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

PRODUCT CHANGE NOTIFICATION

PCN: PCN183803 **Date:** December 10, 2018

Subject: Qualification of Fab 25 with the Copper (Cu) BEOL Process and Test 25 as an Additional Wafer Sort Site for the MBR3, PSoC® 4000 and PSoC® 4100S Product Families

To: PCN Coordinator PCN Coordinator
FUTURE
PCN.System@Future.ca

Change Type: Major

Description of Change:
Cypress announces the qualification of Fab 25 in Austin, Texas with the Copper (Cu) Backend of Line (BEOL) process and Test 25 as an additional wafer sort site for the MBR3, PSoC® 4000 and PSoC® 4100S product families.

The Aluminum (Al) BEOL process uses Tungsten (W) plugs and Ti/TiN/Al metallization with subtractive patterning to create the metal interconnect layers. The Cu BEOL process converts the underlying metal interconnect layers from W plugs to Cu plugs and from Ti/TiN/Al metallization with subtractive patterning to Cu damascene with Ta/TaN barriers.

These qualifications are part of the flexible manufacturing initiatives which allow Cypress to meet its delivery commitments in dynamic and changing market conditions.

Benefit of Change:
Qualification of alternate manufacturing processes 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: 164
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:
The Cu BEOL process and sort site have been qualified through a series of tests documented in Qualification Test Plan (QTP) reports 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 Report Number	Qualification
175110	CY8CMBR3XXX F25 Cu BEOL Qualification
183602	PSoC® 4000 Device Family F25 Cu BEOL Qualification
180417	PSoC® 4100S Device Family F25 Cu BEOL Qualification
171610	T25 Sort Site Qualification

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 with the Cu BEOL process 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 Corporation
CY8C4013/14 PSoC® 4000
FAB25 CHARACTERIZATION REPORT

Design Engineering Director
Sreenivasa (Srinivasa Rao) Prerepa
rao@cypress.com

Product Engineering Director
Toan Ong
tto@cypress.com

Product Engineer
Vincent Uy
vau@cypress.com

Applications Engineer
Jaya Kathuria
xkj@cypress.com

Marketing Engineer
Steven Chen
stvc@cypress.com

www.cypress.com

198 Champion Ct.
San Jose, CA 95134 USA

Tel: (408) 943 2600
Fax: (408) 943 4730

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2.0 Introduction

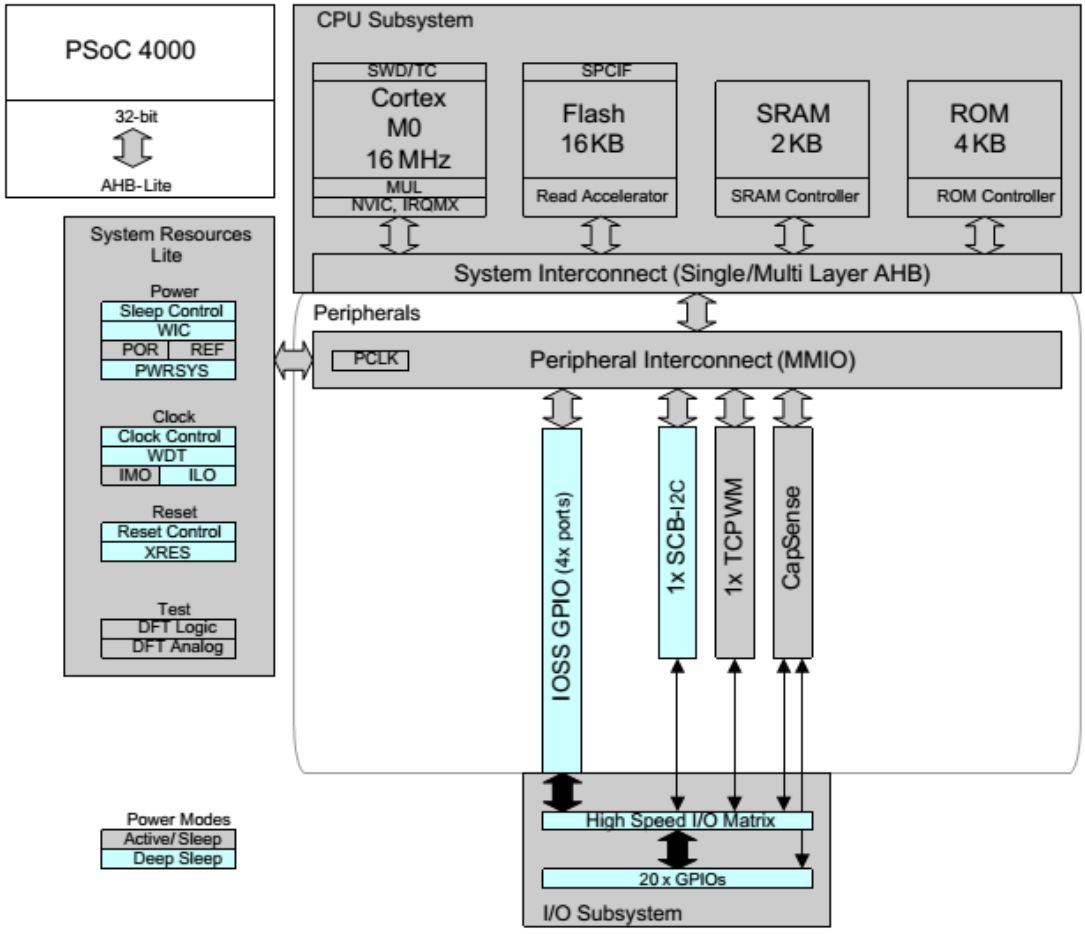
2.1 General Description

PSoC® 4 is a scalable and reconfigurable platform architecture for a family of programmable embedded system controllers with an ARM® Cortex™-M0 CPU. It combines programmable and reconfigurable analog and digital blocks with flexible automatic routing. The PSoC 4000 product family is the smallest member of the PSoC 4 platform architecture. It is a combination of a microcontroller with standard communication and timing peripherals, a capacitive touch-sensing system (CapSense) with best-in-class performance, and general-purpose analog. PSoC 4000 products will be fully upward compatible with members of the PSoC 4 platform for new applications and design needs.

Feature set summary:

- **32-bit MCU Subsystem**
  - 16-MHz ARM Cortex-M0 CPU
  - Up to 16 KB of flash with Read Accelerator
  - Up to 2 KB of SRAM
- **Programmable Analog**
  - Two current DACs (IDACs) for general-purpose or capacitive sensing applications
  - One low-power comparator with internal reference
- **Low Power 1.71-V to 5.5-V operation**
  - Deep Sleep mode with wake-up on interrupt and I2C address detect
- **Capacitive Sensing**
  - Cypress CapSense Sigma-Delta (CSD) provides best-in-class signal-to-noise ratio (SNR) and water tolerance
  - Automatic hardware tuning (SmartSense™) over a sensor range of 5 pF to 45 pF
  - Cypress-supplied software component makes capacitive sensing design easy
- **Serial Communication**
  - Multi-master I2C block with the ability to do address matching during Deep Sleep and generate a wake-up on match
- **Timing and Pulse-Width Modulation**
  - One 16-bit timer/counter/pulse-width modulator (TCPWM) block
  - Center-aligned, Edge, and Pseudo-Random modes
  - Comparator-based triggering of Kill signals for motor drive and other high-reliability digital logic applications
- **Up to 20 Programmable GPIO Pins**
  - 28-pin SSOP, 24-pin QFN, 16-pin SOIC, 16-pin QFN, 16 ball WLCSP, and 8-pin SOIC packages
  - GPIO pins on Ports 0, 1, and 2 can be CapSense or have other functions
  - Drive modes, strengths, and slew rates are programmable
- **PSoC Creator Design Environment**
  - Integrated Development Environment (IDE) provides schematic design entry and build (with analog and digital automatic routing)
  - Applications Programming Interface (API) component for all fixed-function and programmable peripherals
- **Industry-Standard Tool Compatibility**
  - After schematic entry, development can be done with ARM-based industry-standard development tools

Figure 2. Block Diagram



2.2 Datasheet

The CY8C4013/14 meets all datasheet specifications. The datasheet 001-89638 Rev *E is available under NDA through your local Cypress sales representative

2.3 Reference Documents and Application Notes

Cypress provides a wealth of data at www.cypress.com to help you to select the right PSoC device for your design, and to help you to quickly and effectively integrate the device into your design. For a comprehensive list of resources, see the knowledge base article KBA86521, How to Design with PSoC 3, PSoC 4, and PSoC 5LP. Following is an abbreviated list for PSoC 4:

■ Overview: PSoC Portfolio, PSoC Roadmap
■ Product Selectors: PSoC 1, PSoC 3, PSoC 4, PSoC 5LP in addition, PSoC Creator includes a device selection tool.
■ Application notes: Cypress offers many PSoC application notes covering a broad range of topics, from basic to advanced level.
Recommended application notes for getting started with PSoC 4 are:
- ❒ AN79953: Getting Started with PSoC 4
- ❒ AN88619: PSoC 4 Hardware Design Considerations
- ❒ AN86439: Using PSoC 4 GPIO Pins
- ❒ AN57821: Mixed Signal Circuit Board Layout
- ❒ AN81623: Digital Design Best Practices
- ❒ AN73854: Introduction to Bootloaders
- ❒ AN89610: ARM Cortex Code Optimization

■ Technical Reference Manual (TRM) is in two documents:
- ❒ Architecture TRM details each PSoC 4 functional block.
- ❒ Registers TRM describes each of the PSoC 4 registers.

■ Development Kits:
- ❒ CY8CKIT-040, PSoC 4000 Pioneer Kit, is an easy-to-use and inexpensive development platform with debugging capability. This kit includes connectors for Arduino™ compatible shields and Digilent® Pmod™ daughter cards.
- ❒ The MiniProg3 device provides an interface for flash programming and debug.

2.4 Qualification Report

The PSoC4A-S0 device CY8C4013/14 is qualified under QTP # 183602

3.0 Characterization Hardware and Setup

3.1 DC Measurement System and Hardware

Temperature Forcing System
The Temptronics 4310 Precision Temperature Forcing System is used to force ambient/industrial/automotive operating temperature range is -45°C, 105, 135°C and 25°C.

Power Supply
NIPXIe 4140- 4 channels SMU used to supply operating voltage to multiple DUT as well as to measure drawn current.

Digital Multi Meter
NI PXI4070 61/2 digit multi meter was used to measure voltages at 10 NPLC configuration.

Clock Input
Tektronix AFG 3252 Arbitrary Function Generator was used to input clock to the device and as an interrupt generator

Oscilloscope
Tektronix DPO7254 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 and temperature conditions.
FAB: Spansion FAB25

Table 1: Test Condition

Supply Voltage & Temperature	Min	Typical	Max
VDD (V)	1.8	3.3	5.51
VCC (V)	1.71 (Regulator Bypassed)	1.8 (Regulator Bypassed)	1.89 (Regulator Bypassed)
Temperature (°C)	-45	25	105

4.0 Characterization Data

4.1 DC Specifications

			CY8C4013/14 DataSheet				SKY Water Char Data			FAB25 Al Char Data			FAB25 Cu Char Data		
ID	Parameter	Description & Condition	Spec Min	Spec Typ	Spec Max	Units	Char Min	Char Typ	Char Max	Char Min	Char Typ	Char Max	Char Min	Char Typ	Char Max
SID53	VDDD	Power supply input voltage (Regulator Enable)	1.8	-	5.5	V	1.8	3.3	5.5	1.8	3.3	5.5	1.8	3.3	5.5
SID255	VDD	Power sup[ply input voltage (VCCD=VDD) (Reg Bypass)	1.71	-	1.89	V	1.71	1.8	1.89	1.71	1.8	1.89	1.71	1.8	1.89
SID54	VDDIO	VDDIO Domain Supply	1.71	-	VDD	V	1.71	-	5.5	1.71	-	5.5	1.71	-	5.5
SID55	CEFC	External Regulator Voltage Bypass Capacitor	-	0.1	-	µF	-	0.1	-	-	0.1	-	-	0.1	-
SID56	CEXC	Power supply Bypass Capacitor	-	1	-	µF	-	1	-	-	1	-	-	1	-
SID9	IDD5	Execute from flash; CPU at 6 MHz	-	2	2.85	mA	1.56	1.59	1.64	1.49	1.61	1.68	1.46	1.62	1.96
SID12	IDD8	Execute from flash; CPU at 12 MHz	-	3.2	3.75	mA	2.42	2.47	2.53	2.21	2.42	2.52	2.30	2.48	2.85
SID16	IDD11	Execute from flash; CPU at 16 MHz	-	4	4.5	mA	3.03	3.08	3.16	2.88	3.03	3.14	2.83	3.09	3.44
SID25	IDD20A	I2C wakeup, WDT on. 6 MHz	-	1.1	-	mA	0.9	0.92	0.96	0.94	0.98	1.05	0.832	0.874	0.917
SID25A	IDD20	I2C wakeup, WDT on. 12 MHz	-	1.4	-	mA	1.11	1.14	1.18	1.15	1.2	1.26	1.038	1.086	1.137
SID31	IDD26	I2C wakeup and WDT on vdd 1.8 to 3.6 V	-	2.5	8.2	uA	1.5	1.59	1.65	1.38	1.47	1.54	1.38	1.47	1.54
SID34	IDD29	I2C wakeup and WDT on vdd 3.6 to 5.5 V	-	2.5	12	uA	1.75	1.81	1.85	1.62	1.71	1.78	1.62	1.71	1.78
SID37	IDD32	I2C wakeup and WDT on vdd 1.71 to 1.89 V	-	2.5	9.2	uA	1.42	1.55	1.65	1.38	1.46	1.52	1.38	1.46	1.52
SID307	IDD_XR	Supply current while XRES asserted	-	2	5	mA	0.61	0.62	0.63	0.61	0.64	0.67	0.61	0.64	0.67

4.2 AC Specifications

			CY8C4013/14 DataSheet				SKY Water Char Data			FAB25 Al Char Data			FAB25 Cu Char Data		
ID	Parameter	Description & Condition	Spec Min	Spec Typ	Spec Max	Units	Char Min	Char Typ	Char Max	Char Min	Char Typ	Char Max	Char Min	Char Typ	Char Max
SID48	FCPU	CPU frequency	DC	-	16	MHz	-	-	16	-	-	16	-	-	16
SID49	Tsleep	Wakeup from Sleep mode	-	0	-	uS	5.22	5.24	5.26	5.18	5.21	5.23	5.18	5.21	5.23
SID50	TDeepSleep	Wakeup from Deep Sleep mode	-	35	-	uS	19.32	19.79	20.26	17.57	17.59	17.61	17.57	17.59	17.61

4.3 DC I/O Port Specifications

			CY8C4013/14 DataSheet				SKY Water Char Data			FAB25 Al Char Data			FAB25 Cu Char Data		
ID	Parameter	Description & Condition	Spec Min	Spec Typ	Spec Max	Units	Char Min	Char Typ	Char Max	Char Min	Char Typ	Char Max	Char Min	Char Typ	Char Max
SID57	VIH	Input voltage high threshold CMOS	0.7*VDD	-	-	V	0.5	0.6	0.6	0.55	0.64	0.64	0.54	0.57	0.62
SID58	VIL	Input voltage low threshold CMOS	-	-	0.3*VDD	V	0.4	0.5	0.5	0.37	0.38	0.48	0.42	0.47	0.50
SID241	VIH	LVTTL input, V_{DD} < 2.7 V	0.7*VDD	-	-	V	0.4	0.6	0.6	1.23	1.88	1.89	0.42	0.44	0.46
SID242	VIL	LVTTL input, V_{DD} < 2.7 V	-	-	0.3*VDD	V	0.4	0.4	0.5	1.06	1.06	1.73	0.49	0.52	0.55
SID243	VIH	LVTTL input, V_{DD} => 2.7 V	2	-	-	V	1.2	1.9	1.9	1.23	1.88	1.89	1.22	1.52	1.79
SID244	VIL	LVTTL input, V_{DD} => 2.7 V	-	-	0.8	V	1	1	1.7	1.06	1.06	1.73	1.17	1.43	1.70
SID59	VOH	Output voltage high level 4mA, 3.3 VDDD	VDD-0.6	-	-	V	0.1	0.2	0.2	0.15	0.25	0.26	0.14	0.18	0.23
SID60	VOH	Output voltage high level 1mA, 1.8 VDDD	VDD-0.5	-	-	V	0.1	0.1	0.1	0.04	0.11	0.12	0.04	0.07	0.10
SID61	VOL	Output voltage low level 4mA, 1.8 VDDD	-	-	0.6	V	0.1	0.2	0.2	0.07	0.08	0.11	0.06	0.10	0.15
SID62	VOL	Output voltage low level 10mA, 3.3 VDDD	-	-	0.6	V	0.1	0.1	0.1	0.04	0.06	0.08	0.11	0.14	0.18
SID62A	VOL	Output voltage low level 3mA, 3.3 VDDD	-	-	0.4	V	0.1	0.1	0.1	0.02	0.04	0.06	0.10	0.12	0.14
SID63	RPULLUP	Pull-up resistor	3.5	5.6	8.5	kΩ	4.6	4.6	5.7	4.85	4.94	5.67	4.69	5.07	5.58
SID64	RPULLDOWN	Pull-down resistor	3.5	5.6	8.5	kΩ	4.6	4.7	5.6	4.93	5.01	5.81	4.63	5.02	5.49
SID65	IIL	Input leakage current (absolute value)	-	-	2	nA	0	0.05	1	0	0.05	1	0	0.05	1
SID66	CIN	Input capacitance	-	-	7	pF	1.69	2.65	5.33	1.73	-	3.23	2.1	3.15	4.3
SID67	VHYSTTL	Input hysteresis LVTTL	25	40	-	mV	148	158	194	156	162	205	240	291.15	350
SID68	VHYSCMOS	Input hysteresis CMOS < 4.5 VDDD	0.05*VDD	-	-	mV	101	200	210	158	175	194	110	-	200
SID69A	ITOT_GPIO	Maximum total source or sink chip current	-	-	85	mA	-	-	85	-	-	85	-	-	85

4.4 AC I/O Specifications

			CY8C4013/14 DataSheet				SKY Water Char Data			FAB25 Al Char Data			FAB25 Cu Char Data		
ID	Parameter	Description & Condition	Spec Min	Spec Typ	Spec Max	Units	Char Min	Char Typ	Char Max	Char Min	Char Typ	Char Max	Char Min	Char Typ	Char Max
SID70	TRISEF	Rise time in fast strong mode	2	-	12	ns	3.2	5	9.3	3.02	3.85	5.85	3.02	3.85	5.85
SID71	TFALLF	Fall time in fast strong mode	2	-	12	ns	3.7	3.8	6.1	2.11	2.53	4.37	2.11	2.53	4.37
SID72	TRISES	Rise time in slow strong mode	10	-	60	ns	29.3	30	42.6	20.72	22.34	35.72	20.72	22.34	35.72
SID73	TFALLS	Fall time in slow strong mode	10	-	60	ns	31.9	3.8	47.1	25.66	34.52	40.2	25.66	34.52	40.2
SID74	FGPIOUT1	GPIO FOUT fast strong mode 3.3 <= 5.5 VDDD	-	-	16	MHz	Validated with 20% margin to spec			Validated with 20% margin to spec			Validated with 20% margin to spec		
SID75	FGPIOUT2	GPIO FOUT fast strong mode 1.7 <= 3.3 VDDD	-	-	16	MHz	Validated with 20% margin to spec			Validated with 20% margin to spec			Validated with 20% margin to spec		
SID76	FGPIOUT3	GPIO FOUT Slow strong mode 3.3 <= 5.5 VDDD	-	-	7	MHz	Validated with 20% margin to spec			Validated with 20% margin to spec			Validated with 20% margin to spec		
SID245	FGPIOUT4	GPIO FOUT Slow strong mode 1.7 <= 3.3 VDDD	-	-	3.5	MHz	Validated with 20% margin to spec			Validated with 20% margin to spec			Validated with 20% margin to spec		
SID246	FGPIOIN	GPIO input operating frequency VDDIO 10 - 90 %	-	-	16	MHz	Validated with 20% margin to spec			Validated with 20% margin to spec			Validated with 20% margin to spec		

4.5 XRES DC Specifications

			CY8C4013/14 DataSheet				SKY Water Char Data			FAB25 Al Char Data			FAB25 Cu Char Data		
ID	Parameter	Description & Condition	Spec Min	Spec Typ	Spec Max	Units	Char Min	Char Typ	Char Max	Char Min	Char Typ	Char Max	Char Min	Char Typ	Char Max
SID77	XRES_VIH	Input voltage high threshold CMOS	-	-	0.7	%VDD	0.53	0.6	0.61	0.54	0.59	0.59	0.53	0.63	0.64
SID78	XRES_VIL	Input voltage low threshold CMOS	0.3	-	-	%VDD	0.44	0.47	0.49	0.47	0.49	0.5	0.38	0.40	0.51
SID79	XRES_RPU	Pull-up resistor	3.5	5.6	8.5	kΩ	5.04	5.16	5.44	4.93	5.08	5.38	4.83	5.11	5.41
SID80	Cpin	Input capacitance	-	-	7	pF	1.9	2.07	2.2	1.7	1.83	1.9	2.4	3.3	3.9
SID81	XRES_Hyst	Input voltage hysteresis	-	0.05	-	%VDD	0.06	0.07	0.08	0.05	0.06	0.07	0.07	-	0.08

4.6 XRES AC Specifications

			CY8C4013/14 DataSheet				SKY Water Char Data			FAB25 Al Char Data			FAB25 Cu Char Data		
ID	Parameter	Description & Condition	Spec Min	Spec Typ	Spec Max	Units	Char Min	Char Typ	Char Max	Char Min	Char Typ	Char Max	Char Min	Char Typ	Char Max
SID83	T_Reset_Width	Reset pulse width	5	-	-	us	0.14	0.14	0.14	0.14	0.15	0.15	0.14	0.1536	0.164
BID194	T_Reset_Wake	Wake-up time from reset release	-	-	3	ms	2.7	2.74	2.76	2.64	2.68	2.71	2.64	2.68	2.71

4.7 CSD and IDAC Block Specifications

			CY8C4013/14 DataSheet				SKY Water Char Data			FAB25 Al Char Data			FAB25 Cu Char Data		
ID	Parameter	Description & Condition	Spec Min	Spec Typ	Spec Max	Units	Char Min	Char Typ	Char Max	Char Min	Char Typ	Char Max	Char Min	Char Typ	Char Max
SYS.PER3	VDD_RIPPLE	Max allowed ripple on power supply, DC to 10MHz	-	-	±50	mV	-	±50	-	-	±50	-	-	±50	-
SYS.PER16	VDD_RIPPLE_1.8	Max allowed ripple on power supply, DC to 10MHz	-	-	±25	mV	-	±25	-	-	±25	-	-	±25	-
SID.CSD15	VREFHI	Reference Buffer Output	1100		1300	mV	1199.75	1209.56	1222.62	1196.88	1213.55	1227.38	1149.88	1199.16	1228.50
SID.CSD16	IDAC1IDD	IDAC1 (8-bits) block current	-	-	1125	µA	877.67	879	880.06	863.19	874.43	882.07	863.19	874.43	882.07
SID.CSD17	IDAC2IDD	IDAC2 (7-bits) block current	-	-	1125	µA	509.8	512.29	514.85	505.42	512.25	518.81	505.42	512.25	518.81
SID308	VCSD	Voltage range of operation	1.71	-	5.5	V	-	5.5	-	-	5.5	-	-	5.5	-
SID308A	VCOMPIDAC	Voltage compliance range of IDAC	0.8	-	VDD-0.8	V	-	VDD-0.8	-	-	VDD-0.8	-	-	VDD-0.8	-
SID309	IDAC_DNL8	DNL for 8-bit resolution	-1	-	1	LSB	0.15	0.22	0.35	0.14	0.22	0.38	-0.16	0.07	0.25
SID310	IDAC_INL8	INL for 8-bit resolution	-3	-	3	LSB	0.2	0.35	0.6	0.19	0.34	0.83	-1.28	0.05	0.56
SID311	IDAC_DNL7	DNL for 7-bit resolution	-1	-	1	LSB	0.04	0.13	0.24	0.07	0.15	0.3	-0.18	0.09	0.38
SID312	IDAC_INL7	INL for 7-bit resolution	-3	-	3	LSB	0.08	0.18	0.44	0.09	0.2	0.45	-1.07	0.08	0.65
SID313	SNR	Ratio of counts of finger to noise.	5	-	-	Ratio	-	5	-	-	5	-	-	5	-
SID314	Idac1_crt1	Output current of IDAC1 (8 bits) in high range	-	612	-	uA	-628.5	-614.23	-606.13	-626.63	-615.88	-606.06	-639.188	622.0069	641.75
SID314A	Idac1_crt2	Output current of IDAC1(8 bits) in Low range	-	306	-	uA	-313.06	-306.75	-302	-313.31	-307.74	-302.31	-325.38	311.52	321.50
SID315	Idac2_crt1	Output current of IDAC1 (7 bits) in high range	-	304.8	-	uA	-312.25	-306.67	-301.81	-312.75	-307.45	-303.13	-321.5	310.75	321.0625
SID315A	Idac2_crt2	Output current of IDAC1(7 bits) in Low range	-	152.4	-	uA	-155.5	-153.1	-150.38	-156.25	-153.57	-150.94	-163.625	155.7743	160.6875
SID320	IDACOFFSET	All zeroes input	-1	-	1	uA/LSB	0	0	0	0	0	0	0	0	0
SID321	IDACGAIN	Full-scale error less offset	-10	-	10	%	0	0.68	2.31	0.02	0.73	2.39	0.02	0.73	2.39
SID322	IDAC_MISMATCH7	Mismatch between IDACs	-7	-	7	LSB	-1.77	-0.19	3.23	-2.71	0.01	3.28	-2.71	0.01	3.28
SID323	IDACSET8	Settling time to 0.5 LSB for 8-bit IDAC	-	-	10	µs	0.42	0.42	0.43	0.41	0.42	0.42	0.41	0.42	0.42
SID324	IDACSET7	Settling time to 0.5 LSB for 7-bit IDAC	-	-	10	µs	0.47	0.49	0.51	0.73	0.73	0.74	0.73	0.73	0.74
SID325	CMOD	External modulator capacitor.	-	2.2	-	nF	-	2.2	-	-	2.2	-	-	2.2	-

4.8 TCPWM Specifications

			CY8C4013/14 DataSheet				SKY Water Char Data			FAB25 Al Char Data			FAB25 Cu Char Data		
ID	Parameter	Description & Condition	Spec Min	Spec Typ	Spec Max	Units	Char Min	Char Typ	Char Max	Char Min	Char Typ	Char Max	Char Min	Char Typ	Char Max
SIDTCPWM1	ITCPWM1	Block current consumption at 3 MHz	-	-	45	uA	22.82	23.52	24.09	23.56	24.21	24.51	23.56	24.21	24.51
SIDTCPWM2	ITCPWM2	Block current consumption at 8 MHz	-	-	145	uA	63.75	78.99	97.5	52.5	75.52	100	52.5	75.52	102.5
SIDTCPWM2A	ITCPWM3	Block current consumption at 16 MHz	-	-	160	uA	43.75	61.09	78.75	32.5	57.97	81.25	32.5	57.97	81.25
SIDTCPWM3	TCPWMFREQ	Operating Frequency at 16 MHz	-	-	16	MHz	-	-	16	-	-	16	-	-	16

4.9 Fixed I²C DC Specifications

			CY8C4013/14 DataSheet				SKY Water Char Data			FAB25 Al Char Data			FAB25 Cu Char Data		
ID	Parameter	Description & Condition	Spec Min	Spec Typ	Spec Max	Units	Char Min	Char Typ	Char Max	Char Min	Char Typ	Char Max	Char Min	Char Typ	Char Max
SID149	II2C1	Block current consumption at 100 kHz	-	-	25	uA	12.96	15.58	17.66	15.15	15.4	15.77	15.15	15.4	15.77
SID150	II2C2	Block current consumption at 400 kHz	-	-	135	uA	20.86	21.52	23.72	21.04	21.5	22.27	21.04	21.5	22.27

4.10 Fixed I²C AC Specifications

			CY8C4013/14 DataSheet				SKY Water Char Data			FAB25 Al Char Data			FAB25 Cu Char Data		
ID	Parameter	Description & Condition	Spec Min	Spec Typ	Spec Max	Units	Char Min	Char Typ	Char Max	Char Min	Char Typ	Char Max	Char Min	Char Typ	Char Max
SID153	FI2C1	Bit rate	25	135	400	KHz	-	-	400	-	-	400	-	-	400

4.11 SWD Interface Specifications

			CY8C4013/14 DataSheet				SKY Water Char Data			FAB25 Al Char Data			FAB25 Cu Char Data		
ID	Parameter	Description & Condition	Spec Min	Spec Typ	Spec Max	Units	Char Min	Char Typ	Char Max	Char Min	Char Typ	Char Max	Char Min	Char Typ	Char Max
SID213	F_SWDCLK	SWDCLK ≤ 1/3 CPU CLOCK FREQUENCY	14	-	-	MHz	19.6	20.87	21.73	20	20.9	21.74	16.13	18.79	22.73
SID214	F_swdclk2	SWDCLK ≤ 1/3 CPU CLOCK FREQUENCY	7	-	-	MHz	9.25	10.56	11.49	11.24	11.59	11.9	10.75	12.48	14.08
SID215	T_SWDI_HOLD	T = 1/f SWDCLK	-	-	25	% of T	1.1	1.36	1.85	-0.9	-0.66	-0.5	-0.60	-0.27	0.10
SID216	T_SWDI_SETUP	T = 1/f SWDCLK	-	-	25	% of T	-2.45	-1.94	-1.45	-0.3	-0.02	0.25	-1.15	6.02	15.70
SID217	T_SWDO_VALID	T = 1/f SWDCLK	-	-	50	% of T	31	35.1	41.5	28.5	30.42	32	1.05	10.58	24.15
SID217A	T_SWDO_HOLD	T = 1/f SWDCLK	1	-	-	ns	18.2	22.57	26.95	16.1	17.56	21	2.50	17.13	35.00

4.12 ILO Specifications

			CY8C4013/14 DataSheet				SKY Water Char Data			FAB25 Al Char Data			FAB25 Cu Char Data		
ID	Parameter	Description & Condition	Spec Min	Spec Typ	Spec Max	Units	Char Min	Char Typ	Char Max	Char Min	Char Typ	Char Max	Char Min	Char Typ	Char Max
SID237	ILO	ILO frequency range	20	-	80	KHz	35.15	46.52	52.49	35.84	43.02	47.51	40.90	46.84	52.22

Document History Page

Rev.	ECN No.	Orig. of Change	Description of Change
**		VSD	CY8CY4013/14 FAB25 Characterization Report

Sales, Solutions, and Legal Information

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Cypress Semiconductor
Product Qualification Report

QTP#183602 VERSION**
September 2018

PSoC® 4000 Device Family S8PF-10R, Fab25 (Cu BEOL Interconnect)	
CY8C4013 **CY8C4014**	**Programmable System-on-Chip (PSoC)**

FOR ANY QUESTIONS ON THIS REPORT, PLEASE CONTACT
reliability@cypress.com or via a CYLINK CRM CASE

Prepared By:
Honesto Sintos

Reliability Engineer

Reviewed By:
Sandhya Chandrashekhar

Reliability Principal Engineer

Approved By:
David Hoffman
Reliability Director

PACKAGE/PRODUCT QUALIFICATION HISTORY

QTP Number	Description of Qualification Purpose	Date
151008	Qualification of S8* Technology in Fab25 Using TSG6M Device (AL BEOL Interconnect)	Dec 2015
151403	Qualification of PSoC® 4100 and PSoC® 4200 Device, S8PF-10R Technology in Fab25 (AL BEOL Interconnect)	Dec 2015
151303	Qualification of CapSense® MBR3 Device, S8PF-10R Technology in Fab25 (AL BEOL Interconnect)	Dec 2015
160401	Qualification of TrueTouch® Fingerprint Device, S8PFHD-10R Technology in Fab25 (AL BEOL Interconnect)	May 2016
160301	Qualification of TrueTouch® Gen6XL Touchscreen Controller Device, S8SPF-10P Technology in Fab25 (AL BEOL Interconnect)	Jun 2016
160803	Qualification of PSoC® 4000S Device, S8PFHD-10R Technology in Fab25 (AL BEOL Interconnect)	Jun 2016
160207	Qualification of PSoC3 Leopard T06, S8P12-10P Technology in Fab25 (AL BEOL Interconnect)	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
183602	Qualification of PSoC® 4000Device Family S8PF-10R, Fab25 (Cu BEOL Interconnect)	Sept 2018

PRODUCT DESCRIPTION (for qualification)	
Qualification Purpose: Qualification of PSoC® 4000Device Family S8PF-10R, Fab25 (Cu BEOL Interconnect)	
Marketing Part #:	CY8C4013 / CY8C4014
Device Description:	Programmable System-on-Chip (PSoC)
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 / S8PF-10P

ALTERNATIVE FAB FACILITY SITE

FAB SITE	LOCATION	QTP NUMBER
HHGrace Fab3	Shanghai, China	142304

MAJOR PACKAGE INFORMATION USED IN THIS QUALIFICATION	
Package Designation:	LQ24A
Package Outline, Type, or Name:	QFN24L (4x4x0.6mm)
Mold Compound Name/Manufacturer:	GE 7470 / Nitto
Mold Compound Flammability Rating:	UL94 V-0
Mold Compound Alpha Emission Rate:	N/A (not low alpha mold compound)
Oxygen Rating Index: >28%	54%
Lead Frame Designation:	FMP
Lead Frame Material:	Pre-plated leadframe with base Copper
Substrate Material:	N/A
Lead Finish, Composition / Thickness:	NiPdAu
Die Backside Preparation Method/Metallization:	Backgrind
Die Separation Method:	Wafer Saw
Die Attach Supplier:	Henkel
Die Attach Material:	QMI-519
Bond Diagram Designation	001-88426
Wire Bond Method:	Thermosonic
Wire Material/Size:	CuPd / 0.8 mil (20um)
Thermal Resistance Theta JA °C/W:	38.01 CW (QFN24)
Package Cross Section Yes/No:	No
Assembly Process Flow:	001-87690M
Name/Location of Assembly (prime) facility:	CML-RA
MSL LEVEL	3
REFLOW PROFILE	260C

MAJOR PACKAGE INFORMATION USED IN THIS QUALIFICATION	
Package Designation:	LQ16A
Package Outline, Type, or Name:	QFN16L (3x3x0.6mm)
Mold Compound Name/Manufacturer:	G700 / Sumitomo
Mold Compound Flammability Rating:	UL 94 V=0 pass
Mold Compound Alpha Emission Rate:	N/A (not low alpha mold compound)
Oxygen Rating Index: >28%	54%
Lead Frame Designation:	FMP
Lead Frame Material:	Copper with Ag-Spot Plating
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:	FH900
Bond Diagram Designation	001-88428
Wire Bond Method:	Thermosonic
Wire Material/Size:	CuPd / 0.8mil (20um)
Thermal Resistance Theta JA °C/W:	49.6 C/W (QFN16)
Package Cross Section Yes/No:	No
Assembly Process Flow:	001-89390M
Name/Location of Assembly (prime) facility:	ASEK Taiwan (G)
MSL LEVEL	3
REFLOW PROFILE	260C

PACKAGE AVAILABILITY

PACKAGE	WIRE MATERIAL	ASSEMBLY SITE	QTP NUMBER
16/24-Pin QFN	CuPd	CML-Philippines (RA)	140804
16/24-Pin QFN	CuPd	ASEK-Taiwan (G)	134505
16/24-Pin QFN	CuPd	UTAC-Thailand (UT)	141704
8-Lead SOIC	CuPd	UTAC-Thailand (UT)	134513
16-Lead SOIC	CuPd	UTAC-Thailand (UT)	134506
28-Lead SSOP	CuPd	CML-Philippines (RA)	131804

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	-65^0C to 150^0C, 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	1,548 Devices	0	N/A	N/A	0 PPM 1
High Temperature Operating Life Long Term Failure Rate	550,000	0	0.7	170	10 FIT 2

1. EFR devices number is based on QTP#183602 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#183602 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 #: 183602

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: ACOUSTIC, MSL3							
CY8C4013 (8CP44334)	3817045	611814628	CML-RA	COMP	22	0	
STRESS: DATA RETENTION, PLASTIC, 175C							
CY8C4013 (8CP44334)	3817045	611814628	CML-RA	76	79	0	
CY8C4013 (8CP44334)	3817045	611814628	CML-RA	152	79	0	
STRESS: ENDURANCE (100K CYCLES)							
CY8C4013 (8CP44333C)	3817045	611815693	ASEK-G	CYCLING	80	0	
CY8C4013 (8CP44333C)	3817045	611815693	ASEK-G	168	80	0	
STRESS: HIGH TEMP DYNAMIC OPERATING LIFE-EARLY FAILURE RATE (150C, 2.07V, Vcc Max)							
CY8C4013 (8CP44333C)	3817045	611815693	CML-RA	48	1548	0	
STRESS: ESD-CHARGE DEVICE MODEL (500V)							
CY8C4013 (8CP44334)	3817045	611814628	CML-RA	500	9	0	
CY8C4013 (8CP44333C)	3817045	611815693	ASEK-G	500	9	0	
CY8C4013 (8C44332CB)	3817045	611817296	CML-RA	500	9	0	
CY8C4013 (8C44331CB)	3817045	611817297	CML-RA	500	9	0	
CY8C4013 (8CP44335C)	3817045	611814629	CML-RA	500	9	0	
STRESS: ESD-CHARGE DEVICE MODEL (750V)							
CY8C4013 (8CP44334)	3817045	611814628	CML-RA	750	3	0	
CY8C4013 (8CP44333C)	3817045	611815693	ASEK-G	750	3	0	
CY8C4013 (8C44332CB)	3817045	611817296	CML-RA	750	3	0	
CY8C4013 (8C44331CB)	3817045	611817297	CML-RA	750	3	0	
CY8C4013 (8CP44335C)	3817045	611814629	CML-RA	750	3	0	
STRESS: ESD-CHARGE DEVICE MODEL (1000V)							
CY8C4013 (8CP44334)	3817045	611814628	CML-RA	1000	3	0	
CY8C4013 (8CP44333C)	3817045	611815693	ASEK-G	1000	3	0	
CY8C4013 (8C44332CB)	3817045	611817296	CML-RA	1000	3	0	
CY8C4013 (8C44331CB)	3817045	611817297	CML-RA	1000	3	0	
CY8C4013 (8CP44335C)	3817045	611814629	CML-RA	1000	3	0	
STRESS: ESD-CHARGE DEVICE MODEL (1250V)							
CY8C4013 (8CP44334)	3817045	611814628	CML-RA	1250	3	0	
CY8C4013 (8CP44333C)	3817045	611815693	ASEK-G	1250	3	0	
CY8C4013 (8C44332CB)	3817045	611817296	CML-RA	1250	3	0	
CY8C4013 (8C44331CB)	3817045	611817297	CML-RA	1250	3	0	
CY8C4013 (8CP44335C)	3817045	611814629	CML-RA	1250	3	0	

Reliability Test Data

QTP #: 183602

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: ESD-CHARGE DEVICE MODEL (1500V)							
CY8C4013 (8CP44334)	3817045	611814628	CML-RA	1500	3	0	
CY8C4013 (8CP44333C)	3817045	611815693	ASEK-G	1500	3	0	
CY8C4013 (8C44332CB)	3817045	611817296	CML-RA	1500	3	0	
CY8C4013 (8C44331CB)	3817045	611817297	CML-RA	1500	3	0	
CY8C4013 (8CP44335C)	3817045	611814629	CML-RA	1500	3	0	
STRESS: ESD-CHARGE DEVICE MODEL (1750V)							
CY8C4013 (8CP44334)	3817045	611814628	CML-RA	1750	3	0	
CY8C4013 (8CP44333C)	3817045	611815693	ASEK-G	1750	3	0	
CY8C4013 (8C44332CB)	3817045	611817296	CML-RA	1750	3	0	
CY8C4013 (8C44331CB)	3817045	611817297	CML-RA	1750	3	0	
CY8C4014PVI7 (8CP44335C)	3817045	611814629	CML-RA	1750	3	0	
STRESS: ESD-CHARGE DEVICE MODEL (2000V)							
CY8C4013 (8CP44334)	3817045	611814628	CML-RA	2000	3	0	
CY8C4013 (8CP44333C)	3817045	611815693	ASEK-G	2000	3	0	
CY8C4013 (8C44332CB)	3817045	611817296	CML-RA	2000	3	0	
CY8C4013 (8C44331CB)	3817045	611817297	CML-RA	2000	3	0	
CY8C4013 (8CP44335C)	3817045	611814629	CML-RA	2000	3	0	
STRESS: ESD-HUMAN BODY MODEL PER JESD22, METHOD A114							
CY8C4013 (8CP44334)	3817045	611814628	CML-RA	1100	3	0	
CY8C4013 (8CP44333C)	3817045	611815693	ASEK-G	1100	3	0	
CY8C4013 (8CP44334)	3817045	611814628	CML-RA	2200	8	0	
CY8C4013 (8CP44333C)	3817045	611815693	ASEK-G	2200	3	0	
CY8C4013 (8CP44334)	3817045	611814628	CML-RA	3300	3	0	
CY8C4013 (8CP44334)	3817045	611815693	ASEK-G	3300	3	0	
CY8C4013 (8CP44334)	3817045	611814628	CML-RA	4000	3	0	
CY8C4013 (8CP44334)	3817045	611815693	ASEK-G	4000	3	0	
CY8C4013 (8CP44334)	3817045	611814628	CML-RA	5000	3	0	
CY8C4013 (8CP44334)	3817045	611815693	ASEK-G	5000	3	0	
CY8C4013 (8CP44334)	3817045	611814628	CML-RA	6000	3	0	
CY8C4013 (8CP44334)	3817045	611815693	ASEK-G	6000	3	0	
CY8C4013 (8CP44334)	3817045	611814628	CML-RA	7000	3	0	
STRESS: HIGH TEMP DYNAMIC OPERATING LIFE-LATENT FAILURE RATE (150C, 2.07V, Vcc Max)							
CY8C4013 (8CP44334)	3817045	3817045	611815693	ASEK-G	500	80	0
STRESS: PRESSURE COOKER TEST (121C, 100%RH), 15 Psig, PRE COND 192 HR 30C/60%RH (MSL3)							
CY8C4013 (8CP44334)	3817045	611814628	CML-RA	96	79	0	
CY8C4013 (8CP44334)	3817045	611814628	CML-RA	168	79	0	
CY8C4013 (8CP44334)	3817045	611814628	CML-RA	288	79	0	

Reliability Test Data

QTP #: 183602

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: PRE/POST LFR PARAMETER ASSESSMENT							
CY8C4013 (8CP44334)	3817045	611815693	ASEK-G	COMP	10+2S	0	
STRESS: STATIC LATCH-UP (125C, 100mA)							
CY8C4013 (8CP44334)	3817045	611814628	CML-RA	COMP	3	0	
CY8C4013 (8CP44334)	3817045	611815693	ASEK-G	COMP	3	0	
STRESS: STATIC LATCH-UP (125C, 140mA)							
CY8C4013 (8CP44334)	3817045	611814628	CML-RA	COMP	3	0	
CY8C4013 (8CP44334)	3817045	611815693	ASEK-G	COMP	3	0	
STRESS: STATIC LATCH-UP (85C, 140mA)							
CY8C4013 (8CP44334)	3817045	611814628	CML-RA	COMP	3	0	
CY8C4013 (8CP44334)	3817045	611815693	ASEK-G	COMP	3	0	
STRESS: STATIC LATCH-UP (85C, 200mA)							
CY8C4013 (8CP44334)	3817045	611814628	CML-RA	COMP	3	0	
CY8C4013 (8CP44334)	3817045	611815693	ASEK-G	COMP	3	0	
STRESS: STATIC LATCH-UP (85C, 300mA)							
CY8C4013 (8CP44334)	3817045	611814628	CML-RA	COMP	3	0	
CY8C4013 (8CP44334)	3817045	611815693	ASEK-G	COMP	3	0	
STRESS: TC COND. C -65C TO 150C, PRE COND 192 HRS 30C/60%RH (MSL3)							
CY8C4013 (8CP44334)	3817045	611814628	CML-RA	500	80	0	
CY8C4013 (8CP44334)	3817045	611814628	CML-RA	1000	80	0	

Document History Page

Document Title: QTP#183602: PSoC® 4000 DEVICE FAMILY S8PF-10R, FAB25 (CU BEOL INTERCONNECT)
Document Number: 002-25095

Rev.	ECN No.	Orig. of Change	Description of Change
**	6301609	HSTO	Initial Spec Release

Cypress Semiconductor
Product Qualification Report

QTP#180417 VERSION**
September 2018

PSoC® 4100S Device Family S8SPF-10P, Fab25 (Cu BEOL Interconnect)	
CY8C4124 **CY8C4125** **CY8C4126** **CY8C4146**	**Programmable System-On-Chip (PSoC®)**

FOR ANY QUESTIONS ON THIS REPORT, PLEASE CONTACT
reliability@cypress.com or via a CYLINK CRM CASE

Prepared By:
Honesto Sintos
Reliability Engineer

Reviewed By:
Sandhya Chandrashekhar
Reliability Principal Engineer

Approved By:
David Hoffman
Reliability Director

PACKAGE/PRODUCT QUALIFICATION HISTORY

QTP Number	Description of Qualification Purpose	Date
151008	Qualification of S8* Technology in Fab25 Using TSG6M Device (AL BEOL Interconnect)	Dec 2015
151403	Qualification of PSoC® 4100 and PSoC® 4200 Device, S8PF-10R Technology in Fab25 (AL BEOL Interconnect)	Dec 2015
151303	Qualification of CapSense® MBR3 Device, S8PF-10R Technology in Fab25 (AL BEOL Interconnect)	Dec 2015
160401	Qualification of TrueTouch® Fingerprint Device, S8PFHD-10R Technology in Fab25 (AL BEOL Interconnect)	May 2016
160301	Qualification of TrueTouch® Gen6XL Touchscreen Controller Device, S8SPF-10P Technology in Fab25 (AL BEOL Interconnect)	Jun 2016
160803	Qualification of PSoC® 4000S Device, S8PFHD-10R Technology in Fab25 (AL BEOL Interconnect)	Jun 2016
160207	Qualification of PSoC3 Leopard T06, S8P12-10P Technology in Fab25 (AL BEOL Interconnect)	Jul 2016
160702	Qualification of PSoC® 4200L, S8SPF-10P Technology in Fab25 (AL BEOL Interconnect)	Sep 2016
160202	Qualification of PSoC® 4100S, S8SPF10P 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
175110	Qualification of CapSense® MBR3 Device Family, S8PF-10R in Fab25 (Cu BEOL Interconnect)	Sept 2018
180417	Qualification of PSoC® 4100S, S8SPF10P Technology in Fab25 (Cu BEOL Interconnect)	Sept 2018

PRODUCT DESCRIPTION (for qualification)	
Qualification Purpose: Qualification of PSoC® 4100S, S8SPF10P Technology in Fab25 (Cu BEOL Interconnect)	
Marketing Part #:	CY8C4124 / CY8C4125 / CY8C4126 / CY8C4146
Device Description:	1.8V, 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 / S8PF-10P

MAJOR PACKAGE INFORMATION USED IN THIS QUALIFICATION	
Package Designation:	LQ24A
Package Outline, Type, or Name:	QFN24L (4x4x0.6mm)
Mold Compound Name/Manufacturer:	GE 7470 / Nitto
Mold Compound Flammability Rating:	UL94 V-0
Mold Compound Alpha Emission Rate:	N/A (not low alpha mold compound)
Oxygen Rating Index: >28%	54%
Lead Frame Designation:	FMP
Lead Frame Material:	Pre-plated leadframe with base Copper
Substrate Material:	N/A
Lead Finish, Composition / Thickness:	NiPdAu
Die Backside Preparation Method/Metallization:	Backgrind
Die Separation Method:	Wafer Saw
Die Attach Supplier:	Henkel
Die Attach Material:	QMI-519
Bond Diagram Designation	001-88426
Wire Bond Method:	Thermosonic
Wire Material/Size:	CuPd / 0.8 mil
Thermal Resistance Theta JA °C/W:	38.01 CW (QFN24)
Package Cross Section Yes/No:	No
Assembly Process Flow:	001-87690M
Name/Location of Assembly (prime) facility:	CML-RA
MSL LEVEL	3
REFLOW PROFILE	260C

MAJOR PACKAGE INFORMATION USED IN THIS QUALIFICATION	
Package Designation:	AZ48
Package Outline, Type, or Name:	48L-TQFP 7x7x1.4mm
Mold Compound Name/Manufacturer:	EME-G631 / Sumitomo
Mold Compound Flammability Rating:	V-0 / UL94
Mold Compound Alpha Emission Rate:	N/A
Oxygen Rating Index: >28%	54%
Lead Frame Designation:	FMP
Lead Frame Material:	Cu with Ag spot plating
Substrate Material:	N/A
Lead Finish, Composition / Thickness:	Pure Sn
Die Backside Preparation Method/Metallization:	Backgrind
Die Separation Method:	100% Saw
Die Attach Supplier:	Sumitomo
Die Attach Material:	1076
Bond Diagram Designation	001-93547
Wire Bond Method:	Thermosonic
Wire Material/Size:	Copper Palladium (Cu-Pd) / 0.8 mil
Thermal Resistance Theta JA °C/W:	71 C/W
Package Cross Section Yes/No:	Yes
Assembly Process Flow:	001-64159
Name/Location of Assembly (prime) facility:	OSE-Taiwan (T)
MSL LEVEL	3
REFLOW PROFILE	260C

PACKAGE AVAILABILITY

PACKAGE	ASSEMBLY SITE	QTP NUMBER
32-Lead QFN	CML-Philippines (RA)	155108
40-Lead QFN	CML-Philippines (RA)	155109
48-Lead TQFP	OSE-Taiwan (T)	155110
35-ball CSP	Decatech-Philippines (DT)	160604

ELECTRICAL TEST / FINISH DESCRIPTION	
Test Location:	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	1,548 Devices	0	N/A	N/A	0 PPM 1
High Temperature Operating Life Long Term Failure Rate	550,000	0	0.7	170	10 FIT 2

1. EFR devices number is based on QTP#175110 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#175110 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 #: 160202

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)							
CY8C4146 (8CP41003AB)	3630022	611628553	OSE-T	48	1647	0	
STRESS: ESD-CHARGE DEVICE MODEL							
CY8C4146 (8CP41003AB)	3622058	611618356	OSE-T	500	9	0	
CY8C4146 (8CP41003AB)	3622058	611618356	OSE-T	750	3	0	
CY8C4146 (8CP41003AB)	3622058	611618356	OSE-T	1000	3	0	
CY8C4146 (8CP41003AB)	3622058	611618356	OSE-T	1250	3	0	
CY8C4146 (8CP41003AB)	3622058	611618356	OSE-T	1500	3	0	
CY8C4146 (8CP41003AB)	3622058	611618356	OSE-T	1750	3	0	
CY8C4146 (8CP41003AB)	3622058	611618356	OSE-T	2000	3	0	
STRESS: ESD-HUMAN BODY MODEL PER JESD22, METHOD A114							
CY8C4146 (8CP41003AB)	3622058	611618356	OSE-T	1100	3	0	
CY8C4146 (8CP41003AB)	3622058	611618356	OSE-T	2200	8	0	
CY8C4146 (8CP41003AB)	3622058	611618356	OSE-T	3300	3	0	
CY8C4146 (8CP41003AB)	3622058	611618356	OSE-T	4000	3	0	
CY8C4146 (8CP41003AB)	3622058	611618356	OSE-T	5000	3	0	
CY8C4146 (8CP41003AB)	3622058	611618356	OSE-T	6000	3	0	
CY8C4146 (8CP41003AB)	3622058	611618356	OSE-T	7000	3	0	
CY8C4146 (8CP41003AB)	3622058	611618356	OSE-T	8000	3	0	
STRESS: STATIC LATCH-UP (125C, 100mA)							
CY8C4146 (8CP41003AB)	3622058	611618356	OSE-T	COMP	3	0	
STRESS: STATIC LATCH-UP (125C, 140mA)							
CY8C4146 (8CP41003AB)	3622058	611618356	OSE-T	COMP	3	0	
STRESS: STATIC LATCH-UP (85C, 140mA)							
CY8C4146 (8CP41003AB)	3622058	611618356	OSE-T	COMP	3	0	
STRESS: STATIC LATCH-UP (85C, 200mA)							
CY8C4146 (8CP41003AB)	3622058	611618356	OSE-T	COMP	3	0	
STRESS: STATIC LATCH-UP (85C, 300mA)							
CY8C4146 (8CP41003AB)	3622058	611618356	OSE-T	COMP	3	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 #: 175110

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: ACOUSTIC, MSL3							
CY8CMBR31167 (8CP44334)	3817045	611814628	CML-RA	COMP	22	0	
STRESS: DATA RETENTION, PLASTIC, 175C							
CY8CMBR31167 (8CP44334)	3817045	611814628	CML-RA	76	79	0	
CY8CMBR31167 (8CP44334)	3817045	611814628	CML-RA	152	79	0	
STRESS: ENDURANCE (100K CYCLES)							
CY8C4014LQI7 (8CP44333C)	3817045	611815693	ASEK-G	CYCLING	80	0	
CY8C4014LQI7 (8CP44333C)	3817045	611815693	ASEK-G	168	80	0	
STRESS: HIGH TEMP DYNAMIC OPERATING LIFE-EARLY FAILURE RATE (150C, 2.07V, Vcc Max)							
CY8C4014LQI7 (8CP44333C)	3817045	611815693	CML-RA	48	1548	0	
STRESS: ESD-CHARGE DEVICE MODEL (500V)							
CY8CMBR31167 (8CP44334)	3817045	611814628	CML-RA	500	9	0	
CY8C4014LQI7 (8CP44333C)	3817045	611815693	ASEK-G	500	9	0	
CY8C4014SXI7 (8C44332CB)	3817045	611817296	CML-RA	500	9	0	
CY8C4014SXI7 (8C44331CB)	3817045	611817297	CML-RA	500	9	0	
CY8C4014PVI7 (8CP44335C)	3817045	611814629	CML-RA	500	9	0	
STRESS: ESD-CHARGE DEVICE MODEL (750V)							
CY8CMBR31167 (8CP44334)	3817045	611814628	CML-RA	750	3	0	
CY8C4014LQI7 (8CP44333C)	3817045	611815693	ASEK-G	750	3	0	
CY8C4014SXI7 (8C44332CB)	3817045	611817296	CML-RA	750	3	0	
CY8C4014SXI7 (8C44331CB)	3817045	611817297	CML-RA	750	3	0	
CY8C4014PVI7 (8CP44335C)	3817045	611814629	CML-RA	750	3	0	
STRESS: ESD-CHARGE DEVICE MODEL (1000V)							
CY8CMBR31167 (8CP44334)	3817045	611814628	CML-RA	1000	3	0	
CY8C4014LQI7 (8CP44333C)	3817045	611815693	ASEK-G	1000	3	0	
CY8C4014SXI7 (8C44332CB)	3817045	611817296	CML-RA	1000	3	0	
CY8C4014SXI7 (8C44331CB)	3817045	611817297	CML-RA	1000	3	0	
CY8C4014PVI7 (8CP44335C)	3817045	611814629	CML-RA	1000	3	0	
STRESS: ESD-CHARGE DEVICE MODEL (1250V)							
CY8CMBR31167 (8CP44334)	3817045	611814628	CML-RA	1250	3	0	
CY8C4014LQI7 (8CP44333C)	3817045	611815693	ASEK-G	1250	3	0	
CY8C4014SXI7 (8C44332CB)	3817045	611817296	CML-RA	1250	3	0	
CY8C4014SXI7 (8C44331CB)	3817045	611817297	CML-RA	1250	3	0	
CY8C4014PVI7 (8CP44335C)	3817045	611814629	CML-RA	1250	3	0	

Reliability Test Data

QTP #: 175110

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: ESD-CHARGE DEVICE MODEL (1500V)							
CY8CMBR31167 (8CP44334)	3817045	611814628	CML-RA	1500	3	0	
CY8C4014LQI7 (8CP44333C)	3817045	611815693	ASEK-G	1500	3	0	
CY8C4014SXI7 (8C44332CB)	3817045	611817296	CML-RA	1500	3	0	
CY8C4014SXI7 (8C44331CB)	3817045	611817297	CML-RA	1500	3	0	
CY8C4014PVI7 (8CP44335C)	3817045	611814629	CML-RA	1500	3	0	
STRESS: ESD-CHARGE DEVICE MODEL (1750V)							
CY8CMBR31167 (8CP44334)	3817045	611814628	CML-RA	1750	3	0	
CY8C4014LQI7 (8CP44333C)	3817045	611815693	ASEK-G	1750	3	0	
CY8C4014SXI7 (8C44332CB)	3817045	611817296	CML-RA	1750	3	0	
CY8C4014SXI7 (8C44331CB)	3817045	611817297	CML-RA	1750	3	0	
CY8C4014PVI7 (8CP44335C)	3817045	611814629	CML-RA	1750	3	0	
STRESS: ESD-CHARGE DEVICE MODEL (2000V)							
CY8CMBR31167 (8CP44334)	3817045	611814628	CML-RA	2000	3	0	
CY8C4014LQI7 (8CP44333C)	3817045	611815693	ASEK-G	2000	3	0	
CY8C4014SXI7 (8C44332CB)	3817045	611817296	CML-RA	2000	3	0	
CY8C4014SXI7 (8C44331CB)	3817045	611817297	CML-RA	2000	3	0	
CY8C4014PVI7 (8CP44335C)	3817045	611814629	CML-RA	2000	3	0	
STRESS: ESD-HUMAN BODY MODEL PER JESD22, METHOD A114							
CY8CMBR31167 (8CP44334)	3817045	611814628	CML-RA	1100	3	0	
CY8C4014LQI7 (8CP44333C)	3817045	611815693	ASEK-G	1100	3	0	
CY8CMBR31167 (8CP44334)	3817045	611814628	CML-RA	2200	8	0	
CY8C4014LQI7 (8CP44333C)	3817045	611815693	ASEK-G	2200	3	0	
CY8CMBR31167 (8CP44334)	3817045	611814628	CML-RA	3300	3	0	
CY8C4014LQI7 (8CP44333C)	3817045	611815693	ASEK-G	3300	3	0	
CY8CMBR31167 (8CP44334)	3817045	611814628	CML-RA	4000	3	0	
CY8C4014LQI7 (8CP44333C)	3817045	611815693	ASEK-G	4000	3	0	
CY8CMBR31167 (8CP44334)	3817045	611814628	CML-RA	5000	3	0	
CY8C4014LQI7 (8CP44333C)	3817045	611815693	ASEK-G	5000	3	0	
CY8CMBR31167 (8CP44334)	3817045	611814628	CML-RA	6000	3	0	
CY8C4014LQI7 (8CP44333C)	3817045	611815693	ASEK-G	6000	3	0	
CY8CMBR31167 (8CP44334)	3817045	611814628	CML-RA	7000	3	0	
STRESS: HIGH TEMP DYNAMIC OPERATING LIFE-LATENT FAILURE RATE (150C, 2.07V, Vcc Max)							
CY8C4014LQI7 (8CP44333C)	3817045	611815693	ASEK-G	500	80	0	
STRESS: PRESSURE COOKER TEST (121C, 100%RH), 15 Psig, PRE COND 192 HR 30C/60%RH (MSL3)							
CY8CMBR31167 (8CP44334)	3817045	611814628	CML-RA	96	79	0	
CY8CMBR31167 (8CP44334)	3817045	611814628	CML-RA	168	79	0	
CY8CMBR31167 (8CP44334)	3817045	611814628	CML-RA	288	79	0	

Reliability Test Data

QTP #: 175110

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: PRE/POST LFR PARAMETER ASSESSMENT							
CY8C4014LQI7 (8CP44333C)	3817045	611815693	ASEK-G	COMP	10+2S	0	
STRESS: STATIC LATCH-UP (125C, 100mA)							
CY8CMBR31167 (8CP44334)	3817045	611814628	CML-RA	COMP	3	0	
CY8C4014LQI7 (8CP44333C)	3817045	611815693	ASEK-G	COMP	3	0	
STRESS: STATIC LATCH-UP (125C, 140mA)							
CY8CMBR31167 (8CP44334)	3817045	611814628	CML-RA	COMP	3	0	
CY8C4014LQI7 (8CP44333C)	3817045	611815693	ASEK-G	COMP	3	0	
STRESS: STATIC LATCH-UP (85C, 140mA)							
CY8CMBR31167 (8CP44334)	3817045	611814628	CML-RA	COMP	3	0	
CY8C4014LQI7 (8CP44333C)	3817045	611815693	ASEK-G	COMP	3	0	
STRESS: STATIC LATCH-UP (85C, 200mA)							
CY8CMBR31167 (8CP44334)	3817045	611814628	CML-RA	COMP	3	0	
CY8C4014LQI7 (8CP44333C)	3817045	611815693	ASEK-G	COMP	3	0	
STRESS: STATIC LATCH-UP (85C, 300mA)							
CY8CMBR31167 (8CP44334)	3817045	611814628	CML-RA	COMP	3	0	
CY8C4014LQI7 (8CP44333C)	3817045	611815693	ASEK-G	COMP	3	0	
STRESS: TC COND. C -65C TO 150C, PRE COND 192 HRS 30C/60%RH (MSL3)							
CY8CMBR31167 (8CP44334)	3817045	611814628	CML-RA	500	80	0	
CY8CMBR31167 (8CP44334)	3817045	611814628	CML-RA	1000	80	0	

Reliability Test Data

QTP #: 180417

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: ESD-CHARGE DEVICE MODEL							
CY8C4146AZ (8CP41003)	3826006	611827097	OSE-T	500	9	0	
CY8C4146LQ (8CP41001)	3826006	611827022	CML-RA	500	9	0	
CY8C4146AZ (8CP41003)	3826006	611827097	OSE-T	750	3	0	
CY8C4146LQ (8CP41001)	3826006	611827022	CML-RA	750	3	0	
CY8C4146AZ (8CP41003)	3826006	611827097	OSE-T	1000	3	0	
CY8C4146LQ (8CP41001)	3826006	611827022	CML-RA	1000	3	0	
CY8C4146AZ (8CP41003)	3826006	611827097	OSE-T	1250	3	0	
CY8C4146LQ (8CP41001)	3826006	611827022	CML-RA	1250	3	0	
CY8C4146AZ (8CP41003)	3826006	611827097	OSE-T	1500	3	0	
CY8C4146LQ (8CP41001)	3826006	611827022	CML-RA	1500	3	0	
CY8C4146AZ (8CP41003)	3826006	611827097	OSE-T	1750	3	0	
CY8C4146LQ (8CP41001)	3826006	611827022	CML-RA	1750	3	0	
CY8C4146AZ (8CP41003)	3826006	611827097	OSE-T	2000	3	0	
CY8C4146LQ (8CP41001)	3826006	611827022	CML-RA	2000	3	0	
STRESS: ESD-HUMAN BODY MODEL PER JESD22, METHOD A114							
CY8C4146AZ (8CP41003)	3826006	611827097	OSE-T	1100	3	0	
CY8C4146LQ (8CP41001)	3826006	611827022	CML-RA	1100	3	0	
CY8C4146AZ (8CP41003)	3826006	611827097	OSE-T	2200	8	0	
CY8C4146LQ (8CP41001)	3826006	611827022	CML-RA	2200	8	0	
CY8C4146AZ (8CP41003)	3826006	611827097	OSE-T	3300	3	0	
CY8C4146LQ (8CP41001)	3826006	611827022	CML-RA	3300	3	0	
CY8C4146AZ (8CP41003)	3826006	611827097	OSE-T	4000	3	0	
CY8C4146LQ (8CP41001)	3826006	611827022	CML-RA	4000	3	0	
CY8C4146AZ (8CP41003)	3826006	611827097	OSE-T	5000	3	0	
CY8C4146LQ (8CP41001)	3826006	611827022	CML-RA	5000	3	0	
CY8C4146AZ (8CP41003)	3826006	611827097	OSE-T	6000	3	0	
CY8C4146LQ (8CP41001)	3826006	611827022	CML-RA	6000	3	0	
CY8C4146AZ (8CP41003)	3826006	611827097	OSE-T	7000	3	0	
CY8C4146LQ (8CP41001)	3826006	611827022	CML-RA	7000	3	0	
CY8C4146AZ (8CP41003)	3826006	611827097	OSE-T	8000	3	0	
CY8C4146LQ (8CP41001)	3826006	611827022	CML-RA	8000	3	0	

Reliability Test Data

QTP #: 180417

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: STATIC LATCH-UP (125C, 100mA)							
CY8C4146AZ (8CP41003)	3826006	611827097	OSE-T	COMP	3	0	
CY8C4146LQ (8CP41001)	3826006	611827022	CML-RA	COMP	3	0	
STRESS: STATIC LATCH-UP (125C, 140mA)							
CY8C4146AZ (8CP41003)	3826006	611827097	OSE-T	COMP	3	0	
CY8C4146LQ (8CP41001)	3826006	611827022	CML-RA	COMP	3	0	
STRESS: STATIC LATCH-UP (85C, 140mA)							
CY8C4146AZ (8CP41003)	3826006	611827097	OSE-T	COMP	3	0	
CY8C4146LQ (8CP41001)	3826006	611827022	CML-RA	COMP	3	0	
STRESS: STATIC LATCH-UP (85C, 200mA)							
CY8C4146AZ (8CP41003)	3826006	611827097	OSE-T	COMP	3	0	
CY8C4146LQ (8CP41001)	3826006	611827022	CML-RA	COMP	3	0	

Document History Page

Document Title: QTP#180417: PSoC® 4100S DEVICE FAMILY S8SPF-10P, FAB25 (CU BEOL INTERCONNECT)
Document Number: 002-25090

Rev.	ECN No.	Orig. of Change	Description of Change
**	6301250	HSTO	Initial Spec Release

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
reliability@cypress.com or via a CYLINK CRM CASE

Prepared By:
Honesto Sintos
Reliability Engineer

Reviewed By:
Lorena Zapanta
Reliability Manager

Approved By:
David Hoffman
Reliability Director

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

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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

CY8C4100S FAB 25 Cu Characterization Report

Design Engineering Director
John Kizziar
jwk@cypress.com

Product Engineering Director
Toan Ong
tto@cypress.com

Staff Product Engineer
Vineet Madan
vmad@cypress.com

Applications Engineer
Steven Wong
xsw@cypress.com

Marketing Engineer
Joey Windham
wjo@cypress.com

www.cypress.com

198 Champion Ct.
San Jose, CA 95134 USA

Tel: (408) 943 2600
Fax: (408) 943 4730

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2 Introduction

2.1 General Description

PSoC® 4 is a scalable and reconfigurable platform architecture for a family of programmable embedded system controllers with an ARM® Cortex™-M0+ CPU. It combines programmable and reconfigurable analog and digital blocks with flexible automatic routing. The PSoC CY8C4146 FNI-S443 product family is a member of the PSoC 4 platform architecture. It is a combination of a microcontroller with standard communication and timing peripherals, a capacitive touch-sensing system (CapSense) with best-in-class performance, programmable general-purpose continuous-time and switched-capacitor analog blocks, and programmable connectivity. PSoC CY8C4146 FNI-S443 products will be upward compatible with members of the PSoC 4 platform for new applications and design needs.

2.2 Pin List

The following table provides the pin list for PSoC CY8C4146 FNI-S443 for the 35-ball CSP package. All port pins support GPIO.

Table 1. Pin List

35-CSP		35-CSP	
Pin	**Name**	**Pin**	**Name**
C3	P0.0	D5	P1.5
A5	P0.1	D6	P1.6
A4	P0.2	E7	P1.7/VREF
A3	P0.3	D3	P2.2
B3	P0.4	E4	P2.3
A6	P0.5	E5	P2.4
B4	P0.6	E6	P2.5
B5	P0.7	E3	P2.6
B6	XRES	E2	P2.7
A7	VCCD	E1	P3.0
B7	VSS	D2	P3.1
C7	VDD	D1	P3.2
C7	VDD	C1	P3.3
B7	VSS	C2	P3.4
C4	P1.0	B1	P4.0
C5	P1.1	B2	P4.1
C6	P1.2	A2	P4.2
D7	P1.3	A1	P4.3
D4	P1.4		

Descriptions of the Power pins are as follows:

VDDD: Power supply for the chip.
VSSD: Ground pin for the chip.
VCCD: Regulated digital supply. This is an output if the internal regulator is used. If the internal regulator is bypassed (in which case VDDD and VCCD must be shorted together) VCCD must be driven by a 1.8 V ±5% supply.

2.3 Alternative Functions:

Each Port pin has can be assigned to one of multiple functions; it can, for instance, be an analog I/O, a digital peripheral function, an LCD pin, or a CapSense pin. The pin assignments are shown in the following table.

Table 2. WLCSP Balls to Pins Connections

Ball	Port/ Pin	Analog	Alt Function 1	Alt Function 2	Alt Function 3	Deep Sleep 1	Deep Sleep 2	Description
C3	P0.0	lpcomp.in_p[0]	–	–	tcpwm.tr_in[0]	scb[2].i2c_scl:0	scb[0].spi_select1:0	Port 0 Pin 0: gpio, lcd, csd, scb0, scb2, comp
A5	P0.1	lpcomp.in_n[0]	–	–	tcpwm.tr_in[1]	scb[2].i2c_sda:0	scb[0].spi_select2:0	Port 0 Pin 1: gpio, lcd, csd, scb0, scb2, comp
A4	P0.2	lpcomp.in_p[1]	–	–	–	–	scb[0].spi_select3:0	Port 0 Pin 2: gpio, lcd, csd, scb0, comp
A3	P0.3	lpcomp.in_n[1]	–	–	–	–	scb[2].spi_select0	Port 0 Pin 3: gpio, lcd, csd, scb2, comp
B3	P0.4	wco.wco_in	–	scb[1].uart_rx:0	scb[2].uart_rx:0	scb[1].i2c_scl:0	scb[1].spi_mosi:1	Port 0 Pin 4: gpio, lcd, csd, scb1, scb2
A6	P0.5	wco.wco_out	–	scb[1].uart_tx:0	scb[2].uart_tx:0	scb[1].i2c_sda:0	scb[1].spi_miso:1	Port 0 Pin 5: gpio, lcd, csd, scb1, scb2
B4	P0.6	–	srss.ext_clk	scb[1].uart_cts:0	scb[2].uart_tx:1	–	scb[1].spi_clk:1	Port 0 Pin 6: gpio, lcd, csd, scb1, scb2, ext_clk
B5	P0.7	–	tcpwm.line[0]:2	scb[1].uart_rts:0	–	–	scb[1].spi_select0:1	Port 0 Pin 7: gpio, lcd, csd, scb1, tcpwm
B6	XRES	–	–	–	–	–	–	Chip reset, active low
A7	VCCD	–	–	–	–	–	–	Regulated supply, connect to 1µF cap or 1.8V
B7	VSS	–	–	–	–	–	–	Ground
C7	VDD	–	–	–	–	–	–	Supply, 1.71 - 5.5V
C4	P1.0	ctb0_oa0+	tcpwm.line[2]:1	scb[0].uart_rx:1	–	scb[0].i2c_scl:0	scb[0].spi_mosi:1	Port 1 Pin 0: gpio, lcd, csd, ctb, pwm, scb0
C5	P1.1	ctb0_oa0-	tcpwm.line_compl[2]:1	scb[0].uart_tx:1	–	scb[0].i2c_sda:0	scb[0].spi_miso:1	Port 1 Pin 1: gpio, lcd, csd, ctb, pwm, scb0
C6	P1.2	ctb0_oa0_out	tcpwm.line[3]:1	scb[0].uart_cts:1	tcpwm.tr_in[2]	scb[2].i2c_scl:1	scb[0].spi_clk:1	Port 1 Pin 2: gpio, lcd, csd, ctb, pwm, scb0, scb2
D7	P1.3	ctb0_oa1_out	tcpwm.line_compl[3]:1	scb[0].uart_rts:1	tcpwm.tr_in[3]	scb[2].i2c_sda:1	scb[0].spi_select0:1	Port 1 Pin 3: gpio, lcd, csd, ctb, pwm, scb0
D4	P1.4	ctb0_oa1-	–	–	–	–	scb[0].spi_select1:1	Port 1 Pin 4: gpio, lcd, csd, ctb, scb0
D5	P1.5	ctb0_oa1+	–	–	–	–	scb[0].spi_select2:1	Port 1 Pin 5: gpio, lcd, csd, ctb, scb0
D6	P1.6	ctb0_oa0+	–	–	–	–	scb[0].spi_select3:1	Port 1 Pin 6: gpio, lcd, csd, scb0
E7	P1.7	ctb0_oa1+ sar_ext_vref0 sar_ext_vref1	–	–	–	–	scb[2].spi_clk	Port 1 Pin 7: gpio, lcd, csd, ext_ref, scb2
D3	P2.2	sarmux[2]	–	–	–	–	scb[1].spi_clk:2	Port 2 Pin 2: gpio, lcd, csd, sarmux, scb1
E4	P2.3	sarmux[3]	–	–	–	–	scb[1].spi_select0:2	Port 2 Pin 3: gpio, lcd, csd, sarmux, scb1
E5	P2.4	sarmux[4]	tcpwm.line[0]:1	–	–	–	scb[1].spi_select1:1	Port 2 Pin 4: gpio, lcd, csd, sarmux, pwm, scb1
E6	P2.5	sarmux[5]	tcpwm.line_compl[0]:1	–	–	–	scb[1].spi_select2:1	Port 2 Pin 5: gpio, lcd, csd, sarmux, pwm, scb1
E3	P2.6	sarmux[6]	tcpwm.line[1]:1	–	–	–	scb[1].spi_select3:1	Port 2 Pin 6: gpio, lcd, csd, sarmux, pwm, scb1
E2	P2.7	sarmux[7]	tcpwm.line_compl[1]:1	–	–	lpcomp.comp[0]:1	scb[2].spi_mosi	Port 2 Pin 7: gpio, lcd, csd, sarmux, pwm, scb2

Ball	Port/ Pin	Analog	Alt Function 1	Alt Function 2	Alt Function 3	Deep Sleep 1	Deep Sleep 2	Description
D2	P3.1	–	tcpwm.line_compl[0]:0	scb[1].uart_tx:1	–	scb[1].i2c_sda:2	scb[1].spi_miso:0	Port 3 Pin 1: gpio, lcd, csd, pwm, scb1
D1	P3.2	–	tcpwm.line[1]:0	scb[1].uart_cts:1	–	cpuss.swd_data	scb[1].spi_clk:0	Port 3 Pin 2: gpio, lcd, csd, pwm, scb1, swd
C1	P3.3	–	tcpwm.line_compl[1]:0	scb[1].uart_rts:1	–	cpuss.swd_clk	scb[1].spi_select0:0	Port 3 Pin 3: gpio, lcd, csd, pwm, scb1, swd
C2	P3.4	–	tcpwm.line[2]:0	–	tcpwm.tr_in[6]	–	scb[1].spi_select1:0	Port 3 Pin 4: gpio, lcd, csd, pwm, scb1
B1	P4.0	csd.vref_ext	–	scb[0].uart_rx:0	–	scb[0].i2c_scl:1	scb[0].spi_mosi:0	Port 4 Pin 0: gpio, lcd, csd, scb0
B2	P4.1	csd.cshieldpads	–	scb[0].uart_tx:0	–	scb[0].i2c_sda:1	scb[0].spi_miso:0	Port 4 Pin 1: gpio, lcd, csd, scb0
A2	P4.2	csd.cmodpad	–	scb[0].uart_cts:0	–	lpcomp.comp[0]:0	scb[0].spi_clk:0	Port 4 Pin 2: gpio, lcd, csd, scb0
A1	P4.3	csd.csh_tank	–	scb[0].uart_rts:0	–	lpcomp.comp[1]:0	scb[0].spi_select0:0	Port 4 Pin 3: gpio, lcd, csd, scb0

2.4 Packages

Packaging

The PSoC CY8C4146 FNI-S443 will be offered in a 35-ball WLCSP package.

Package dimensions and Cypress drawing numbers are in the following table.

Table 39. Package List

Spec ID#	Package	Description	Package Dwg
BID34G	35-Ball WLCSP	3.2 × 2.1 × 0.55 mm height with 0.4-mm pitch	001-93741

Table 40. Package Thermal Characteristics

Parameter	Description	Package	Min	Typ	Max	Units
T_A	Operating Ambient temperature		–40	25	85	°C
T_J	Operating junction temperature		–40	–	100	°C
T_{JA}	Package θ_{JA}	35-Ball WLCSP	–	28.0	–	°C/Watt
T_{JC}	Package θ_{JC}	35-Ball WLCSP	–	0.4	–	°C/Watt

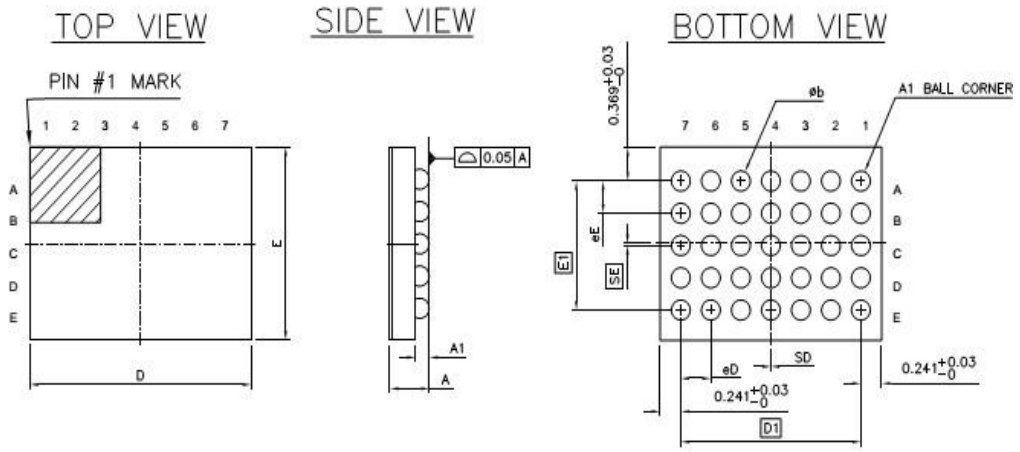
Table 41. Solder Reflow Peak Temperature

Package	Maximum Peak Temperature	Maximum Time at Peak Temperature
35-Ball WLCSP	260 °C	30 seconds

Table 42. Package Moisture Sensitivity Level (MSL), IPC/JEDEC J-STD-020

Package	MSL
35-Ball WLCSP	MSL 1

Figure 10. 35-Ball WLCSP Package Outline



SYMBOL	DIMENSIONS		
	MIN.	NOM.	MAX.
A	-	-	0.482
A1	0.141	0.157	0.173
D	2.557	2.582	2.607
E	2.072	2.097	2.122
D1		2.10 BSC	
E1		1.40 BSC	
MD		7	
ME		5	
N		35	
Ø b	0.19	0.22	0.25
eD	-	0.35	-
eE	-	0.35	-
SD		0	
SE		0.02 BSC	

NOTES:
1. ALL DIMENSIONS ARE IN MILLIMETERS.
2. JEDEC PUBLICATION 95; DESIGN GUIDE 4.18.

002-09958 *D

2.5 Datasheet

CY8C41xx-S meets all datasheet specifications. The datasheet is available through your local Cypress sales representative. You can also direct your requests to Visit www.cypress.com/go/psoc4

2.6 Reference Documents and Application Notes

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

001-95223 – *Technical Reference Manual (TRM)* Contains detailed information on communication protocol, modes and registers, power states, and instructions on getting started with supporting tools.
The TRM is available in the Documentation section at www.cypress.com/psoc4.

001-81799 – *Programming Reference Manual.* It gives the information necessary to program the nonvolatile memory of the CY8C41xx devices. It describes the communication protocol required for access by an external requirement, explains the programming algorithm and gives electrical specifications of the physical connection. Visit us at www.cypress.com/go/psoccreator for the latest information on the revolutionary, easy to use PSoC Creator IDE, supported third party compilers, programmers, debuggers, and development kits.

2.7 Qualification Report

The CY8C4100-S is qualified under QTP # 180417

3 Characterization Hardware and Setup

3.1 Measurement System and Hardware

3.1.1 Temperature Forcing System Temptronic

TPO4310A Precision Temperature Forcing System (PTFS) was used to force ambient/industrial operating temperatures of -45 °C, 25 °C and 130 °C.

3.1.2 DC Power Supply

Keithley-2400 or NI-PXI-4132 SMU was used to source the operating device power supply voltages as well as to measure currents

3.1.3 Digital Multimeter

Agilent 34410A was used to measure voltages at 6.5 digit resolution.

3.1.4 Clock Input

Tektronix AFG3102 Arbitrary Function Generator or Stanford Research Systems DS360 was used to provide clock signal

3.1.5 Oscilloscope

The Tektronix DPO7104 Digital Phosphorus Oscilloscope was used to measure all AC parameters on the device including frequency, rise/fall time and duty cycle.

3.1.6 Probes

All AC signals were measured using Tektronix TAP-1500 FET Probe

3.1.7 Automatic Tester Equipment (ATE)

The NEXTEST Magnum SV was used to for measurements of production compatible parameters.

3.2 Test Conditions

Power supply & Temperature	Min	Typical	Max	Unit
VDDD	1.71	3.3	5.5	V
VDDA	1.71	3.3	5.5	V
VCCD	1.71	1.8	1.89	V
Temperature	-45	25	130	°C
DUT Package	48-PIN TQFP			

4 Characterization

4.1 Table-1 Absolute Maximum Ratings

Parameter	Description	Min	Typ	Max	Units	Details/ Conditions
V_{DDD_ABS}	Digital supply relative to V_{SS}	–0.5	–	6	V	–
V_{CCD_ABS}	Direct digital core voltage input relative to V_{SS}	–0.5	–	1.95		–
V_{GPIO_ABS}	GPIO voltage	–0.5	–	V_{DD}+0.5		–
I_{GPIO_ABS}	Maximum current per GPIO	–25	–	25	mA	–
$I_{GPIO\_injection}$	GPIO injection current, Max for $V_{IH} > V_{DDD}$, and Min for $V_{IL} < V_{SS}$	–0.5	–	0.5		Current injected per pin
ESD_HBM	Electrostatic discharge human body model	2200	–	–	V	–
ESD_CDM	Electrostatic discharge charged device model	500	–	–		–
LU	Pin current for latch-up	–140	–	140	mA	–

4.2 Table-2 CSD Specification Parameter

4.2.1 CSD Specification Parameter

CHAR ID	Parameter	Description	Specification			SkyWater AI			FAB25 Cu			FAB25 AI			Units
			Spec Min	Spec Typ	Spec Max	Char Min	Char Typ	Char Max	Char Min	Char Typ	Char Max	Char Min	Char Typ	Char Max	
CHAR:218	IDAC1DNL	DNL	–1	–	1.00	-0.18	0.32	0.67	-0.15	0.16	0.57	-0.11	0.17	0.32	LSB
CHAR:219	IDAC1INL	INL	-2.00	–	2.00	-0.95	-0.07	0.74	-0.53	0.19	0.71	-0.38	0.02	0.50	LSB
CHAR:219A	IDAC1INL	INL	-5.50	–	5.50	0.19	0.81	3.31	0.08	1.16	2.58	0.08	2.97	3.48	LSB
CHAR:220	IDAC2DNL	DNL	–1	–	1.00	-0.18	0.31	0.79	-0.03	0.20	0.74	-0.05	0.16	0.33	LSB
CHAR:221	IDAC2INL	INL	-2.00	–	2.00	-0.50	0.05	0.62	-0.66	0.11	0.66	-0.20	0.07	0.44	LSB
CHAR:221A	IDAC2INL	INL	-5.50	–	5.00	0.35	1.41	4.90	0.13	1.50	3.89	0.37	3.83	4.32	LSB
CHAR:223	IDAC1CRT1	Output current of IDAC1 (7 bits) in low range	4.40	-	5.10	4.34	4.73	4.99	4.56	4.72	4.91	4.47	4.85	4.99	µA
CHAR:224	IDAC1CRT2	Output current of IDAC1(7 bits) in medium range	35.40	-	41.00	34.96	37.83	39.81	36.22	37.71	39.39	36.98	38.91	39.91	µA
CHAR:225	IDAC1CRT3	Output current of IDAC1(7 bits) in high range	280.00	-	330.00	277.13	294.67	319.19	289.63	300.05	314.63	295.44	312.42	319.88	µA
CHAR:226	IDAC1CRT12	Output current of IDAC1 (7 bits) in low range, 2X mode	8.80	-	10.50	8.72	9.46	9.99	9.17	9.45	9.97	9.02	9.72	10.07	µA
CHAR:227	IDAC1CRT22	Output current of IDAC1(7 bits) in medium range, 2X mode	71.00	-	82.00	69.78	73.62	79.25	72.70	75.40	79.16	74.01	77.88	79.89	µA
CHAR:228	IDAC1CRT32	Output current of IDAC1(7 bits) in high range, 2X mode	560.00	-	660.00	553.56	586.39	635.63	578.50	598.38	629.50	578.44	622.38	638.13	µA
CHAR:229	IDAC2CRT1	Output current of IDAC2 (7 bits) in low range	4.40	-	5.10	4.39	4.73	4.96	4.53	4.73	5.03	4.58	4.84	4.99	µA
CHAR:230	IDAC2CRT2	Output current of IDAC2 (7 bits) in medium range	35.40	-	41.00	34.88	36.79	39.94	35.88	37.52	39.46	37.09	38.78	39.81	µA
CHAR:231	IDAC2CRT3	Output current of IDAC2 (7 bits) in high range	280.00	-	330.00	279.75	294.34	322.44	285.69	299.07	315.81	295.75	309.96	318.13	µA
CHAR:232	IDAC2CRT12	Output current of IDAC2 (7 bits) in low range, 2X mode	8.80	-	10.50	8.82	9.47	10.00	9.04	9.46	10.03	9.16	9.73	10.03	µA
CHAR:233	IDAC2CRT22	Output current of IDAC2(7 bits) in medium range, 2X mode	71.00	-	82.00	69.99	73.64	80.12	71.92	75.12	79.39	74.31	77.57	79.66	µA
CHAR:234	IDAC2CRT32	Output current of IDAC2(7 bits) in high range, 2X mode	560.00	-	660.00	556.75	585.57	643.63	552.25	595.44	634.13	562.38	618.87	635.94	µA
CHAR:235	IDAC3CRT13	Output current of IDAC in 8-bit mode in low range	8.80	-	10.50	8.76	9.47	9.96	9.01	9.33	9.70	9.01	9.74	10.05	µA
CHAR:236	IDAC3CRT23	Output current of IDAC in 8-bit mode in medium range	71.00	-	82.00	71.69	74.35	79.78	72.10	74.42	77.79	74.43	77.88	79.86	µA
CHAR:237	IDAC3CRT33	Output current of IDAC in 8-bit mode in high range	560.00	-	660.00	570.13	604.85	641.88	563.50	592.87	618.00	576.06	622.52	637.75	µA
CHAR:238	IDACOFFSET	All zeroes input	–	–	1.00	0.00	0.02	0.07	0.00	0.01	0.01	0.00	0.02	0.05	LSB
CHAR:239	IDACGAIN	Full-scale error less offset	–	–	±10	-5.54	0.38	5.14	-3.26	1.80	7.34	-4.25	6.43	7.68	%
CHAR:240	IDACMISMATCH1	Mismatch between IDACs in Low mode	–	–	9.20	0.00	2.54	5.03	0.00	2.04	4.43	0.00	2.01	6.68	LSB
CHAR:241	IDACMISMATCH2	Mismatch between IDACs in Medium mode	–	–	4.60	0.00	1.63	3.68	0.00	1.19	3.96	0.00	1.24	2.86	LSB
CHAR:242	IDACMISMATCH3	Mismatch between IDACs in High mode	–	–	5.80	0.00	2.43	5.76	0.00	1.28	5.18	0.00	3.79	4.27	LSB
CHAR:510	IDDA	Current from VDDA when the CSD block is in a quiescent state, i.e not sensing	-	-	600.00	146.99	280.26	323.81	172.27	287.92	355.22	195.75	273.75	320.88	uA
CHAR:512	IDDA_max	Max DC current from VDDA	-	-	4000.00	2485.46	3016.37	3190.80	3110.58	3507.53	3660.03	3273.75	3554.03	3650.10	uA
CHAR:513	IDDA_LP_CSD	Current from VDDA when the CSD block is configured for low power CSD	-	-	55.00	14.30	27.15	40.25	11.86	24.44	35.28	22.50	35.83	45.00	uA
CHAR:514	IDDA_LP_ADC	Current from VDDA when the CSD block is configured for low power CSD and low power ADC	-	-	75.00	19.23	41.83	54.30	17.93	38.99	54.08	32.63	50.89	64.38	uA
CHAR:515	IDDA_ADC	Current from VDDA when ADC block is operating in VREF MODE where VREF=2.4V and input range is from 0V to VREF	-	-	250.00	81.89	167.80	196.71	101.51	168.71	205.43	106.50	138.44	173.50	uA

4.2.2 CSDv2 IP Parameters

CHAR ID	Parameter	Description	Specification			SkyWater AI			FAB25 Cu			FAB25 AI			Units
			Spec Min	Spec Typ	Spec Max	Char Min	Char Typ	Char Max	Char Min	Char Typ	Char Max	Char Min	Char Typ	Char Max	
DC.31	IDACB_37P5_ADC_sink	IDACB_37P5_ADC_sink	4.20	-	5.70	4.44	4.65	5.17	4.60	4.77	5.03	4.43	4.64	5.11	µA
DC.111	VREF_HI_LEVELS_volt022	VREF_HI_LEVELS_volt022	3790.00	-	3890.00	3811.50	3826.12	3858.50	3751.75	3773.41	3797.25	3820.00	3840.73	3857.50	mV
DC.111	VREF_HI_LEVELS_volt023	VREF_HI_LEVELS_volt023	4216.70	-	4316.70	4246.50	4263.96	4282.50	4095.75	4095.81	4095.88	4240.50	4267.06	4283.50	mV
DC.111	VREF_HI_LEVELS_volt021	VREF_HI_LEVELS_volt021	3440.90	-	3540.90	3466.00	3484.40	3513.50	3407.88	3428.03	3448.13	3464.50	3490.85	3520.00	mV
DC.111	VREF_HI_LEVELS_volt020	VREF_HI_LEVELS_volt020	3150.00	-	3250.00	3175.00	3188.71	3218.00	3128.13	3143.69	3160.63	3171.00	3188.77	3226.00	mV
DC.47	IDACB_MM_PN_LO	IDACB P-N Mismatch - Low Code (0-31)	-	-	20.00	0.00	4.82	10.79	0.00	2.07	7.59	0.00	3.34	7.36	%
DC.48	IDACB_MM_PN_HI	IDACB P-N Mismatch - Large Code (32-127)	-	-	10.00	0.00	2.33	5.48	0.00	1.23	3.68	0.00	1.11	3.32	%
DC.111	VREF_HI_LEVELS_volt019	VREF_HI_LEVELS_volt019	2903.80	-	3003.80	2928.00	2943.41	2972.00	2887.38	2900.90	2915.75	2922.00	2943.18	2979.00	mV
DC.40	IDACA_AND_IDACB_Source	IDACA_AND_IDACB_Source	65.00	-	90.00	70.39	73.64	79.75	72.14	74.65	77.81	74.42	77.87	79.93	µA
DC.111	VREF_HI_LEVELS_volt016	VREF_HI_LEVELS_volt016	2360.00	-	2450.00	2380.50	2389.79	2417.00	2343.75	2354.30	2364.50	2376.50	2390.53	2418.50	mV
DC.14	IDACB_37P5_ADC_src	IDACB_37P5_ADC_src	4.00	-	6.00	4.43	4.63	5.12	4.53	4.69	4.91	4.53	4.85	4.99	µA

4.3 Table-3 POR Parameter

CHAR ID	Parameter	Description	Specification			SkyWater AI			FAB25 Cu			FAB25 AI			Units
			Spec Min	Spec Typ	Spec Max	Char Min	Char Typ	Char Max	Char Min	Char Typ	Char Max	Char Min	Char Typ	Char Max	
CHAR:331	POR Sec 8.2 / linear ramp	Linear pwr supply ramps (1V/s - 1V/100ns)	-	-	-	Functionally Tested			Functionally Tested			Functionally Tested			pass
CHAR:332	POR Sec 8.3 focus ramp	Focused pwr supply ramps (30 ramps around POR & BOD trip points)	-	-	-	Functionally Tested			Functionally Tested			Functionally Tested			pass
CHAR:333	POR Sec 8.4 Random	Random non-monotonic (30 ramps)	-	-	-	Functionally Tested			Functionally Tested			Functionally Tested			pass

4.4 Table-4 GPIO Specifications

4.4.1 DC Specification data

CHAR ID	Parameter	Description	Specification			SkyWater AI			FAB25 Cu			FAB25 AI			Units
			Spec Min	Spec Typ	Spec Max	Char Min	Char Typ	Char Max	Char Min	Char Typ	Char Max	Char Min	Char Typ	Char Max	
CHAR:51	VIH	Input Voltage high threshold	-	-	70.00	50.29	57.37	64.15	49.89	62.39	63.10	45.82	60.73	63.92	%
CHAR:52	VIL	Input Voltage low threshold	30.00	-	-	37.16	42.01	46.73	40.53	45.69	51.16	36.91	45.46	56.02	%
CHAR:53	VIH	LVTTL input, VDD < 2.7V	-	-	70.00	44.49	51.21	58.42	43.26	54.74	58.19	48.80	63.79	64.74	%
CHAR:54	VIL	LVTTL input, VDD < 2.7V	30.00	-	-	36.49	40.82	44.97	37.04	39.06	45.67	36.15	36.85	47.43	%
CHAR:55	VIH	LVTTL input, VDD >= 2.7V	-	-	2.00	1.19	1.48	1.82	1.17	1.84	1.88	1.20	1.82	1.83	V
CHAR:56	VIL	LVTTL input, VDD >= 2.7V	0.80	-	-	0.98	1.25	1.59	1.00	1.05	1.70	0.98	0.99	1.60	V
CHAR:57	VOH	Output Voltage high level	VDD-0.6	-	-	0.02	0.03	0.04	0.02	0.14	0.16	0.02	0.14	0.16	V
CHAR:58	VOH	Output Voltage high level	VDD-0.5	-	-	0.10	0.21	0.31	0.11	0.33	0.34	0.11	0.32	0.34	V
CHAR:59	VOL	Output Voltage low level	-	-	0.60	0.04	0.07	0.10	0.04	0.07	0.08	0.04	0.06	0.08	V
CHAR:60	VOL	Output Voltage low level	-	-	0.60	0.03	0.05	0.07	0.09	0.12	0.16	0.03	0.06	0.06	V
CHAR:61	VOL	Output Voltage low level	-	-	0.40	0.02	0.02	0.04	0.08	0.10	0.14	0.02	0.02	0.03	V
CHAR:62	RPULLUP	Pull-up resistor	3.50	5.60	8.50	4.57	4.98	5.54	4.50	5.32	5.45	4.50	5.32	5.45	kΩ
CHAR:63	RPULLDOWN	Pull-down resistor	3.50	5.60	8.50	4.46	4.82	5.29	4.38	4.51	5.16	4.33	4.51	5.16	kΩ
CHAR:64	IIL	Input leakage current(absolute value)	-	-	2.00	-	-	-	1.28	1.34	1.41	-	-	-	nA
CHAR:66	VHYSTTL	Input hysteresis LVTTL VDD > 2.7V	25.00	40.00	-	210.00	229.67	244.00	160.00	180.00	200.00	218.10	243.20	252.45	mV
CHAR:67	VHYSCMOS	Input hysteresis CMOS	0.05*VDD	-	-	12.98	15.35	17.78	14.15	14.84	17.78	12.66	12.94	17.54	mV
CHAR:80	VIH	Input Voltage high threshold	-	-	70.00	50.29	57.37	64.15	52.73	60.85	61.76	63.10	45.82	60.73	%
CHAR:81	VIL	Input Voltage low threshold	30.00	-	-	37.16	42.01	46.73	35.67	40.40	46.14	51.16	36.91	45.46	%
CHAR:83	CIN	Input Capacitance	-	-	7.00	1.95	3.21	4.65	2.30	3.43	5.60	1.95	3.20	4.65	pF

4.4.2 AC Specification data

CHAR ID	Parameter	Description	Specification			SkyWater AI			FAB25 Cu			FAB25 AI			Units
			Spec Min	Spec Typ	Spec Max	Char Min	Char Typ	Char Max	Char Min	Char Typ	Char Max	Char Min	Char Typ	Char Max	
CHAR:71	TRISEF	Rise time in Fast Strong Mode	2.00	-	12.00	1.98	2.98	4.26	4.25	9.93	10.85	2.32	2.97	5.00	ns
CHAR:72	TFALLF	Fall time in Fast Strong Mode	2.00	-	12.00	2.14	2.94	4.30	1.96	6.04	6.67	2.42	3.00	5.05	ns
CHAR:73	TRISES	Rise time in Slow Strong Mode	10.00	-	60.00	14.25	26.09	40.36	29.40	46.49	48.22	13.66	15.22	22.93	ns
CHAR:74	TFALLS	Fall time in Slow Strong Mode	10.00	-	60.00	13.57	26.75	43.98	36.05	54.16	56.68	11.67	12.06	18.26	ns
CHAR:75	FGPIOUT1	GPIO Fout;3.3V<=VDD<=5.5V. Fast Strong mode.	-	-	33.00	Functionally Tested			Functionally Tested			Functionally Tested			MHz
CHAR:76	FGPIOUT2	GPIO Fout;1.71V<=VDD<=3.3V. Fast Strong mode.	-	-	16.70	Functionally Tested			Functionally Tested			Functionally Tested			MHz
CHAR:77	FGPIOUT3	GPIO Fout;3.3V<=VDD<=5.5V. Slow Strong mode.	-	-	7.00	Functionally Tested			Functionally Tested			Functionally Tested			MHz
CHAR:78	FGPIOUT4	GPIO Fout;1.71V<=VDD<=3.3V. Slow Strong mode.	-	-	3.50	Functionally Tested			Functionally Tested			Functionally Tested			MHz
CHAR:79	FGPIOIN	GPIO input operating frequency;1.71V<=VDD<=5.5V	-	-	48.00	Functionally Tested			Functionally Tested			Functionally Tested			MHz
CHAR:86	TRESETWIDTH	Reset pulse width	1.00	-	-	0.12	0.13	0.15	0.13	0.15	0.17	0.12	0.13	0.15	µs
CHAR:87	TRESETWAKE	Wake-up time from Reset release	-	-	2.20	2.41	2.49	2.53	2.46	2.52	2.56	2.46	2.52	2.56	ms

4.5 Table-5 SRSS Specification

4.5.1 IMO & WCO AC Specification

CHAR ID	Parameter	Description	Specification			SkyWater Al			FAB25 Cu			FAB25 Al			Units
			Spec Min	Spec Typ	Spec Max	Char Min	Char Typ	Char Max	Char Min	Char Typ	Char Max	Char Min	Char Typ	Char Max	
CHAR:314	FILOTRIM1	Operating frequency	20.00	40.00	80.00	31.68	42.60	51.84	38.40	44.53	49.92	33.60	43.47	52.80	**MHz**
CHAR:308	FIMOTOL1	Frequency variation at 24, 32, and 48 MHz (trimmed)	23.52	-	24.48	23.81	24.13	24.39	23.62	23.88	24.11	23.69	23.89	24.35	**MHz**
CHAR:308	FIMOTOL1	Frequency variation at 24, 32, and 48 MHz (trimmed)	31.36	-	32.64	31.66	32.25	32.52	31.51	31.85	32.18	31.61	32.26	32.48	**MHz**
CHAR:308	FIMOTOL1	Frequency variation at 24, 32, and 48 MHz (trimmed)	47.04	-	48.96	47.29	47.68	48.67	47.47	48.02	48.56	47.46	47.68	48.66	**MHz**
CHAR:315	FWCO	Crystal Frequency	-	32.77	-	32.78	32.78	32.80	32.76	32.77	32.77	32.78	32.78	32.80	**kHz**
CHAR:316	FTOL	Frequency tolerance	-	50.00	250.00	-4.74	-0.31	3.56	-13.19	10.84	29.35	-4.74	-0.31	3.56	**ppm**

4.5.2 Block DC current Specification

CHAR ID	Parameter	Description	Specification			SkyWater Al			FAB25 Cu			FAB25 Al			Units
			Spec Min	Spec Typ	Spec Max	Char Min	Char Typ	Char Max	Char Min	Char Typ	Char Max	Char Min	Char Typ	Char Max	
CHAR:12	IDD2	Execute from Flash; CPU at 3 MHz, T = 25 C	-	1.40	2.00	0.72	0.76	1.15	0.36	1.01	1.64	0.69	0.73	1.13	**mA**
CHAR:15	IDD5	Execute from Flash; CPU at 6 MHz, T = 25 C	-	1.20	2.00	0.97	1.02	1.40	0.38	1.09	1.64	0.92	0.96	1.36	**mA**
CHAR:18	IDD8	Execute from Flash; CPU at 12 MHz, T = 25 C	-	1.60	3.20	1.38	1.46	1.84	1.10	1.40	1.67	1.30	1.35	1.75	**mA**
CHAR:21	IDD11	Execute from Flash; CPU at 24 MHz, T = 25 C	-	2.40	3.60	2.48	2.79	2.93	1.10	1.69	2.47	2.29	2.35	2.70	**mA**
CHAR:24	IDD14	Execute from Flash; CPU at 48 MHz, T = 25 C	-	4.60	6.00	4.31	4.62	4.88	1.26	2.61	4.48	4.00	4.11	4.42	**mA**
CHAR:27	IDD17	I2C wakeup, WDT, and Comparators on. T =25C	-	1.10	2.20	0.68	1.30	1.39	1.25	1.29	1.34	0.68	1.28	1.36	**mA**
CHAR:30	IDD20	I2C wakeup, WDT, and Comparators on. T =25C	-	3.10	6.20	1.39	2.21	2.73	1.25	1.89	2.80	1.33	1.94	2.45	**mA**
CHAR:33	IDD23	I2C wakeup, WDT, and Comparators on. T =25C	-	1.40	2.80	0.64	1.22	1.52	0.84	1.21	1.83	0.63	1.11	1.52	**mA**
CHAR:36	IDD23A	I2C wakeup, WDT, and Comparators on. T =25C	-	3.10	6.50	1.36	2.37	2.91	1.18	1.71	2.40	1.30	2.03	2.86	**mA**
CHAR:39	IDD26	I2C wakeup and WDT on. T = 25C	-	2.50	80.00	1.23	17.00	13.77	18.68	21.59	25.59	9.88	12.53	30.81	**µA**
CHAR:42	IDD29	I2C wakeup and WDT on. T = 25C	-	2.50	80.00	1.24	17.00	13.77	18.23	23.49	27.73	9.88	12.53	30.81	**µA**
CHAR:45	IDD32	I2C wakeup and WDT on. T = 25C	-	2.50	80.00	0.18	1.28	2.43	1.82	1.99	2.31	0.80	12.50	37.18	**µA**
CHAR:263	ITCPWM1	Block current consumption at 3 MHz	-	-	45.00	14.62	16.54	18.19	4.61	38.17	39.91	14.62	16.54	18.19	**µA**
CHAR:264	ITCPWM2	Block current consumption at 12 MHz	-	-	155.00	57.66	63.80	65.11	25.51	146.59	149.92	57.66	63.80	65.11	**µA**
CHAR:265	ITCPWM3	Block current consumption at 48 MHz	-	-	650.00	240.22	272.93	288.18	71.81	514.66	587.08	240.22	272.93	288.18	**µA**
CHAR:322	IWCO1	Operating Current (high power mode)	-	-	8.00	1.12	4.01	4.68	1.24	4.64	6.30	1.12	4.01	4.68	**uA**

4.6 Table-6 CTBm Specification

CHAR ID	Parameter	Description	Specification			SkyWater Al			FAB25 Cu			FAB25 Al			Units
			Spec Min	Spec Typ	Spec Max	Char Min	Char Typ	Char Max	Char Min	Char Typ	Char Max	Char Min	Char Typ	Char Max	
CHAR:97	IOUT_MAX_HI	power=hi	10.00	-	-	14.14	15.20	38.71	12.83	15.01	37.20	13.55	14.35	37.19	**mA**
CHAR:98	IOUT_MAX_MID	power=mid	10.00	-	-	14.01	15.19	38.76	12.43	13.76	34.03	12.45	13.17	34.27	**mA**
CHAR:99	IOUT_MAX_LO	power=lo	-	5.00	-	14.06	31.24	38.77	11.86	21.01	43.88	12.44	13.17	34.29	**mA**
CHAR:101	IOUT_MAX_HI	power=hi	4.00	-	-	6.73	6.95	10.07	6.84	7.45	10.47	6.62	7.35	10.29	**mA**
CHAR:102	IOUT_MAX_MID	power=mid	4.00	-	-	6.74	6.96	10.08	6.38	7.35	8.52	6.27	6.87	9.26	**mA**
CHAR:103	IOUT_MAX_LO	power=lo	-	2.00	-	6.74	9.61	10.08	6.29	7.70	9.77	6.64	7.65	8.01	**mA**
CHAR:116	VOUT_1	power=hi, Iload=10mA	-	-	0.50	0.13	0.36	0.47	0.14	0.24	0.40	0.13	0.34	0.36	**V**
CHAR:117	VOUT_2	power=hi, Iload=1mA	-	-	0.20	0.01	0.03	0.09	0.02	0.04	0.09	0.02	0.03	0.04	**V**
CHAR:118	VOUT_3	power=med, Iload=1mA	-	-	0.20	0.02	0.03	0.07	0.02	0.03	0.09	0.00	0.04	0.04	**V**
CHAR:119	VOUT_4	power=lo, Iload=0.1mA	-	-	0.20	0.00	0.02	0.07	0.00	0.01	0.06	0.00	0.02	0.02	**V**

4.7 Table-7 SAR ADC Specification

CHAR ID	Parameter	Description	Specification			SkyWater Al			FAB25 Cu			FAB25 Al			Units
			Spec Min	Spec Typ	Spec Max	Char Min	Char Typ	Char Max	Char Min	Char Typ	Char Max	Char Min	Char Typ	Char Max	
CHAR:201	A_INL_MIN	Integral Non Linearity. VDD = 1.71 to 5.5, 1 MSPS	-1.70	-	2.00	-1.23	-0.87	-0.59	-1.54	-1.11	-0.68	-0.83	-	-0.24	**LSB**
CHAR:202	A_INL_MAX	Integral Non Linearity. VDD = 1.71 to 5.5, 1 MSPS	-1.70	-	2.00	0.67	1.06	1.42	0.76	1.15	1.46	0.29	-	1.44	**LSB**
CHAR:204	A_DNL_MIN	Differential Non Linearity. VDD = 1.71 to 5.5, 1	-1.00	-	2.00	-0.88	-0.32	-0.06	-0.63	-0.46	-0.23	-0.44	-	-0.27	**LSB**
CHAR:205	A_DNL_MAX	Differential Non Linearity. VDD = 1.71 to 5.5, 1	-1.00	-	2.00	0.89	1.28	1.55	0.56	0.96	1.34	0.13	-	0.41	**LSB**

Document History Page

Rev.	ECN No.	Orig. of Change	Description of Change
**	6295632	VSD	PSoC4A_S2 APPLE FAB 25 Customer Characterization Report

Cypress Semiconductor Corporation
CY8CMBR3XXX
FAB25 CHARACTERIZATION REPORT

Design Engineering Director
Sreenivasa (Srinivasa Rao) Prerepa
rao@cypress.com

Product Engineering Director
Toan Ong
tto@cypress.com

Product Engineer
Vincent Uy
vau@cypress.com

Applications Engineer
Jaya Kathuria
xkj@cypress.com

Marketing Engineer
Steven Chen
stvc@cypress.com

www.cypress.com

198 Champion Ct.
San Jose, CA 95134 USA

Tel: (408) 943 2600
Fax: (408) 943 4730

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2.0 Introduction

2.1 General Description

Street Fighter is a cost-optimized, register-configurable CapSense® Express™ solution for the high-volume, low-end market (buttons and proximity sensor). The primary requirement includes an M0 core CPU, CSD PLUS™ sensing algorithm, SmartSense_EMCPLUS™ Auto-tuning with appropriate analog and digital circuitry and I^2C communication to serve the target capacitive touch sensing applications.

Street Fighter will also be marketed as an entry-level PSoC4 architecture product to compete with MCUs as a different product family from the Capsense products. As this is a future PSoC product with a separate NPP and WPP, there will be NO CHANGES to support this IP (m0s8tcpwm) in the Street Fighter FW, Street Fighter Systems, or other Street Fighter WPP items (e.g. App notes, Kits, Creator components, TRM, etc).

The development does not require any new technology and will focus on having the right feature combination in a low-memory, low-pin-count, low-cost device.

Feature set summary:

Street Fighter will introduce features such as proximity sensing, water tolerance, robust noise immunity, available in the CapSense and CapSensePLUS portfolio to the CapSense Express portfolio.

Features offered in the highest pin count package are:

1. CapSense Sensors – 16 (16 Pins)
2. CapSense CSD PLUS™ sensing along with SmartSense_EMCPLUS Auto-Tuning algorithm
3. 8 GPIOs with FW (firmware) controlled PWM capability for LED drive
   (8 GPIO pins multiplexed with 8 of the CapSense ports)
4. FW controlled PWM drive for DC Piezo Buzzer (1 pin)
5. TCPWM block for PWM applications requiring jitter-free Pulse-width modulation
6. I^2C block with wake on address match (2 pins)
7. XRES pin (1 pin)
8. Water Tolerance – 1 Shield electrode (1 pin)
9. Host Interrupt (1 pin)
10. 16 KB program memory (Flash) with FW enabled configurations
11. Three operating modes: Active, Sleep and Deep Sleep

Considering the low FG cost requirement and market needs, four packages are planned SOIC-8, SOIC-16, QFN-16 & QFN-24.

Figure1: Pin Diagram and Definitions - CY8CMBR3116

24-QFN						Pin Diagram
Pin #	Pin Name	Type	Description	If unused	Default Configuration	
1	CS0/PS0	–	CapSense button / proximity sensor, controls GPO0	Ground/Ground	CS0	
2	CS1/PS1	–	CapSense button / proximity sensor, controls GPO1	Ground/Ground	CS1	
3	CS2/GUARD	–	CapSense button / guard sensor, controls GPO2	Ground/Ground	CS2	
4	CS3	–	CapSense button, controls GPO3	Ground	CS3	
5	CMOD	–	External modulator capacitor. Connect 2.2 nF/5 V/X7R or NPO capacitor	NA	CMOD	
6	VCC	Power	Internal regulator output. Connect a 0.1-µF decoupling capacitor if VDD > 1.8 V. If VDD is 1.71 V to 1.89 V, short this pin to VDD.	NA	VCC	
7	VDD	Power	Power	NA	VDD	
8	VSS	Power	Ground	NA	VSS	
9	CS15/SH/$\overline{HI}$	I/DO	CapSense button / shield electrode/ Host Interrupt (SPO1 in the register map)	Refer to Unused SPO Pin Connection on page 15	$\overline{HI}$	

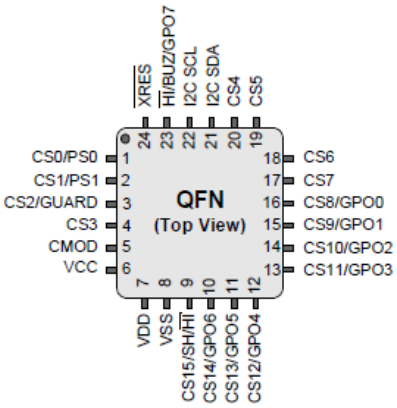
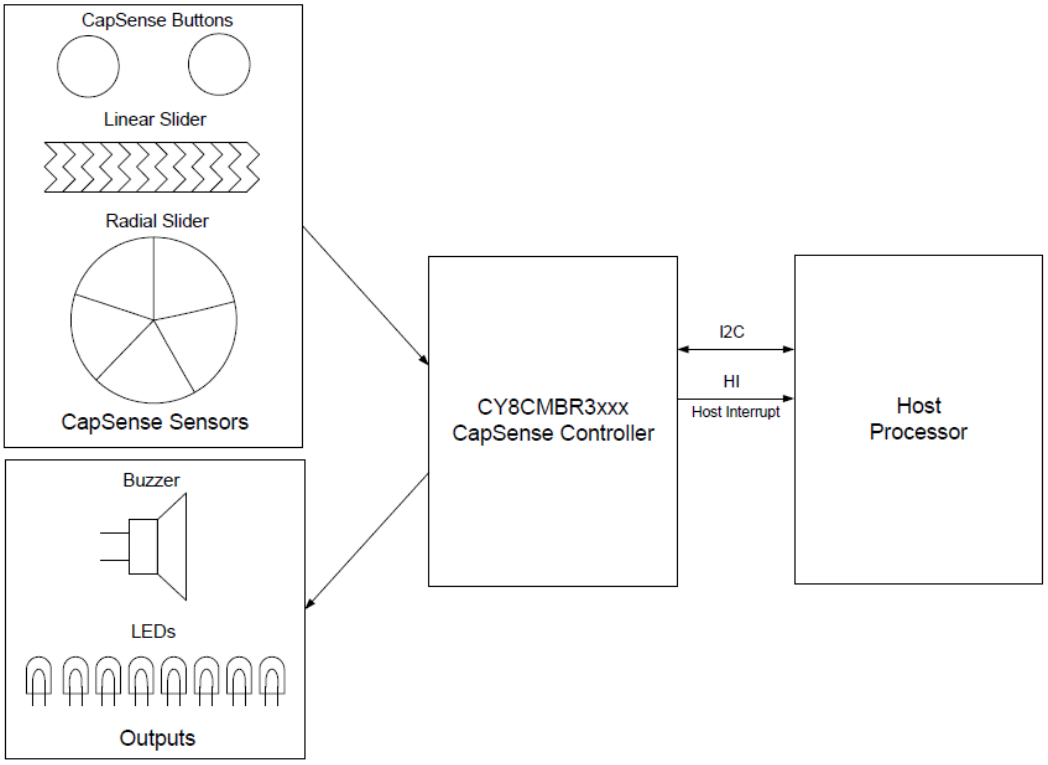


Figure2: Typical Capsense System



2.2 Datasheet

The CY8CMBR3XXX meets all datasheet specifications. The datasheet 001-85330 Rev ** is available under NDA through your local Cypress sales representative

2.3 Reference Documents and Application Notes

REF	NAME	DESCRIPTION / COMMENTS
FLOW SPECS		
00-00064	Cypress Record Retention Policy	
001-05054	Low Power Design Requirements and Practices (Best Practices/Guidelines)	
001-06452	Corporate Whole Product Plan (WPP) Methodology	
001-06610	Corporate Whole Product Plan (WPP) Template	
001-07907	CAPSENSE PERFORMANCE SPECIFICATIONS	
001-08694	Data Sheet Template In Frame maker	
001-29419	Automotive Production Launch Checklist	
001-55157	Firmware Design and Coding Rules and Best Practices	
001-55273	Product Traceability Matrix Protocol Spec ™	
001-58517	EROS Review Board (ERB) Requirements	
001-59468	SYSTEM/SOLUTION EROS INSTRUCTIONS & TEMPLATES	
001-64430	PSOC4A EROS	
001-76282	M0S8 PLATFORM TEST EXTERNAL REQUIREMENTS OBJECTIVE SPEC	
001-84315	Street Fighter Solution EROS	
01-00012	New Product Development Methodology	
01-00081	Latch-Up Test Methodology	
01-00290	IP Block Development Methodology	
01-00349	Corporate JTAG ID Code Registry	
01-02002	CHIP PLATFORM EXTERNAL REQUIREMENTS OBJECTIVE SPEC (EROS) TEMPLATE	
01-02120	JTAG TAP and Boundary Scan Circuits EROS	Cypress requirements for the JTAG port and boundary scan circuits
16-00115	TEST VECTOR QUALIFICATION SPECIFICATION	
25-00020	ESD Test Methodology	
28-00065	New Product Plan (NPP) Methodology	Development procedure from definition to volume production
30-00034	Design Automation Project Process	
67-05001	FAB4 SORT Acceptance Criteria	

2.4 Qualification Report

The Street Fighter CY8CMBRXXX is qualified under QTP # 175110

3.0 Characterization Hardware and Setup

3.1 DC Measurement System and Hardware

Temperature Forcing System
The Temptronics 4310 Precision Temperature Forcing System is used to force ambient/industrial operating temperature -45°C, 135°C and 25°C.

Power Supply
NIPXIe 4140- 4 channels SMU used to supply operating voltage to multiple DUT as well as to measure drawn current.

Digital Multi Meter
NI PXI4070 61/2 digit multi meter was used to measure voltages at 10 NPLC configuration.

Clock Input
Tektronix AFG 3252 Arbitrary Function Generator was used to input clock to the device and as an interrupt generator

Oscilloscope
Tektronix DPO7254 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 and temperature conditions.
FAB: Spansion FAB25

Table 1: Test Condition

Supply Voltage & Temperature	Min	Typical	Max
VDD (V)	1.8	3.3	5.51
VCC (V)	1.71 (Regulator Bypassed)	1.8 (Regulator Bypassed)	2 (Regulator Bypassed)
Temperature (°C)	-45	25	105

4.0 Characterization Data

4.1 XRES DC Specifications

				CY8CBR3XXX DataSheet				SKY Water Char Data			FAB25 Al Char Data			FAB25 Cu Char Data		
ID	Parameter	Description	Condition	Spec Min	Spec Typ	Spec Max	Units	Char Min	Char Typ	Char Max	Char Min	Char Typ	Char Max	Char Min	Char Typ	Char Max
CHAR.68	VIH_XRES	Input High Voltage on XRES pin	CMOS input	0.70* VDDIO	-	-	V	0.51	0.61	0.62	0.53	0.63	0.64	0.53	0.63	0.64
CHAR.69	VIL_XRES	Input Low Voltage on XRES pin	CMOS input	-	-	0.3* VDDIO	V	0.37	0.40	0.41	0.38	0.40	0.51	0.38	0.40	0.51
CHAR.193	Cin_XRES	Input Capacitance on XRES pin		-		7	pF	-	-	-	-	-	-	2.400	3.300	4.000
CHAR.194	Vhysxres	Input voltage hysteresis on XRES pin	Vdd < 4.5 V	85	225	-	mV	-	0.07	-	-	0.08	-	-	0.080	-
CHAR.194A	Vhysxres	Input voltage hysteresis on XRES pin	Vdd > 4.5 V	200	-	-	mV	276.00	281.00	329.00	235.00	266.98	325.00	235.00	266.98	325.00
CHAR.70	Rpullup	Pull-up Resistance		3.50	-	8.50	kΩ	4.65	5.07	5.65	-	-	-	4.840	5.023	5.248

4.2 DC I/O Port Specifications

				CY8CBR3XXX DataSheet				SKY Water Char Data			FAB25 Al Char Data			FAB25 Cu Char Data		
ID	Parameter	Description	Condition	Spec Min	Spec Typ	Spec Max	Units	Char Min	Char Typ	Char Max	Char Min	Char Typ	Char Max	Char Min	Char Typ	Char Max
CHAR.413	Voh_3V	Output Voltage high level.	Ioh = -4 mA @ 3V VDD	2.4	-	-	V	2.8529	2.746	2.7031	2.8595	2.7732	2.7669	2.858	2.823	2.780
CHAR.414	Voh_1.8V	Output Voltage high level.	Ioh = -1 mA @ 1.8V VDD	1.3	-	-	V	1.7574	1.6999	1.6895	1.7574	1.7045	1.7017	1.758	1.733	1.705
CHAR.415	Vol_1.8V	Output Voltage low level.	Iol =4 mA @1.8V VDD	-	-	0.5	V	0.0767	0.1795	0.2202	0.0637	0.142	0.1458	0.066	0.098	0.138
CHAR.416	Vol_3V	Output Voltage low level.	Iol = 10 mA (IOL_LED) @ 3V VDD	-	-	0.6	V	0.1552	0.3327	0.4405	0.1366	0.2387	0.2472	0.122	0.169	0.230
CHAR.97	CPIN	Max pin capacitance	-40°C to +85°C TA, ALL VDD, all package, ALL IOs	-	3	7	pF	-		-	-	-	-	2.100	3.100	4.300
CHAR.113	ITOT_GPIO	Maximum Total Sink Chip Current		-	-	85	mA	Functionally covered in ESD test			Functionally covered in ESD test			Functionally covered in ESD test		

4.3 AC Chip Level Specifications

				CY8CBR3XXX DataSheet				SKY Water Char Data			FAB25 Al Char Data			FAB25 Cu Char Data		
ID	Parameter	Description	Condition	Spec Min	Spec Typ	Spec Max	Units	Char Min	Char Typ	Char Max	Char Min	Char Typ	Char Max	Char Min	Char Typ	Char Max
CHAR.68	Tsr_power_up	Power supply slew rate during powerup	-40°C to +85°C TA, ALL VDD	1	-	67	V/mS	-	-	144	-	-	144	-	-	144

4.4 XRES AC Specifications

				CY8CBR3XXX DataSheet				SKY Water Char Data			FAB25 Al Char Data			FAB25 Cu Char Data		
ID	Parameter	Description	Condition	Spec Min	Spec Typ	Spec Max	Units	Char Min	Char Typ	Char Max	Char Min	Char Typ	Char Max	Char Min	Char Typ	Char Max
CHAR.195	TXRES	External reset pulse width	-40°C to +85°C TA, ALL VDD	5	-	-	us	0.16	0.161	0.17	0.116	0.1482	0.158	0.134	0.145	0.156

4.5 I²C Specifications

				CY8CBR3XXX DataSheet				SKY Water Char Data			FAB25 Al Char Data			FAB25 Cu Char Data		
ID	Parameter	Description	Condition	Spec Min	Spec Typ	Spec Max	Units	Char Min	Char Typ	Char Max	Char Min	Char Typ	Char Max	Char Min	Char Typ	Char Max
CHAR.159	FSCLI2C_FM	I2C SCL clock frequency	Fast Mode	**0**	-	**400**	**kHz**	-	-	400	-	-	400	-	-	400
CHAR.161	THDSTAI2C_FM	Hold time (repeated) START condition. After this period, the first clock pulse is generated	Fast Mode	-	-	**600**	**nS**	-115	-92.33	-45	-150	-102.7	-40	-115.00	-98.23	-65.00
CHAR.163	TSUSTAI2C_FM	Setup time for a repeated START condition	Fast Mode	-	-	**600**	**nS**	70	276	330	120	348.65	420.1	150.00	277.00	420.00
CHAR.165	TLOWI2C_FM	LOW period of the SCL clock	Fast Mode	-	-	**1300**	**nS**	317.5	461.83	547.5	287.5	395.5	487.5	367.50	445.77	517.50
CHAR.167	THIGHI2C_FM	HIGH period of the SCL clock	Fast Mode	-	-	**600**	**nS**	-	-	400	-	-	400	-	-	490.00
CHAR.168	THDDATI2C	Data hold time	All I2C speeds	-	-	**0**	**nS**	-	-	-20	-	-	-20	-	-	-27.00
CHAR.170	TSUDATI2C_FM	Data setup time	Fast Mode	-	-	**100**	**nS**	-15	8.75	22.5	-10	2.84	30	-10.00	5.50	15.00
CHAR.172	TSUSTOI2C_FM	Setup time for I2C STOP condition	Fast Mode	-	-	**600**	**nS**	-30	20.67	60	-30	17.57	80	-20.00	20.65	70.00
CHAR.174	CB_FM	Capacitive load for each I2C bus line	Fast Mode	-	-	**400**	**pF**	-	-	400	-	-	400	-	-	400.00
CHAR.176	TVDDATI2C_FM	Data valid time	Fast Mode	-	-	**900**	**nS**	440	691	730	490	691.92	740	600.00	646.77	680.00
CHAR.178	TVDACKI2C_FM	Data valid acknowledge time	Fast Mode	-	-	**900**	**nS**	440	691	730	490	691.92	740	600.00	646.77	680.00
CHAR.179	TSPI2C_FM	Pulse width of spikes suppressed by input filter	Fast Mode	**50**	-	-	**nS**	56	60.8	79	58	65.89	79	58.00	65.89	79.00
CHAR.181	TBUFI2C_FM	Bus free time between a STOP and START condition	Fast Mode	-	-	**1300**	**nS**	-	-	1200	-	-	1200	-	-	1200.00
CHAR.182	VIL_I2C	Input low voltage	Fast and standard mode I2C speeds	**0.3*VDD**	-	-	**V**	0.41	0.43	0.51	0.42	0.43	0.51	0.420	0.470	0.500
CHAR.183	VIH_I2C	Input high Voltage	Fast and standard mode I2C speeds	-	-	**0.7*VDD**	**V**	0.54	0.6	0.62	0.56	0.62	0.63	0.540	0.570	0.620
CHAR.184	VOL_I2C_L	Output low voltage, low supply range	Fast and standard mode I2C speeds, VDD < 2V, 2 mA sink	-	-	**0.2**	**V**	0.0254	0.0661	0.0783	0.0215	0.0408	0.0481	0.069	0.091	0.116
CHAR.185	VOL_I2C_H	Output low voltage, high supply range	Fast and standard mode I2C speeds, VDD > 2V, 3 mA sink	-	-	**0.4**	**V**	0.0512	0.1384	0.1671	0.0355	0.0916	0.0942	0.036	0.046	0.058
CHAR.190	IOL_I2C_FM	I2C output low current	Fast Mode, 1.71V ≤ VDD ≤ 5.5V, load = CB_SM, VOL = 0.6V	**6**	-	-	**mA**	6	-	-	6	-	-	6	-	-
CHAR.187A	I2C_VHYS_5V5	I2C input hysteresis	Fast and standard mode I2C speeds, VDD > 4.5V & < 5.5V	**200**	-	-	**mV**	276	280	329	304	310.8	354	240.000	291.000	350.000
CHAR.187	I2C_VHYS_HV	I2C input hysteresis	Fast and standard mode I2C speeds, VDD > 2V & < 4.5V	**0.05*VDD**	-	-	**mV**	0.06	0.06	0.08	0.08	0.08	0.2	0.050	0.094	0.110
CHAR.188	I2C_VHYS_LV	I2C input hysteresis	Fast and standard mode I2C speeds, VDD < 2V	**0.10*VDD**	-	-	**mV**	0.12	0.12	0.19	0.119	0.12	0.189	0.080	0.132	0.221

Document History Page

Rev.	ECN No.	Orig. of Change	Description of Change
**	6268788	VSD	CY8CMBR3XXX FAB25 Characterization Report

Sales, Solutions, and Legal Information

Worldwide Sales and Design Support

Cypress maintains a worldwide network of offices, solution centers, manufacturer's representatives, and distributors. To find the office closest to you, visit us at cypress.com/sales.

Products

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LCD Drive psoc.cypress.com/lcd-drive
CAN 2.0b psoc.cypress.com/can
USB psoc.cypress.com/usb

Cypress Semiconductor
Product Qualification Report

QTP#175110 VERSION**
September 2018

CapSense® MBR3 Device Family S8PF-10R, Fab25 (Cu BEOL Interconnect)	
CY8CMBR3116 **CY8CMBR3106** **CY8CMBR3108** **CY8CMBR3002** **CY8CMBR3102** **CY8CMBR3110**	**CapSense® Express™ Controllers with SmartSense™ Auto-tuning**

FOR ANY QUESTIONS ON THIS REPORT, PLEASE CONTACT
reliability@cypress.com or via a CYLINK CRM CASE

Prepared By:
Honesto Sintos
Reliability Engineer

Reviewed By:
Sandhya Chandrashekhar
Reliability Principal Engineer

Approved By:
David Hoffman
Reliability Director

PACKAGE/PRODUCT QUALIFICATION HISTORY

QTP Number	Description of Qualification Purpose	Date
151008	Qualification of S8* Technology in Fab25 Using TSG6M Device (AL BEOL Interconnect)	Dec 2015
151403	Qualification of PSoC® 4100 and PSoC® 4200 Device, S8PF-10R Technology in Fab25 (AL BEOL Interconnect)	Dec 2015
151303	Qualification of CapSense® MBR3 Device, S8PF-10R Technology in Fab25 (AL BEOL Interconnect)	Dec 2015
160401	Qualification of TrueTouch® Fingerprint Device, S8PFHD-10R Technology in Fab25 (AL BEOL Interconnect)	May 2016
160301	Qualification of TrueTouch® Gen6XL Touchscreen Controller Device, S8SPF-10P Technology in Fab25 (AL BEOL Interconnect)	Jun 2016
160803	Qualification of PSoC® 4000S Device, S8PFHD-10R Technology in Fab25 (AL BEOL Interconnect)	Jun 2016
160207	Qualification of PSoC3 Leopard T06, S8P12-10P Technology in Fab25 (AL BEOL Interconnect)	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
175110	Qualification of CapSense® MBR3 Device Family, S8PF-10R in Fab25 (Cu BEOL Interconnect)	Sept 2018

PRODUCT DESCRIPTION (for qualification)	
Qualification Purpose: Qualification of CapSense® MBR3 Device Family, S8PF-10R in Fab25 (Cu BEOL Interconnect)	
Marketing Part #:	CY8CMBR3116 / CY8CMBR3106 / CY8CMBR3108 / CY8CMBR3002 / CY8CMBR3102 CY8CMBR3110
Device Description:	CapSense® Express™ Controllers with SmartSense™ Auto-tuning
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 / S8PF-10P

MAJOR PACKAGE INFORMATION USED IN THIS QUALIFICATION	
Package Designation:	LQ24A
Package Outline, Type, or Name:	QFN24L (4x4x0.6mm)
Mold Compound Name/Manufacturer:	GE 7470 / Nitto
Mold Compound Flammability Rating:	UL94 V-0
Mold Compound Alpha Emission Rate:	N/A (not low alpha mold compound)
Oxygen Rating Index: >28%	54%
Lead Frame Designation:	FMP
Lead Frame Material:	Pre-plated leadframe with base Copper
Substrate Material:	N/A
Lead Finish, Composition / Thickness:	NiPdAu
Die Backside Preparation Method/Metallization:	Backgrind
Die Separation Method:	Wafer Saw
Die Attach Supplier:	Henkel
Die Attach Material:	QMI-519
Bond Diagram Designation	001-88426
Wire Bond Method:	Thermosonic
Wire Material/Size:	CuPd / 0.8 mil
Thermal Resistance Theta JA °C/W:	38.01 CW (QFN24)
Package Cross Section Yes/No:	No
Assembly Process Flow:	001-87690M
Name/Location of Assembly (prime) facility:	CML-RA
MSL LEVEL	3
REFLOW PROFILE	260C

MAJOR PACKAGE INFORMATION USED IN THIS QUALIFICATION	
Package Designation:	LQ16A
Package Outline, Type, or Name:	QFN16L (3x3x0.6mm)
Mold Compound Name/Manufacturer:	G700 / Sumitomo
Mold Compound Flammability Rating:	UL 94 V=0 pass
Mold Compound Alpha Emission Rate:	N/A (not low alpha mold compound)
Oxygen Rating Index: >28%	54%
Lead Frame Designation:	FMP
Lead Frame Material:	Copper with Ag-Spot Plating
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:	FH900
Bond Diagram Designation	001-88428
Wire Bond Method:	Thermosonic
Wire Material/Size:	CuPd / 0.8mil
Thermal Resistance Theta JA °C/W:	49.6 C/W (QFN16)
Package Cross Section Yes/No:	No
Assembly Process Flow:	001-89390M
Name/Location of Assembly (prime) facility:	ASEK Taiwan (G)
MSL LEVEL	3
REFLOW PROFILE	260C

PACKAGE AVAILABILITY

PACKAGE	WIRE MATERIAL	ASSEMBLY SITE	QTP NUMBER
16/24-Pin QFN	CuPd	CML-Philippines (RA)	140804
16/24-Pin QFN	CuPd	ASEK-Taiwan (G)	134505
16/24-Pin QFN	CuPd	UTAC-Thailand (UT)	141704
8-Lead SOIC	CuPd	UTAC-Thailand (UT)	134513
16-Lead SOIC	CuPd	UTAC-Thailand (UT)	134506

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	1,548 Devices	0	N/A	N/A	0 PPM 1
High Temperature Operating Life Long Term Failure Rate	550,000	0	0.7	170	10 FIT 2

1. EFR devices number is based on QTP#175110 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#175110 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 #: 175110

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: ACOUSTIC, MSL3							
CY8CMBR31167 (8CP44334)	3817045	611814628	CML-RA	COMP	22	0	
STRESS: DATA RETENTION, PLASTIC, 175C							
CY8CMBR31167 (8CP44334)	3817045	611814628	CML-RA	76	79	0	
CY8CMBR31167 (8CP44334)	3817045	611814628	CML-RA	152	79	0	
STRESS: ENDURANCE (100K CYCLES)							
CY8C4014LQI7 (8CP44333C)	3817045	611815693	ASEK-G	CYCLING	80	0	
CY8C4014LQI7 (8CP44333C)	3817045	611815693	ASEK-G	168	80	0	
STRESS: HIGH TEMP DYNAMIC OPERATING LIFE-EARLY FAILURE RATE (150C, 2.07V, Vcc Max)							
CY8C4014LQI7 (8CP44333C)	3817045	611815693	CML-RA	48	1548	0	
STRESS: ESD-CHARGE DEVICE MODEL (500V)							
CY8CMBR31167 (8CP44334)	3817045	611814628	CML-RA	500	9	0	
CY8C4014LQI7 (8CP44333C)	3817045	611815693	ASEK-G	500	9	0	
CY8C4014SXI7 (8C44332CB)	3817045	611817296	CML-RA	500	9	0	
CY8C4014SXI7 (8C44331CB)	3817045	611817297	CML-RA	500	9	0	
CY8C4014PVI7 (8CP44335C)	3817045	611814629	CML-RA	500	9	0	
STRESS: ESD-CHARGE DEVICE MODEL (750V)							
CY8CMBR31167 (8CP44334)	3817045	611814628	CML-RA	750	3	0	
CY8C4014LQI7 (8CP44333C)	3817045	611815693	ASEK-G	750	3	0	
CY8C4014SXI7 (8C44332CB)	3817045	611817296	CML-RA	750	3	0	
CY8C4014SXI7 (8C44331CB)	3817045	611817297	CML-RA	750	3	0	
CY8C4014PVI7 (8CP44335C)	3817045	611814629	CML-RA	750	3	0	
STRESS: ESD-CHARGE DEVICE MODEL (1000V)							
CY8CMBR31167 (8CP44334)	3817045	611814628	CML-RA	1000	3	0	
CY8C4014LQI7 (8CP44333C)	3817045	611815693	ASEK-G	1000	3	0	
CY8C4014SXI7 (8C44332CB)	3817045	611817296	CML-RA	1000	3	0	
CY8C4014SXI7 (8C44331CB)	3817045	611817297	CML-RA	1000	3	0	
CY8C4014PVI7 (8CP44335C)	3817045	611814629	CML-RA	1000	3	0	
STRESS: ESD-CHARGE DEVICE MODEL (1250V)							
CY8CMBR31167 (8CP44334)	3817045	611814628	CML-RA	1250	3	0	
CY8C4014LQI7 (8CP44333C)	3817045	611815693	ASEK-G	1250	3	0	
CY8C4014SXI7 (8C44332CB)	3817045	611817296	CML-RA	1250	3	0	
CY8C4014SXI7 (8C44331CB)	3817045	611817297	CML-RA	1250	3	0	
CY8C4014PVI7 (8CP44335C)	3817045	611814629	CML-RA	1250	3	0	

Reliability Test Data

QTP #: 175110

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: ESD-CHARGE DEVICE MODEL (1500V)							
CY8CMBR31167 (8CP44334)	3817045	611814628	CML-RA	1500	3	0	
CY8C4014LQI7 (8CP44333C)	3817045	611815693	ASEK-G	1500	3	0	
CY8C4014SXI7 (8C44332CB)	3817045	611817296	CML-RA	1500	3	0	
CY8C4014SXI7 (8C44331CB)	3817045	611817297	CML-RA	1500	3	0	
CY8C4014PVI7 (8CP44335C)	3817045	611814629	CML-RA	1500	3	0	
STRESS: ESD-CHARGE DEVICE MODEL (1750V)							
CY8CMBR31167 (8CP44334)	3817045	611814628	CML-RA	1750	3	0	
CY8C4014LQI7 (8CP44333C)	3817045	611815693	ASEK-G	1750	3	0	
CY8C4014SXI7 (8C44332CB)	3817045	611817296	CML-RA	1750	3	0	
CY8C4014SXI7 (8C44331CB)	3817045	611817297	CML-RA	1750	3	0	
CY8C4014PVI7 (8CP44335C)	3817045	611814629	CML-RA	1750	3	0	
STRESS: ESD-CHARGE DEVICE MODEL (2000V)							
CY8CMBR31167 (8CP44334)	3817045	611814628	CML-RA	2000	3	0	
CY8C4014LQI7 (8CP44333C)	3817045	611815693	ASEK-G	2000	3	0	
CY8C4014SXI7 (8C44332CB)	3817045	611817296	CML-RA	2000	3	0	
CY8C4014SXI7 (8C44331CB)	3817045	611817297	CML-RA	2000	3	0	
CY8C4014PVI7 (8CP44335C)	3817045	611814629	CML-RA	2000	3	0	
STRESS: ESD-HUMAN BODY MODEL PER JESD22, METHOD A114							
CY8CMBR31167 (8CP44334)	3817045	611814628	CML-RA	1100	3	0	
CY8C4014LQI7 (8CP44333C)	3817045	611815693	ASEK-G	1100	3	0	
CY8CMBR31167 (8CP44334)	3817045	611814628	CML-RA	2200	8	0	
CY8C4014LQI7 (8CP44333C)	3817045	611815693	ASEK-G	2200	3	0	
CY8CMBR31167 (8CP44334)	3817045	611814628	CML-RA	3300	3	0	
CY8C4014LQI7 (8CP44333C)	3817045	611815693	ASEK-G	3300	3	0	
CY8CMBR31167 (8CP44334)	3817045	611814628	CML-RA	4000	3	0	
CY8C4014LQI7 (8CP44333C)	3817045	611815693	ASEK-G	4000	3	0	
CY8CMBR31167 (8CP44334)	3817045	611814628	CML-RA	5000	3	0	
CY8C4014LQI7 (8CP44333C)	3817045	611815693	ASEK-G	5000	3	0	
CY8CMBR31167 (8CP44334)	3817045	611814628	CML-RA	6000	3	0	
CY8C4014LQI7 (8CP44333C)	3817045	611815693	ASEK-G	6000	3	0	
CY8CMBR31167 (8CP44334)	3817045	611814628	CML-RA	7000	3	0	
STRESS: HIGH TEMP DYNAMIC OPERATING LIFE-LATENT FAILURE RATE (150C, 2.07V, Vcc Max)							
CY8C4014LQI7 (8CP44333C)	3817045	611815693	ASEK-G	500	80	0	
STRESS: PRESSURE COOKER TEST (121C, 100%RH), 15 Psig, PRE COND 192 HR 30C/60%RH (MSL3)							
CY8CMBR31167 (8CP44334)	3817045	611814628	CML-RA	96	79	0	
CY8CMBR31167 (8CP44334)	3817045	611814628	CML-RA	168	79	0	
CY8CMBR31167 (8CP44334)	3817045	611814628	CML-RA	288	79	0	

Reliability Test Data

QTP #: 175110

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: PRE/POST LFR PARAMETER ASSESSMENT							
CY8C4014LQI7 (8CP44333C)	3817045	611815693	ASEK-G	COMP	10+2S	0	
STRESS: STATIC LATCH-UP (125C, 100mA)							
CY8CMBR31167 (8CP44334)	3817045	611814628	CML-RA	COMP	3	0	
CY8C4014LQI7 (8CP44333C)	3817045	611815693	ASEK-G	COMP	3	0	
STRESS: STATIC LATCH-UP (125C, 140mA)							
CY8CMBR31167 (8CP44334)	3817045	611814628	CML-RA	COMP	3	0	
CY8C4014LQI7 (8CP44333C)	3817045	611815693	ASEK-G	COMP	3	0	
STRESS: STATIC LATCH-UP (85C, 140mA)							
CY8CMBR31167 (8CP44334)	3817045	611814628	CML-RA	COMP	3	0	
CY8C4014LQI7 (8CP44333C)	3817045	611815693	ASEK-G	COMP	3	0	
STRESS: STATIC LATCH-UP (85C, 200mA)							
CY8CMBR31167 (8CP44334)	3817045	611814628	CML-RA	COMP	3	0	
CY8C4014LQI7 (8CP44333C)	3817045	611815693	ASEK-G	COMP	3	0	
STRESS: STATIC LATCH-UP (85C, 300mA)							
CY8CMBR31167 (8CP44334)	3817045	611814628	CML-RA	COMP	3	0	
CY8C4014LQI7 (8CP44333C)	3817045	611815693	ASEK-G	COMP	3	0	
STRESS: TC COND. C -65C TO 150C, PRE COND 192 HRS 30C/60%RH (MSL3)							
CY8CMBR31167 (8CP44334)	3817045	611814628	CML-RA	500	80	0	
CY8CMBR31167 (8CP44334)	3817045	611814628	CML-RA	1000	80	0	

Document History Page

Document Title: QTP#175110: CAPSENSE MBR3 DEVICE FAMILY S8PF-10R, FAB25 (CU BEOL INTERCONNECT)
Document Number: 002-25057

Rev.	ECN No.	Orig. of Change	Description of Change
**	6300062	HSTO	Initial Spec Release

AFFECTED MPNS
CY8CMBR3002-SX1I
CY8CMBR3002-SX1IT
CY8CMBR3102-SX1I
CY8CMBR3102-SX1IT
CY8CMBR3106S-LQXI
CY8CMBR3106S-LQXIT
CY8CMBR3108-LQXI
CY8CMBR3108-LQXIT
CY8CMBR3110-SX2I
CY8CMBR3110-SX2IT
CY8CMBR3116-LQXI
CY8CMBR3116-LQXIT
CY8CMBR3145-LQXI
CY8CMBR3145-LQXIT
CY8CMBR3150-LQXI
CY8CMBR3150-LQXIT
CY8CMBR3155-LQXI
CY8CMBR3155-LQXIT
CY8CMBR3175-LQXI
CY8CMBR3175-LQXIT
CY8CMBR3195-LQXI
CY8CMBR3195-LQXIT
CG8164AA
CG8164AAT
CG8164BA
CG8164BAT
CG8337AA
CG8337AAT
CG8341AM
CG8341AMT
CG8356AA
CG8356AAT
CG8470AM
CG8470AMT
CG8609AM
CG8609AMT
CG8632AA
CG8632AAT
CG8638AM
CG8638AMT
CG8653AA
CG8653AAT
CP3155
CP3155B
CP3155BT
CP3155T

CP8338AT
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CY8C4013SXI-411
CY8C4013SXI-411T
CY8C4014LQI-412
CY8C4014LQI-412T
CY8C4014LQI-421
CY8C4014LQI-421T
CY8C4014LQI-422
CY8C4014LQI-422T
CY8C4014LQI-SLT1
CY8C4014LQI-SLT2
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CY8C4124LQI-S412T
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CY8C4126AXI-S433
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CY8C4146LQI-S423
CY8C4146LQI-S423T
CY8C4146LQI-S432
CY8C4146LQI-S432T
CY8C4146LQI-S433
CY8C4146LQI-S433T
CY8C4146WI-S423
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CG8784AMT