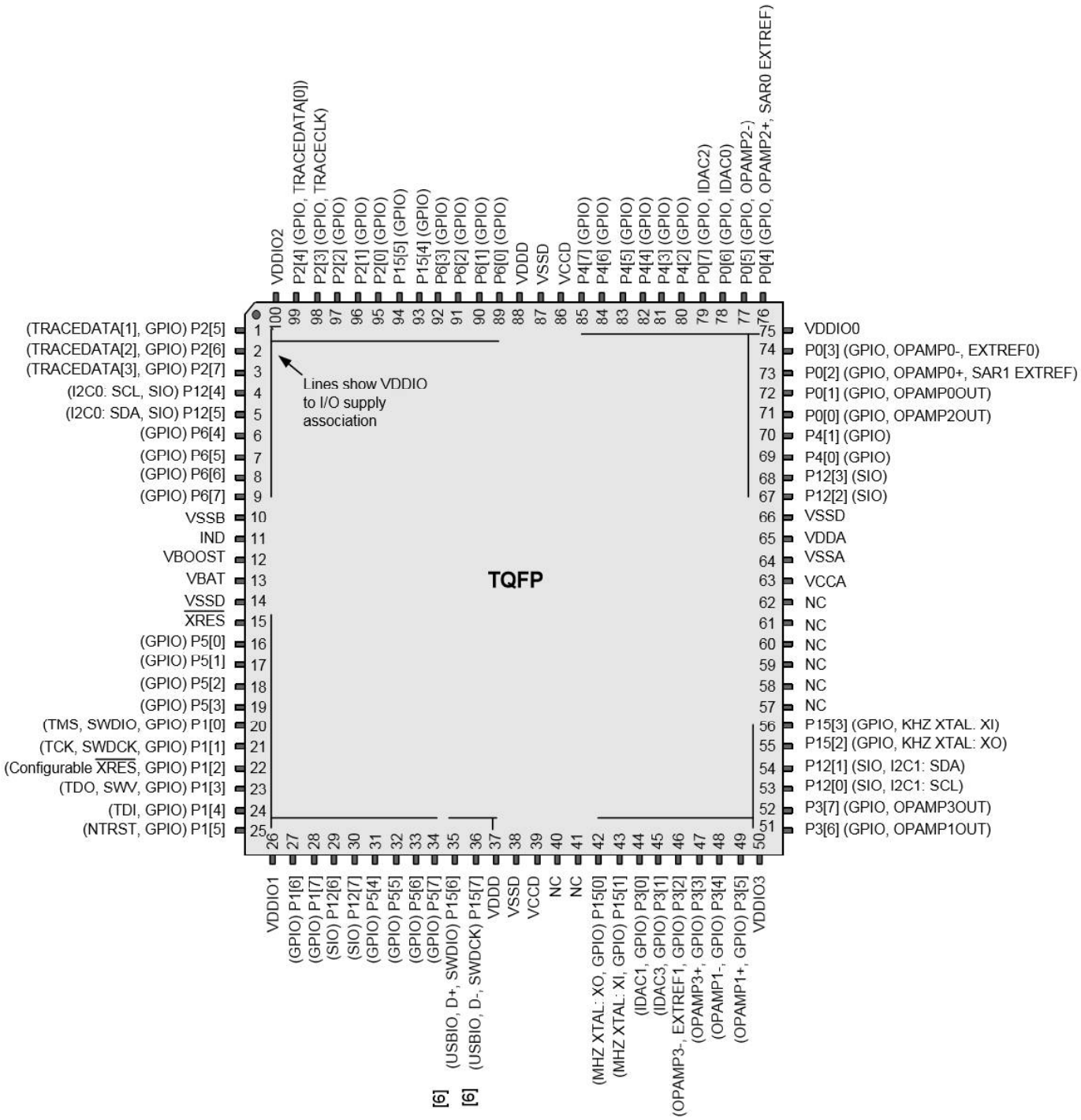

Figure4: 100-Pin TQFP

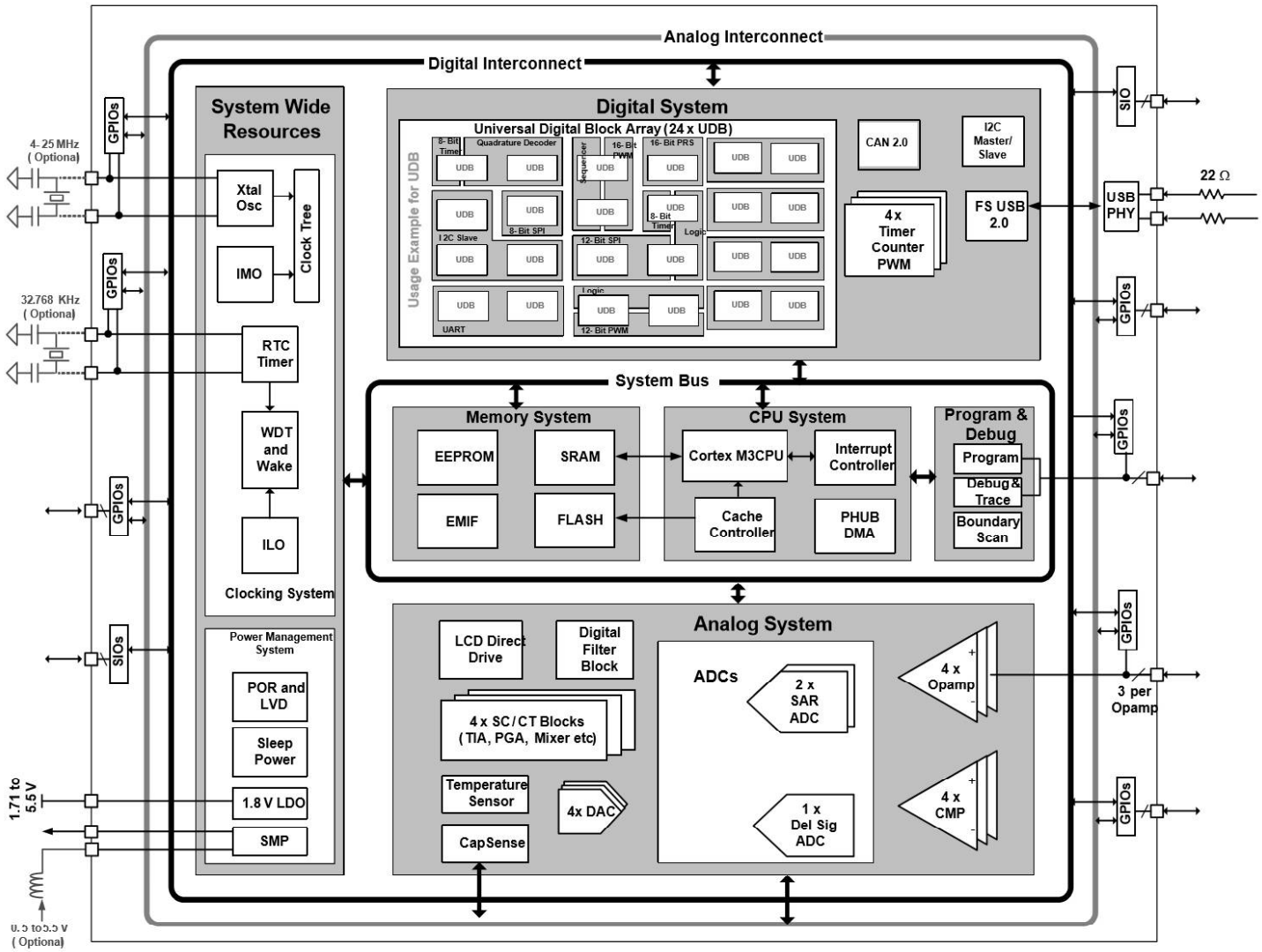

Figure5: Simplified Block Diagram

2.2 Datasheet

The **CY8C5XXXX** meets all datasheet specifications. The datasheet 001-84932 Rev L is available under NDA through your local Cypress sales representative.

2.3 Reference Documents and Application Notes

Cypress reference documents are available under NDA through your local Cypress sales representative.

001-84933 – PSoC® 5 LP: CY8C52LP Family Datasheet Programmable System-on-chip
001-84934 – PSoC® 5 LP: CY8C54LP Family Datasheet Programmable System-on-chip
001-84935 – PSoC® 5 LP: CY8C56LP Family Datasheet Programmable System-on-chip

2.4 Qualification Report

The **CY8C5XXXX** is qualified under QTP 162806. PSoC® 5 LP family product qualified using S8P12-10R technology.

3.0 Characterization Hardware and Setup

3.1 DC Measurement System and Hardware

Temperature Forcing System
The Temptronics Thermostream Advanced Temperature Source is used to force ambient industrial operating temperature -45 C, 105 C and 25 C.

Power Supply
Agilent E3631A used to supply operating voltage to multiple DUT as well as to measure drawn current.

Digital Multi Meter
HP 34410A was used to measure voltages at 10 NPLC configuration.

Oscilloscope
Tektronix DPO7104 Digital Phosphor Oscilloscope was used for all frequency, duty cycle, rise fall and delay measurements using Tektronix TAP2500 active probes.

Automatic Tester Equipment
The NEXTEST was used to for measurements of production compatible parameters.

3.2 Test Conditions

Characterization was done on following devices across voltage specified in Table-1 and Temperature conditions.

Assembly Lot 611711571
Fab Lot number 3708110
Wafer number 1, 2, 3 8

Power supply	Min	Nominal	Max	Units
VDDD (Core LDO Enabled)	3.00	3.30	5.50	V
VCCD = VDDD (Core LDO Bypassed)	1.71	1.80	1.95	V
VDDA (TX pump enabled)	3.00	3.30	4.70	V
VDDA = VCCTX (TX pump disabled)	3.00	3.30	5.50	V
Temperature	-45	25	105	°C

Table 1: Test Condition

4.0 Characterization Data

Only critical parameters were characterized on the ATE (IMO, V_{REF}) across temperature and voltage.

For all other parameters, new fab SORT data was reviewed and compared against the legacy data to confirm there is no change in performance in this fab transfer.

4.1 Absolute Maximum Ratings

Parameter	Description	Conditions	Min	Typ	Max	Units
V_{DDA}	Analog supply voltage relative to V_{SSA}		–0.5	–	6	V
V_{DDD}	Digital supply voltage relative to V_{SSD}		–0.5	–	6	V
V_{DDIO}	I/O supply voltage relative to V_{SSD}		–0.5	–	6	V
V_{CCA}	Direct analog core voltage input		–0.5	–	1.95	V
V_{CCD}	Direct digital core voltage input		–0.5	–	1.95	V
V_{SSA}	Analog ground voltage		V_{SSD} – 0.5	–	V_{SSD} + 0.5	V
V_{GPIO}[15]	DC input voltage on GPIO	Includes signals sourced by V_{DDA} and routed internal to the pin.	V_{SSD} – 0.5	–	V_{DDIO} + 0.5	V
V_{SIO}	DC input voltage on SIO	Output disabled	V_{SSD} – 0.5	–	7	V
		Output enabled	V_{SSD} – 0.5	–	6	V
V_{IND}	Voltage at boost converter input		0.5	–	5.5	V
V_{BAT}	Boost converter supply		V_{SSD} – 0.5	–	5.5	V
I_{VDDIO}	Current per V_{DDIO} supply pin		–	–	100	mA
I_{GPIO}	GPIO current		–30	–	41	mA
I_{SIO}	SIO current		–49	–	28	mA
I_{USBIO}	USBIO current		–56	–	59	mA
V_{EXTREF}	ADC external reference inputs	Pins P0[3], P3[2]	–	–	2	V
LU	Latch up current[16]		–140	–	140	mA
ESD_{HBM}	Electrostatic discharge voltage	Human body model	2000	–	–	V
ESD_{CDM}	ESD voltage	Charge device model	500	–	–	V

4.2 Internal Main Oscillator Frequency (IMO)

				Datasheet Spec Limits			Skywater Fab 4 Char Data			Fab25 Char Data		
Parameter	Description	Units	Condition	Min	Typical	Max	Min	Typical	Max	Min	Typical	Max
IMO Frequency	74.7 MHz	MHz		-7	-	7	70.5	74.2	77.8	69.8	74.3	78.5
	62.6 MHz			-7	-	7	60.2	63.1	65.9	61.1	63.8	66.2
	48 MHz			-5	-	5	46.3	48.0	49.6	45.9	48.0	49.6
	24 MHz			-4	-	4	23.7	24.0	24.9	23.4	24.0	24.9
	12 Mhz			-3	-	3	11.8	12.0	12.2	11.7	12.0	12.3
	6 Mhz			-2	-	2	5.9	6.1	6.1	5.9	6.1	6.1
	3 Mhz		0 °C to 70 °C	-1	-	1	2.99	3.00	3.01	3.01	3.00	3.02
			-40 °C to 105 °C	-1.5	-	2	2.97	3.00	3.02	2.99	3.00	3.03

Table 2: IMO Summary over Voltage and Temperature

4.3 Reference Voltage (V_{REF})

				Datasheet Spec Limits			Skywater Fab 4 Char Data			Fab25 Char Data		
Parameter	Description	Units	Condition	Min	Typical	Max	Min	Typical	Max	Min	Typical	Max
VREF	Initial Measurement of Precision reference 1.024V (+/- 0.1%)	mV	1.80V,30C	1023	1024	1025	1023.602	1023.960	1024.344	1023.629	1023.987	1024.371

Table 3: V_{REF} Summary over Voltage and Temperature

5.0 AC Characterization : N/A

6.0 PN Characterization : N/A

Document History Page

Rev.	ECN No.	Orig. of Change	Description of Change
**			**CY8C5XXX PSoC® 5 LP FAB25 Characterization Report**

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