

Cypress Semiconductor Product Qualification Report

QTP#172608 VERSION**
December 2017

1Mb Parallel nvSRAM Device Family S8TNV1-5 Technology, Fab 25	
CY14V101LA*	3.3V/1.8V 1-Mbit (128K x 8) nvSRAM
CY14V101NA*	3.3V/1.8V 1-Mbit (64K x 16) nvSRAM
CY14V256LA*	3.3V/1.8V 256-Kbit (32K x 8) nvSRAM
CY14U256LA*	3.0V/1.8V 256-Kbit (32K x 8) nvSRAM
CY14V101Q*	3.3V/1.8V 1-Mbit (128K x 8) SPI nvSRAM

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

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QTP Number	Description of Qualification Purpose	Date
151008	Qualification of S8* Technology in Fab25 using TSG6M Device	December 2015
163004	S8TNV Fab Transfer Qualification at Fab 25 using 4M Parallel nvSRAM Device	September 2017
172608	Fab Transfer Qualification of 1Mb Parallel nvSRAM Device at Fab 25 using S8TNV1-5 Technology	December 2017

PRODUCT DESCRIPTION (for qualification)	
Qualification Purpose: To qualify 1Mb Parallel nvSRAM Device at Fab 25 using S8TNV1-5 technology	
Marketing Part #:	CY14V101LA*/ CY14V101NA*/ CY14V256LA*/ CY14U256LA*/ CY14V101Q*
Device Description:	1Mb Parallel nvSRAM Device
Cypress Division:	Cypress Semiconductor – Memory Products Division (MPD)

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:	Fab 25		
Die Fab Line ID/Wafer Process ID:	SRT3NDDQ		

MAJOR PACKAGE INFORMATION USED IN THIS QUALIFICATION	
Package Designation:	BK48
Package Outline, Type, or Name:	48-Ball FBGA (Fine Ball Grid Array, 6x10x1.2mm)
Mold Compound Name/Manufacturer:	KMC3580LVA /ShinEtsu
Mold Compound Flammability Rating:	V-0 / UL94
Oxygen Rating Index: >28%	>40%
Substrate Material:	BT Resin
Solder Ball Finish:	SAC-105
Die Backside Preparation Method/Metallization:	Backgrind
Die Separation Method:	Saw Process
Die Attach Supplier:	Sumitomo
Die Attach Material:	CRM-1577DB
Bond Diagram Designation	001-98461
Wire Bond Method:	Thermosonic
Wire Material/Size:	0.8 mil /CuPd
Thermal Resistance Theta JA °C/W:	48.19°C/W
Package Cross Section Yes/No:	Yes
Assembly Process Flow:	001-97055
Name/Location of Assembly (prime) facility:	Bangkok-Thailand (SB)
MSL Level	3
Reflow Profile	260C

ELECTRICAL TEST / FINISH DESCRIPTION	
Test Location:	CML-R

RELIABILITY TESTS PERFORMED PER SPECIFICATION REQUIREMENTS

Stress/Test	Test Condition (Temp/Bias)	Result P/F
Acoustic Microscopy	J-STD-020 Precondition: JESD22 Moisture Sensitivity Level (192 Hrs., 30 °C, 60% RH, 260°C Reflow)	P
Age Bond Strength	200□C, 4HRS MIL-STD-883, Method 883-2011	P
Data Retention	150°C/175°C, No Bias JESD22-A117 and JESD22-A103	P
Electrostatic Discharge Charge Device Model (ESD-CDM)	500V/750V/1,000V/1,250V/1,500V/1,750V/2,000V JESD22-C101	P
Electrostatic Discharge Human Body Model (ESD-HBM)	1,100V/2,200V /3,300V/4,000V/5,000V/6,000V/7,000V JESD22, Method A114	P
Endurance Test	MIL-STD-883, Method 883-1033/ JESD22-A117	P
High Accelerated Saturation Test (HAST)	JEDEC STD 22-A110: 130°C, 85% RH, 3.3V/5.5V Precondition: JESD22 Moisture Sensitivity Level (192 Hrs., 30 °C, 60% RH, 260°C Reflow)	P
High Temperature Operating Life Early Failure Rate – Regulator On	Dynamic Operating Condition, Vcc Max=3.3V, 150°C JESD22-A-108	P
High Temperature Operating Life Early Failure Rate – Regulator Off	Dynamic Operating Condition, Vcc Max=2.07V/3.3V/5.25V, 150°C JESD22-A-108	P
High Temperature Operating Life Latent Failure Rate	Dynamic Operating Condition, Vcc Max=2.0V/3.3V, 150°C JESD22-A-108	P
Low Temperature Operating Life	Dynamic Operating Condition, -40°C JESD22-A108	P
Pressure Cooker	JESD22-A102:121°C /100%RH, 15 PSIG Precondition: JESD22 Moisture Sensitivity Level (192 Hrs., 30 °C, 60% RH, 260°C Reflow)	P
Pre/Post LFR AC/DC Char	AC/DC Critical Parameter Char at 0 hour/500hrs	P
Soft Error (Alpha Particle)	JESD89	P
Soft Error (Neutron)	JESD89	P
Static Latch-up	85°C, +/- 140mA, +/- 200mA, +/-300mA 125°C, +/-100mA, +/-140mA JESD 78	P
Temperature Cycle	MIL-STD-883, Method 1010, Condition C, -65°C to 150°C Precondition: JESD22 Moisture Sensitivity Level (192 Hrs., 30 °C, 60% RH, 260°C Reflow)	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	1,593 Devices	0	N/A	N/A	0 PPM ⁽¹⁾
High Temperature Operating Life Long Term Failure Rate	298,000 DHRs	0	0.7	170	18 FIT ⁽²⁾

1. Early Failure Rate was computed from QTP# 172608.
2. Long Term Failure Rate was computed from QTP#151008 and QTP# 163004 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

<i>Device</i>	<i>Fab Lot #</i>	<i>Assy Lot #</i>	<i>Assy Loc</i>	<i>Duration</i>	<i>Samp</i>	<i>Rej</i>	<i>Failure Mechanism</i>
STRESS: ACOUSTIC, MSL3							
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 (150C, 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

<i>Device</i>	<i>Fab Lot #</i>	<i>Assy Lot #</i>	<i>Assy Loc</i>	<i>Duration</i>	<i>Samp</i>	<i>Rej</i>	<i>Failure Mechanism</i>
STRESS: 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

<i>Device</i>	<i>Fab Lot #</i>	<i>Assy Lot #</i>	<i>Assy Loc</i>	<i>Duration</i>	<i>Samp</i>	<i>Rej</i>	<i>Failure Mechanism</i>
STRESS: 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 #: 163004

<i>Device</i>	<i>Fab Lot</i>	<i>Assy Lot #</i>	<i>Assy Loc</i>	<i>Duration</i>	<i>Samp</i>	<i>Rej</i>	<i>Failure Mechanism</i>
STRESS: ACOUSTIC, MSL3							
CY14B104NA2 (7CC1404B6D)	4647620	611645509	CML-RA	COMP	22	0	
CY14B104K2 (7C1404B1D)	4652108	611703935	CML-RA	COMP	22	0	
CY14B104NA2 (7CC1404B6D)	4652108	611703705	G-TAIWAN	COMP	22	0	
CY14B104NA2 (7CC1404B6D)	3721074	611723439	CML-RA	COMP	22	0	
CY14B104NA2 (7C1404B6D)	4715938	611723536	CML-RA	COMP	22	0	
STRESS: AGED BOND STRENGHT							
CY14B104K2 (7CC1404B1D)	4647620	611645506	CML-RA	COMP	3	0	
STRESS: DATA RETENTION, PLASTIC, 150C							
CY14B104NA2 (7A1404B6D)	4647620	611646995	JT-CHINA	1000	80	0	
STRESS: ENDURANCE							
CY14B104NA2 (7A1404B6D)	4647620	611646995	JT-CHINA	CYCLING	80	0	
CY14B104NA2 (7A1404B6D)	4647620	611646995	JT-CHINA	168	80	0	
CY14B104NA2 (7A1404B6D)	4647620	611646995	JT-CHINA	500	80	0	
STRESS: ESD-CHARGE DEVICE MODEL							
CY14B104NA2 (7A1404B6D)	4647620	611646995	JT-CHINA	500	9	0	
CY14B104NA2 (7A1404B6D)	4647620	611646995	JT-CHINA	750	3	0	
CY14B104NA2 (7A1404B6D)	4647620	611646995	JT-CHINA	1000	3	0	
CY14B104NA2 (7A1404B6D)	4647620	611646995	JT-CHINA	1250	3	0	
CY14B104NA2 (7A1404B6D)	4647620	611646995	JT-CHINA	1500	3	0	
CY14B104NA2 (7A1404B6D)	4647620	611646995	JT-CHINA	1750	3	0	
CY14B104NA2 (7A1404B6D)	4647620	611646995	JT-CHINA	2000	3	0	
CY14B104NA2 (7CC1404B6D)	4652108	611703705	G-TAIWAN	500	9	0	
CY14B104NA2 (7CC1404B6D)	4652108	611703705	G-TAIWAN	750	3	0	
CY14B104NA2 (7CC1404B6D)	4652108	611703705	G-TAIWAN	1000	3	0	
CY14B104NA2 (7CC1404B6D)	4652108	611703705	G-TAIWAN	1250	3	0	
CY14B104NA2 (7CC1404B6D)	4652108	611703705	G-TAIWAN	1500	3	0	
CY14B104NA2 (7CC1404B6D)	4652108	611703705	G-TAIWAN	1750	3	0	
CY14B104NA2 (7CC1404B6D)	4652108	611703705	G-TAIWAN	2000	3	0	
CY14B104NA2 (7A1404B6D)	4652108	611705917	JT-CHINA	500	9	0	
CY14B104NA2 (7A1404B6D)	4652108	611705917	JT-CHINA	750	3	0	
CY14B104NA2 (7A1404B6D)	4652108	611705917	JT-CHINA	1000	3	0	
CY14B104NA2 (7A1404B6D)	4652108	611705917	JT-CHINA	1250	3	0	
CY14B104NA2 (7A1404B6D)	4652108	611705917	JT-CHINA	1500	3	0	
CY14B104NA2 (7A1404B6D)	4652108	611705917	JT-CHINA	1750	3	0	
CY14B104NA2 (7A1404B6D)	4652108	611705917	JT-CHINA	2000	3	0	



Reliability Test Data

QTP #: 163004

Device	Fab Lot	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: ESD-CHARGE DEVICE MODEL							
CY14B104M2 (7C1404B2D)	4652108	611705462	GM-TAIWAN	500	9	0	
CY14B104M2 (7C1404B2D)	4652108	611705462	GM-TAIWAN	750	3	0	
CY14B104M2 (7C1404B2D)	4652108	611705462	GM-TAIWAN	1000	3	0	
CY14B104M2 (7C1404B2D)	4652108	611705462	GM-TAIWAN	1250	3	0	
CY14B104M2 (7C1404B2D)	4652108	611705462	GM-TAIWAN	1500	3	0	
CY14B104M2 (7C1404B2D)	4652108	611705462	GM-TAIWAN	1750	3	0	
CY14B104M2 (7C1404B2D)	4652108	611705462	GM-TAIWAN	2000	3	0	
CY14B104M2 (7C1404B2D)	3720073	611726034	GM-TAIWAN	500	9	0	
CY14B104M2 (7C1404B2D)	3720073	611726034	GM-TAIWAN	750	3	0	
CY14B104M2 (7C1404B2D)	3720073	611726034	GM-TAIWAN	1000	3	0	
CY14B104M2 (7C1404B2D)	3720073	611726034	GM-TAIWAN	1250	3	0	
CY14B104M2 (7C1404B2D)	3720073	611726034	GM-TAIWAN	1500	3	0	
CY14B104M2 (7C1404B2D)	3720073	611726034	GM-TAIWAN	1750	3	0	
CY14B104M2 (7C1404B2D)	3720073	611726034	GM-TAIWAN	2000	3	0	
CY14B104NA2 (7CP1404B6D)	3720073	611728313	GM-TAIWAN	500	9	0	
CY14B104NA2 (7CP1404B6D)	3720073	611728313	GM-TAIWAN	750	3	0	
CY14B104NA2 (7CP1404B6D)	3720073	611728313	GM-TAIWAN	1000	3	0	
CY14B104NA2 (7CP1404B6D)	3720073	611728313	GM-TAIWAN	1250	3	0	
CY14B104NA2 (7CP1404B6D)	3720073	611728313	GM-TAIWAN	1500	3	0	
CY14B104NA2 (7CP1404B6D)	3720073	611728313	GM-TAIWAN	1750	3	0	
CY14B104NA2 (7CP1404B6D)	3720073	611728313	GM-TAIWAN	2000	3	0	
STRESS: ESD-HUMAN BODY MODEL PER JESD22, METHOD A114							
CY14B104K2 (7CC1404B1D)	4647620	611645506	CML-RA	1100	3	0	
CY14B104K2 (7CC1404B1D)	4647620	611645506	CML-RA	2200	8	0	
CY14B104K2 (7CC1404B1D)	4647620	611645506	CML-RA	3300	3	0	
CY14B104K2 (7CC1404B1D)	4647620	611645506	CML-RA	4000	3	0	
CY14B104K2 (7CC1404B1D)	4647620	611645506	CML-RA	5000	3	0	
CY14B104K2 (7CC1404B1D)	4647620	611645506	CML-RA	6000	3	0	
CY14B104NA2 (7A1404B6D)	4647620	611646995	JT-CHINA	1100	3	0	
CY14B104NA2 (7A1404B6D)	4647620	611646995	JT-CHINA	2200	8	0	
CY14B104NA2 (7A1404B6D)	4647620	611646995	JT-CHINA	3300	3	0	
CY14B104NA2 (7A1404B6D)	4647620	611646995	JT-CHINA	4000	3	0	
CY14B104NA2 (7A1404B6D)	4647620	611646995	JT-CHINA	5000	3	0	
CY14B104NA2 (7A1404B6D)	4647620	611646995	JT-CHINA	6000	3	0	
CY14B104NA2 (7A1404B6D)	4647620	611646995	JT-CHINA	7000	3	0	



Reliability Test Data

QTP #: 163004

Device	Fab Lot	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: ESD-HUMAN BODY MODEL PER JESD22, METHOD A114							
CY14B104K2 (7C1404B1D)	4652108	611703935	CML-RA	1100	3	0	
CY14B104K2 (7C1404B1D)	4652108	611703935	CML-RA	2200	8	0	
CY14B104K2 (7C1404B1D)	4652108	611703935	CML-RA	3300	3	0	
CY14B104K2 (7C1404B1D)	4652108	611703935	CML-RA	4000	3	0	
CY14B104K2 (7C1404B1D)	4652108	611703935	CML-RA	5000	3	0	
CY14B104K2 (7C1404B1D)	4652108	611703935	CML-RA	6000	3	0	
CY14B104NA2 (7A1404B6D)	4652108	611705917	JT-CHINA	1100	3	0	
CY14B104NA2 (7A1404B6D)	4652108	611705917	JT-CHINA	2200	8	0	
CY14B104NA2 (7A1404B6D)	4652108	611705917	JT-CHINA	3300	3	0	
CY14B104NA2 (7A1404B6D)	4652108	611705917	JT-CHINA	4000	3	0	
CY14B104NA2 (7A1404B6D)	4652108	611705917	JT-CHINA	5000	3	0	
CY14B104NA2 (7A1404B6D)	4652108	611705917	JT-CHINA	6000	3	0	
CY14B104NA2 (7A1404B6D)	4652108	611705917	JT-CHINA	7000	3	0	
STRESS: HI-ACCEL SATURATION TEST (130C, 85%RH, 3.3V), PRE COND 192 HR 30C/60%RH (MSL3)							
CY14B104K2 (7CC1404B1D)	4647620	611645506	CML-RA	96	30	0	
CY14B104K2 (7C1404B1D)	4652108	611703935	CML-RA	96	30	0	
CY14B104NA2 (7CC1404B6D)	4652108	611703705	G-TAIWAN	96	30	0	
STRESS: HIGH TEMP DYNAMIC OPERATING LIFE-EARLY FAILURE RATE, REG-ON (150C, 3.3V, Vcc Max)							
CY14B104NA2 (7A1404B6D)	4647620	611646995	JT-CHINA	48	50	0	
STRESS: HIGH TEMP DYNAMIC OPERATING LIFE-EARLY FAILURE RATE, REG-OFF (150C, 3.3V, Vcc Max)							
CY14B104NA2 (7A1404B6D)	4647620	611646995	JT-CHINA	48	3400	0	
CY14B104NA2 (7A1404B6D)	4652108	611705917	JT-CHINA	48	3399	0	
CY14B104NA2 (7A1404B6D)	3721074	611722753	JT-CHINA	48	1489	0	
STRESS: HIGH TEMP DYNAMIC OPERATING LIFE-LATENT FAILURE RATE (150C, 3.3V, Vcc Max)							
CY14B104NA2 (7A1404B6D)	4647620	611646995	JT-CHINA	80	120	0	
CY14B104NA2 (7A1404B6D)	4647620	611646995	JT-CHINA	500	120	0	
CY14B104NA2 (7A1404B6D)	4652108	611705917	JT-CHINA	80	120	0	
CY14B104NA2 (7A1404B6D)	4652108	611705917	JT-CHINA	500	120	0	
CY14B104NA2 (7A1404B6D)	4703546	611706560	JT-CHINA	80	120	0	
CY14B104NA2 (7A1404B6D)	4703546	611706560	JT-CHINA	500	120	0	
STRESS: PRESSURE COOKER TEST (121C, 100%RH), 15 Psig, PRE COND 192 HR 30C/60%RH (MSL3)							
CY14B104K2 (7C1404B1D)	4652108	611703935	CML-RA	96	80	0	
CY14B104K2 (7C1404B1D)	4652108	611703935	CML-RA	168	79	0	
CY14B104K2 (7C1404B1D)	4652108	611703935	CML-RA	288	79	0	
CY14B104NA2 (7CC1404B6D)	4652108	611703705	G-TAIWAN	168	80	0	
CY14B104NA2 (7CC1404B6D)	3721074	611723439	CML-RA	168	80	0	
CY14B104NA2 (7C1404B6D)	4715938	611723536	CML-RA	168	80	0	

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<i>Device</i>	<i>Fab Lot</i>	<i>Assy Lot #</i>	<i>Assy Loc</i>	<i>Duration</i>	<i>Samp</i>	<i>Rej</i>	<i>Failure Mechanism</i>
STRESS: PRE/POST LFR PARAMETER ASSESSMENT							
CY14B104NA2 (7A1404B6D)	4647620	611646995	JT-CHINA	0	10+2	0	
CY14B104NA2 (7A1404B6D)	4647620	611646995	JT-CHINA	500	10+2	0	
CY14B104NA2 (7A1404B6D)	4652108	611705917	JT-CHINA	0	10+2	0	
CY14B104NA2 (7A1404B6D)	4652108	611705917	JT-CHINA	500	10+2	0	
CY14B104NA2 (7A1404B6D)	4703546	611706560	JT-CHINA	0	10+2	0	
CY14B104NA2 (7A1404B6D)	4703546	611706560	JT-CHINA	500	10+2	0	
STRESS: STATIC LATCH-UP (125C, 100mA)							
CY14B104K2 (7CC1404B1D)	4647620	611645506	CML-RA	COMP	3	0	
CY14B104NA2 (7A1404B6D)	4647620	611646995	JT-CHINA	COMP	3	0	
CY14B104K2 (7C1404B1D)	4652108	611703935	CML-RA	COMP	3	0	
CY14B104NA2 (7A1404B6D)	4652108	611705917	JT-CHINA	COMP	3	0	
STRESS: STATIC LATCH-UP (125C, 140mA)							
CY14B104K2 (7CC1404B1D)	4647620	611645506	CML-RA	COMP	3	0	
CY14B104NA2 (7A1404B6D)	4647620	611646995	JT-CHINA	COMP	3	0	
CY14B104K2 (7C1404B1D)	4652108	611703935	CML-RA	COMP	3	0	
CY14B104NA2 (7A1404B6D)	4652108	611705917	JT-CHINA	COMP	3	0	
STRESS: STATIC LATCH-UP (85C, 140mA)							
CY14B104K2 (7CC1404B1D)	4647620	611645506	CML-RA	COMP	3	0	
CY14B104NA2 (7A1404B6D)	4647620	611646995	JT-CHINA	COMP	3	0	
CY14B104K2 (7C1404B1D)	4652108	611703935	CML-RA	COMP	3	0	
CY14B104NA2 (7A1404B6D)	4652108	611705917	JT-CHINA	COMP	3	0	
STRESS: STATIC LATCH-UP (85C, 200mA)							
CY14B104K2 (7CC1404B1D)	4647620	611645506	CML-RA	COMP	3	0	
CY14B104NA2 (7A1404B6D)	4647620	611646995	JT-CHINA	COMP	3	0	
CY14B104K2 (7C1404B1D)	4652108	611703935	CML-RA	COMP	3	0	
CY14B104NA2 (7A1404B6D)	4652108	611705917	JT-CHINA	COMP	3	0	
STRESS: STATIC LATCH-UP (85C, 300mA)							
CY14B104K2 (7CC1404B1D)	4647620	611645506	CML-RA	COMP	3	0	
CY14B104NA2 (7A1404B6D)	4647620	611646995	JT-CHINA	COMP	3	0	
CY14B104K2 (7C1404B1D)	4652108	611703935	CML-RA	COMP	3	0	
CY14B104NA2 (7A1404B6D)	4652108	611705917	JT-CHINA	COMP	3	0	
STRESS: SER – ALPHA PARTICLE SEL							
CY14B104K2 (7CC1404B1D)	4647620	611645506	CML-RA	COMP	3	0	
STRESS: SER – NEUTRON SEL							
CY14B104K2 (7CC1404B1D)	4647620	611645506	CML-RA	COMP	3	0	



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<i>Device</i>	<i>Fab Lot</i>	<i>Assy Lot #</i>	<i>Assy Loc</i>	<i>Duration</i>	<i>Samp</i>	<i>Rej</i>	<i>Failure Mechanism</i>
STRESS: TC COND. C -65C TO 150C, PRE COND 192 HRS 30C/60%RH (MSL3)							
CY14B104NA2 (7CC1404B6D)	4647620	611645509	CML-RA	500	80	0	
CY14B104NA2 (7CC1404B6D)	4647620	611645509	CML-RA	1000	80	0	
CY14B104K2 (7C1404B1D)	4652108	611703935	CML-RA	500	80	0	
CY14B104K2 (7C1404B1D)	4652108	611703935	CML-RA	1000	80	0	
CY14B104NA2 (7CC1404B6D)	4652108	611703705	G-TAIWAN	500	79	0	
CY14B104NA2 (7CC1404B6D)	3721074	611723439	CML-RA	500	79	0	
STRESS: THERMAL JUNCTION MEASUREMENT							
CY14B104K2 (7CC1404B1D)	4647620	611645506	CML-RA	COMP	1	0	

Reliability Test Data

QTP #: 172608

<i>Device</i>	<i>Fab Lot</i>	<i>Assy Lot #</i>	<i>Assy Loc</i>	<i>Duration</i>	<i>Samp</i>	<i>Rej</i>	<i>Failure Mechanism</i>
STRESS: ACOUSTIC, MSL3							
CY14V101LA2 7CP1421B8DB	3734031	611740674	SB-Thailand	COMP	22	0	
STRESS: ESD-CHARGE DEVICE MODEL							
CY14V101LA2 7CP1421B8DB	3734031	611740674	SB-Thailand	500	9	0	
CY14V101LA2 7CP1421B8DB	3734031	611740674	SB-Thailand	750	3	0	
CY14V101LA2 7CP1421B8DB	3734031	611740674	SB-Thailand	1000	3	0	
CY14V101LA2 7CP1421B8DB	3734031	611740674	SB-Thailand	1250	3	0	
CY14V101LA2 7CP1421B8DB	3734031	611740674	SB-Thailand	1500	3	0	
CY14V101LA2 7CP1421B8DB	3734031	611740674	SB-Thailand	1750	3	0	
CY14V101LA2 7CP1421B8DB	3734031	611740674	SB-Thailand	2000	3	0	
STRESS: ESD-HUMAN BODY MODEL PER JESD22, METHOD A114							
CY14V101LA2 7CP1421B8DB	3734031	611740674	SB-Thailand	1100	3	0	
CY14V101LA2 7CP1421B8DB	3734031	611740674	SB-Thailand	2200	8	0	
CY14V101LA2 7CP1421B8DB	3734031	611740674	SB-Thailand	3300	3	0	
CY14V101LA2 7CP1421B8DB	3734031	611740674	SB-Thailand	4000	3	0	
CY14V101LA2 7CP1421B8DB	3734031	611740674	SB-Thailand	5000	3	0	
CY14V101LA2 7CP1421B8DB	3734031	611740674	SB-Thailand	6000	3	0	
CY14V101LA2 7CP1421B8DB	3734031	611740674	SB-Thailand	7000	3	0	
STRESS: HIGH TEMP DYNAMIC OPERATING LIFE-EARLY FAILURE RATE, REG-OFF (150C, 5.25V, Vcc Max)							
CY14V101LA2 7CP1421B8DB	3734031	611740674	SB-Thailand	48	1593	0	
STRESS: STATIC LATCH-UP (125C, 100mA)							
CY14V101LA2 7CP1421B8DB	3734031	611740674	SB-Thailand	COMP	3	0	
STRESS: STATIC LATCH-UP (125C, 140mA)							
CY14V101LA2 7CP1421B8DB	3734031	611740674	SB-Thailand	COMP	3	0	
STRESS: STATIC LATCH-UP (85C, 140mA)							
CY14V101LA2 7CP1421B8DB	3734031	611740674	SB-Thailand	COMP	3	0	
STRESS: STATIC LATCH-UP (85C, 200mA)							
CY14V101LA2 7CP1421B8DB	3734031	611740674	SB-Thailand	COMP	3	0	
STRESS: STATIC LATCH-UP (85C, 300mA)							
CY14V101LA2 7CP1421B8DB	3734031	611740674	SB-Thailand	COMP	3	0	
STRESS: TC COND. C -65C TO 150C, PRE COND 192 HRS 30C/60%RH (MSL3)							
CY14V101LA2 7CP1421B8DB	3734031	611740674	SB-Thailand	500	79	0	



Document History Page

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Rev.	ECN No.	Orig. of Change	Description of Change
**	6006455	JYF	Initial spec release.