Cypress Semiconductor
Product Qualification Report

QTP#164014 version**
March 2020

PSoC® Emerald Device Family S4AD-5 Technology, FAB 3	
CY8C28243 / CY8C28403 CY8C28413 / CY8C28433 CY8C28445 / CY8C28452 CY8C28513 / CY8C28533 CY8C28545 / CY8C28623 CY8C28643 / CY8C28645	PSoC® Programmable System-on-Chip

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PRODUCT QUALIFICATION HISTORY

Qual Report	Description of Qualification Purpose	Date Comp
060605	Qualify GSMC using PSoC Device Product Family on S4AD-5 Technology	Aug 06
072502	PSoC 8C29000A Hydra Device on SONOS S4AD-5 Technology, Transfer to Fab 3 (GSMC)	Dec 08
164014	PSoC Emerald Device on SONOS S4AD-5 Technology, Transfer to Fab 3 (HHGrace)	Mar 20

PRODUCT DESCRIPTION	
Qualification Purpose: PSoC Emerald Device on SONOS S4AD-5 Technology, Transfer to Fab 3 (HHGrace)	
Marketing Part #:	CY8C28243 / CY8C28403 / CY8C28413 / CY8C28433 / CY8C28445 / CY8C28452 CY8C28513 / CY8C28533/ CY8C28545 / CY8C28623 / CY8C28643 / CY8C28645
Device Description:	PSoC® Programmable System-on-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 Materials:			Proprietary
Generic Process Technology/Design Rule:			Proprietary
Gate Oxide Material/Thickness (MOS):			Proprietary
Name/Location of Die Fab (prime) Facility:			HHGrace / Shanghai-China
Die Fab Line ID/Wafer Process ID:			S4AD-5

PACKAGE AVAILABILITY

PACKAGE	ASSEMBLY FACILITY SITE	QTP NUMBER
LT48 (48-QFN 7x7x1.0mm)	CML-Philippines (RA)	102610
SP282 (28-lead SSOP 209mils)	CML-Philippines (RA)	093404

MAJOR PACKAGE INFORMATION USED IN THIS QUALIFICATION	
Package Designation:	SP28
Package Outline, Type, or Name:	28-Lead Shrunk Small Outline Package (SSOP)
Mold Compound Name/Manufacturer:	Kyocera KEG3000DA-CY
Mold Compound Flammability Rating:	V-O per UL94
Mold Compound Alpha Emission Rate:	N/A
Oxygen Rating Index:	70
Lead Frame Material:	Copper
Lead Finish, Composition / Thickness:	NiPdAu
Die Backside Preparation Method/Metallization:	Backgrind
Die Separation Method:	100% Saw
Die Attach Supplier:	Ablestik
Die Attach Material:	QMI 509
Die Attach Method:	Dispensing
Bond Diagram Designation:	001-49708
Wire Bond Method:	Thermosonic
Package Cross Section Yes/No:	No
Assembly Process Flow:	11-21099
Name/Location of Assembly (prime) facility:	CML-RA
MSL Level	3
Reflow Profile	260C

ELECTRICAL TEST / FINISH DESCRIPTION	
Test Location:	Cypress Philippines (CML-R, CML-RA)

MAJOR PACKAGE INFORMATION USED IN THIS QUALIFICATION	
Package Designation:	LT48D
Package Outline, Type, or Name:	48Pin – Saw QFN (7x7x1.0mm)
Mold Compound Name/Manufacturer:	EME-G700 / Sumitomo
Mold Compound Flammability Rating:	V-0/UL94
Mold Compound Alpha Emission Rate:	Standard Non-Low Alpha
Oxygen Rating Index: >28%	54% (Typical)
Lead Frame Designation:	Full Metal Pad with U-Groove
Lead Frame Material:	Copper
Substrate Material:	N/A
Lead Finish, Composition / Thickness:	NiPdAu
Die Backside Preparation Method/Metallization:	Backgrind
Die Separation Method:	Saw
Die Attach Supplier:	Henkel
Die Attach Material:	QMI-519
Bond Diagram Designation	002-11595
Wire Bond Method:	Thermosonic
Package Cross Section Yes/No:	Yes
Assembly Process Flow:	002-22300
Name/Location of Assembly (prime) facility:	CML-Philippines (RA)
MSL LEVEL	3
REFLOW PROFILE	260C

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

RELIABILITY TESTS PERFORMED PER SPECIFICATION REQUIREMENT

Stress/Test	Test Condition (Temp/Bias)	Result P/F
High Temperature Operating Life Early Failure Rate	Dynamic Operating Condition, Vcc Max=5.5V, 125□C	P
High Temperature Operating Life Latent Failure Rate	Dynamic Operating Condition, Vcc Max=5.5V, 125□C	P
High Temperature Steady State life	125C, 5.5V, Vcc Max	P
Low Temperature Operating Life	-30C, 5.5V	P
High Accelerated Saturation Test (HAST)	JEDEC STD 22-A110, 130 C, 85%RH, 5.5V Precondition: JESD22 Moisture Sensitivity Level 3 (192 Hrs., 30 C°, 60% RH, 260C Reflow)	P
Temperature Cycle	MIL-STD-883C, Method 1010, Condition C, -65 C to 150 C Precondition: JESD22 Moisture Sensitivity Level 3 (192 Hrs., 30 C°, 60% RH, 260C Reflow)	P
Pressure Cooker	JESD22-A102, 121 C, 100%RH, 15 PSIG Precondition: JESD22 Moisture Sensitivity Level 3 (192 Hrs., 30 C°, 60% RH, 260C Reflow)	P
Acoustic Microscopy	J-STD-020 Precondition: JESD22 Moisture Sensitivity Level 3 (192 Hrs., 30 C°, 60% RH, 260C Reflow)	P
Age Bond Strength	200C, 4hrs MIL-STD-883, Method 883-2011	P
Data Retention	150C , No Bias	P
Dynamic Latch-up	125C, 8.5V, In accordance with JESD78	P
Electrostatic Discharge Human Body Model (ESD-HBM)	2,200V JESD22, Method A114-B	P
Electrostatic Discharge Human Body Model (ESD-HBM)	2,200V MIL-STD-883, Method 3015.7	P
Electrostatic Discharge Charge Device Model (ESD-CDM)	500V, JESD22-C101C	P
Endurance Test	MIL-STD-883, Method 883-1033	P
Static Latch-up	125°C , ± 200mA, In accordance with JESD78	P

RELIABILITY FAILURE RATE SUMMARY

Stress/Test	Device Tested/ Device Hours	# Fails	Activation Energy	Thermal[3] A.F	Failure Rate
High Temperature Operating Life Early Failure Rate[1]	999 Devices*	0	N/A	N/A	0 PPM
High Temperature Operating Life[1, 2] Long Term Failure Rate	990, 000 DHRs	0	0 .7	55	17 FIT

* EFR devices number is based on QTP#164014 EFR data.
** LFR device hours are based on QTP#60605, QTP#72502 and QTP#164014 LFR data.

[1] Assuming an ambient temperature of 55C and a junction temperature rise of 15C.
[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 #: 060605

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: ACOUSTIC, MSL1							
CY8C24494 (8C24494A)	9621713	610632687	PHIL-M	COMP	15	0	
CY8C24494 (8C24494A)	9623715	610635580	PHIL-M	COMP	15	0	
CY8C24494 (8C24494A)	9623716	610639767	PHIL-M	COMP	15	0	
STRESS: AGE BOND STRENGTH							
CY8C24494 (8C24494A)	9621713	610632687	PHIL-M	COMP	10	0	
CY8C24494 (8C24494A)	9623715	610635580	PHIL-M	COMP	10	0	
CY8C24494 (8C24494A)	9623716	610639767	PHIL-M	COMP	10	0	
STRESS: DATA RETENTION, PLASTIC, 150C							
CY8C24494 (8C24494A)	9621713	610632687	PHIL-M	336	256	0	
CY8C24494 (8C24494A)	9621713	610632687	PHIL-M	1000	256	0	
CY8C24494 (8C24494A)	9621713	610632687	PHIL-M	1500	256	0	
CY8C24494 (8C24494A)	9623715	610635580	PHIL-M	336	256	0	
CY8C24494 (8C24494A)	9623715	610635580	PHIL-M	1000	256	0	
CY8C24494 (8C24494A)	9623716	610639767	PHIL-M	336	256	0	
STRESS: ENDURANCE							
CY8C24494 (8C24494A)	9621713	610632687A	PHIL-M	COMP	47	0	
STRESS: ESD-CHARGE DEVICE MODEL, (500V)							
CY8C24494 (8C24494A)	9621713	610632687	PHIL-M	COMP	9	0	
CY8C24494 (8C24494A)	9623715	610635580	PHIL-M	COMP	9	0	
CY8C24494 (8C24494A)	9623716	610639767	PHIL-M	COMP	9	0	
CY8C24494 (8C24494A)	9623715	610635880	PHIL-M	COMP	9	0	
CY8C24494 (8C24795A)	9623716	610639349	SEOL-L	COMP	9	0	
CY8C24494 (8C24995A)	9623716	610639350	SEOL-L	COMP	9	0	
STRESS: ESD-HUMAN BODY CIRCUIT PER JESD22, METHOD A114-B, (2,200V)							
CY8C24494 (8C24494A)	9621713	610632687	PHIL-M	COMP	9	0	
CY8C24494 (8C24494A)	9623716	610639767	PHIL-M	COMP	9	0	
CY8C24494 (8C24494A)	9623715	610635880	PHIL-M	COMP	9	0	
CY8C24494 (8C24995A)	9623716	610639350	SEOL-L	COMP	9	0	

Reliability Test Data

QTP #: 060605

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: ESD-HUMAN BODY CIRCUIT PER MIL STD 883, METHOD 3015, (2,200V)							
CY8C24494 (8C24494A)	9621713	610632687	PHIL-M	COMP	3	0	
CY8C24494 (8C24494A)	9623716	610639767	PHIL-M	COMP	3	0	
CY8C24494 (8C24494A)	9623715	610635880	PHIL-M	COMP	3	0	
CY8C24494 (8C24995A)	9623716	610639350	SEOL-L	COMP	3	0	
STRESS: STATIC LATCH-UP TESTING (125C, 8.5V, +/-200mA)							
CY8C24494 (8C24494A)	9623716	610639767	PHIL-M	COMP	3	0	
CY8C24494 (8C24994A)	9621713		C-USA	COMP	3	0	
CY8C24494 (8C24494A)	9623715	610638054	SEOL-L	COMP	3	0	
CY8C24494 (8C24995A)	9623716	610639350	SEOL-L	COMP	3	0	
STRESS: DYNAMIC LATCH-UP (125C, 8.5V)							
CY8C24494 (8C24494A)	9621713	610632687	PHIL-M	COMP	2	0	
STRESS: HIGH TEMP DYNAMIC OPERATING LIFE-EARLY FAILURE RATE (125C, 5.5V, Vcc Max)							
CY8C24494 (8C24494A)	9621713	610632687	PHIL-M	96	1005	0	
CY8C24494 (8C24494A)	9623715	610635580	PHIL-M	96	1144	0	
CY8C24494 (8C24494A)	9623716	610639767	PHIL-M	96	908	1	CAPACITOR DEFECT
STRESS: HIGH TEMP DYNAMIC OPERATING LIFE-LATENT FAILURE RATE (125C, 5.5V, Vcc Max)							
CY8C24494 (8C24494A)	9621713	610632687	PHIL-M	168	180	0	
CY8C24494 (8C24494A)	9621713	610632687	PHIL-M	1000	180	0	
CY8C24494 (8C24494A)	9623715	610635580	PHIL-M	168	180	0	
CY8C24494 (8C24494A)	9623715	610635580	PHIL-M	1000	180	0	
CY8C24494 (8C24494A)	9623716	610639767	PHIL-M	168	180	0	
CY8C24494 (8C24494A)	9623716	610639767	PHIL-M	1000	180	0	
CY8C24494 (8C24494A)	9623716	610639767A	PHIL-M	1000	180	0	
STRESS: HIGH TEMP STEADY STATE LIFE TEST (125C, 5.5V)							
CY8C24494 (8C24494A)	9621713	610632687	PHIL-M	168	80	0	
CY8C24494 (8C24494A)	9621713	610632687	PHIL-M	336	80	0	
STRESS: LOW TEMPERATURE DYNAMIC OPERATING LIFE, -30C, 5.5V							
CY8C24494 (8C24494A)	9621713	610632687	PHIL-M	500	45	0	

Reliability Test Data

QTP #: 060605

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: HI-ACCEL SATURATION TEST (130C, 85%RH, 5.25V), PRE COND 168 HR 85C/85%RH (MSL1)							
CY8C24494 (8C24494A)	9621713	610632687	PHIL-M	128	49	0	
CY8C24494 (8C24494A)	9623715	610635580	PHIL-M	128	49	0	
CY8C24494 (8C24494A)	9623716	610639767	PHIL-M	128	49	0	
STRESS: PRESSURE COOKER TEST (121C, 100%RH), 15 Psig, PRE COND 168 HR 85C/85%RH (MSL1)							
CY8C24494 (8C24494A)	9621713	610632687	PHIL-M	168	50	0	
CY8C24494 (8C24494A)	9621713	610632687	PHIL-M	288	50	0	
CY8C24494 (8C24494A)	9621713	610632687	PHIL-M	500	47	0	
CY8C24494 (8C24494A)	9623715	610635580	PHIL-M	168	50	0	
CY8C24494 (8C24494A)	9623716	610639767	PHIL-M	168	50	0	
CY8C24494 (8C24494A)	9623716	610639767	PHIL-M	288	50	0	
STRESS: TC COND. C -65C TO 150C, PRE COND 168 HRS 85C/85%RH (MSL1)							
CY8C24494 (8C24494A)	9621713	610632687	PHIL-M	300	50	0	
CY8C24494 (8C24494A)	9621713	610632687	PHIL-M	500	50	0	
CY8C24494 (8C24494A)	9621713	610632687	PHIL-M	1000	50	0	
CY8C24494 (8C24494A)	9623715	610635580	PHIL-M	300	50	0	
CY8C24494 (8C24494A)	9623715	610635580	PHIL-M	500	49	0	
CY8C24494 (8C24494A)	9623715	610635580	PHIL-M	1000	49	0	
CY8C24494 (8C24494A)	9623716	610639767	PHIL-M	300	50	0	
CY8C24494 (8C24494A)	9623716	610639767	PHIL-M	500	49	0	

Reliability Test Data

QTP #: 072502

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: DATA RETENTION, PLASTIC, 150C							
CY8C294665 (8C294665A)	5729005	610762243	TAIW-T	500	26	0	
CY8C294665 (8C294665A)	5729005	610762243	TAIW-T	1000	26	0	
CY8C294665 (8C294665A)	5729005	610762241	TAIW-T	500	26	0	
CY8C294665 (8C294665A)	5729005	610762241	TAIW-T	1000	26	0	
CY8C294665 (8C294665A)	5729005	610762240	TAIW-T	500	26	0	
CY8C294665 (8C294665A)	5729005	610762240	TAIW-T	500	26	0	
STRESS: ENDURANCE							
CY8C294665 (8C294665A)	5729005	610762243	TAIW-T	168	25	0	
CY8C294665 (8C294665A)	5729005	610762241	TAIW-T	168	26	0	
CY8C294665 (8C294665A)	5729005	610762240	TAIW-T	168	26	0	
STRESS: ESD-CHARGE DEVICE MODEL, (500V)							
CY8C294665 (8C294665A)	5729005	610762243	TAIW-T	COMP	3	0	
CY8C294665 (8C294665A)	5729005	610762241	TAIW-T	COMP	3	0	
CY8C294665 (8C294665A)	5729005	610762240	TAIW-T	COMP	3	0	
STRESS: ESD-HUMAN BODY CIRCUIT PER JESD22, METHOD A114-B, (2,200V)							
CY8C294665 (8C294665A)	5729005	610762243	TAIW-T	COMP	3	0	
CY8C294665 (8C294665A)	5729005	610762241	TAIW-T	COMP	3	0	
CY8C294665 (8C294665A)	5729005	610762240	TAIW-T	COMP	3	0	
STRESS: HIGH TEMP DYNAMIC OPERATING LIFE-EARLY FAILURE RATE (125C, 5.5V, Vcc Max)							
CY8C294665 (8C294665A)	5729005	610762243	TAIW-T	96	334	0	
CY8C294665 (8C294665A)	5729005	610762241	TAIW-T	96	334	0	
CY8C294665 (8C294665A)	5729005	610762240	TAIW-T	96	334	0	
CY8C294665 (8C294665A)	5730001	610762238	TAIW-T	96	334	0	
CY8C294665 (8C294665A)	5730001	610762239	TAIW-T	96	334	0	
CY8C294665 (8C294665A)	5730001	610762242	TAIW-T	96	334	0	
STRESS: HIGH TEMP DYNAMIC OPERATING LIFE-LATENT FAILURE RATE (125C, 5.5V, Vcc Max)							
CY8C294665 (8C294665A)	5729005	610762243	TAIW-T	1000	60	0	
CY8C294665 (8C294665A)	5729005	610762241	TAIW-T	1000	60	0	
CY8C294665 (8C294665A)	5729005	610762240	TAIW-T	1000	60	0	

Reliability Test Data

QTP #: 072502

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: HI-ACCEL SATURATION TEST (130C, 85%RH, 5.25V), PRE COND 168 HR 85C/85%RH (MSL3)							
CY8C294665 (8C294665A)	5730002	610848578	TAIW-T	128	77	0	
STRESS: PRESSURE COOKER TEST (121C, 100%RH), 15 Psig, PRE COND 168 HR 85C/85%RH (MSL3)							
CY8C294665 (8C294665A)	5729005	610762243	TAIW-T	168	26	0	
CY8C294665 (8C294665A)	5729005	610762241	TAIW-T	168	26	0	
CY8C294665 (8C294665A)	5729005	610762240	TAIW-T	168	26	0	
STRESS: TC COND. C -65C TO 150C, PRE COND 168 HRS 85C/85%RH (MSL3)							
CY8C294665 (8C294665A)	5729005	610762243	TAIW-T	500	26	0	
CY8C294665 (8C294665A)	5729005	610762243	TAIW-T	1000	26	0	
CY8C294665 (8C294665A)	5729005	610762241	TAIW-T	500	26	0	
CY8C294665 (8C294665A)	5729005	610762241	TAIW-T	1000	26	0	
CY8C294665 (8C294665A)	5729005	610762240	TAIW-T	500	26	0	
CY8C294665 (8C294665A)	5729005	610762240	TAIW-T	1000	24	0	
CY8C294665 (8C294665A)	5730001	610762238	TAIW-T	500	26	0	
CY8C294665 (8C294665A)	5730001	610762238	TAIW-T	1000	26	0	
CY8C294665 (8C294665A)	5730001	610762239	TAIW-T	500	26	0	
CY8C294665 (8C294665A)	5730001	610762239	TAIW-T	1000	26	0	
CY8C294665 (8C294665A)	5730001	610762242	TAIW-T	500	26	0	
CY8C294665 (8C294665A)	5730001	610762242	TAIW-T	1000	26	0	
STRESS: STATIC LATCH-UP TESTING (125C, +/-200mA)							
CY8C294665 (8C294665A)	5729005	610762243	TAIW-T	COMP	26	0	
CY8C294665 (8C294665A)	5729005	610762241	TAIW-T	COMP	26	0	
CY8C294665 (8C294665A)	5729005	610762240	TAIW-T	COMP	26	0	

Reliability Test Data

QTP #: 160414

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: ACOUSTIC, MSL3							
CY8C284525 (8C28452BK)	4921235	611934721	CML-RA	COMP	22	0	
CY8C284525 (8C28452BK)	4941279	611937507	CML-RA	COMP	22	0	
STRESS: DATA RETENTION, PLASTIC, 150C							
CY8C286455 (8C28645BK)	4921235	611924592	CML-RA	500	85	0	
CY8C286455 (8C28645BK)	4921235	611924592	CML-RA	1000	85	0	
STRESS: HIGH TEMP DYNAMIC OPERATING LIFE-EARLY FAILURE RATE (125C, 5.5V, Vcc Max)							
CY8C284525 (8C28452BK)	4921235	611934721	CML-RA	96	999	0	
STRESS: ENDURANCE (50k Cycles)							
CY8C284525 (8C28452BK)	4921235	611934721	CML-RA	CYCLING	90	0	
CY8C284525 (8C28452BK)	4921235	611934721	CML-RA	168	90	0	
CY8C284525 (8C28452BK)	4921235	611934721	CML-RA	500	90	0	
STRESS: ESD-CHARGE DEVICE MODEL							
CY8C286455 (8C28645BK)	4921235	611924592	CML-RA	500	9	0	
CY8C284525 (8C28452BK)	4921235	611934721	CML-RA	500	9	0	
CY8C286455 (8C28645BK)	4921235	611924592	CML-RA	750	3	0	
CY8C284525 (8C28452BK)	4921235	611934721	CML-RA	750	3	0	
CY8C286455 (8C28645BK)	4921235	611924592	CML-RA	1000	3	0	
CY8C284525 (8C28452BK)	4921235	611934721	CML-RA	1000	3	0	
CY8C286455 (8C28645BK)	4921235	611924592	CML-RA	1250	3	0	
CY8C284525 (8C28452BK)	4921235	611934721	CML-RA	1250	3	0	
CY8C286455 (8C28645BK)	4921235	611924592	CML-RA	1500	3	0	
CY8C284525 (8C28452BK)	4921235	611934721	CML-RA	1500	3	0	
CY8C286455 (8C28645BK)	4921235	611924592	CML-RA	1750	3	0	
CY8C284525 (8C28452BK)	4921235	611934721	CML-RA	1750	3	0	
CY8C286455 (8C28645BK)	4921235	611924592	CML-RA	2000	3	0	
CY8C284525 (8C28452BK)	4921235	611934721	CML-RA	2000	3	0	

Reliability Test Data

QTP #: 160414

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: HIGH TEMP DYNAMIC OPERATING LIFE-LATENT FAILURE RATE (125C, 5.5V, Vcc Max)							
CY8C284525 (8C28452BK)	4921235	611934721	CML-RA	168	90	0	
CY8C284525 (8C28452BK)	4921235	611934721	CML-RA	500	90	0	
CY8C284525 (8C28452BK)	4921235	611934721	CML-RA	1000	90	0	
STRESS: PRESSURE COOKER TEST (121C, 100%RH), 15 Psig, PRE COND 168 HR 85C/85%RH (MSL3)							
CY8C284525 (8C28452BK)	4921235	611934721	CML-RA	168	80	0	
CY8C284525 (8C28452BK)	4941279	611937507	CML-RA	168	226	0	
CY8C284525 (8C28452BK)	4921235	611934721	CML-RA	288	80	0	
CY8C284525 (8C28452BK)	4941279	611937507	CML-RA	288	226	0	
STRESS: PRE/POST LFR CRITICAL PARAMETERS							
CY8C284525 (8C28452BK)	4921235	611934721	CML-RA	COMP	10+2	0	
STRESS: STATIC LATCH-UP TESTING (125C, +/-100mA)							
CY8C286455 (8C28645BK)	4921235	611924592	CML-RA	COMP	3	0	
CY8C284525 (8C28452BK)	4921235	611934721	CML-RA	COMP	3	0	
STRESS: STATIC LATCH-UP TESTING (125C, +/-140mA)							
CY8C286455 (8C28645BK)	4921235	611924592	CML-RA	COMP	3	0	
CY8C284525 (8C28452BK)	4921235	611934721	CML-RA	COMP	3	0	
STRESS: STATIC LATCH-UP TESTING (85C, +/-140mA)							
CY8C286455 (8C28645BK)	4921235	611924592	CML-RA	COMP	3	0	
CY8C284525 (8C28452BK)	4921235	611934721	CML-RA	COMP	3	0	
STRESS: STATIC LATCH-UP TESTING (85C, +/-200mA)							
CY8C286455 (8C28645BK)	4921235	611924592	CML-RA	COMP	3	0	
CY8C284525 (8C28452BK)	4921235	611934721	CML-RA	COMP	3	0	
STRESS: STATIC LATCH-UP TESTING (85C, +/-300mA)							
CY8C286455 (8C28645BK)	4921235	611924592	CML-RA	COMP	3	0	
CY8C284525 (8C28452BK)	4921235	611934721	CML-RA	COMP	3	0	
STRESS: TC COND. C -65C TO 150C, PRE COND 168 HRS 85C/85%RH (MSL3)							
CY8C284525 (8C28452BK)	4921235	611934721	CML-RA	500	79	0	
CY8C284525 (8C28452BK)	4941279	611937507	CML-RA	500	231	0	
CY8C284525 (8C28452BK)	4921235	611934721	CML-RA	1000	79	0	
CY8C284525 (8C28452BK)	4941279	611937507	CML-RA	1000	231	0	

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