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Cypress Semiconductor
Product Qualification Report

QTP#163004 VERSION*E
February 2025

4M Parallel nvSRAM Device Family S8TNV1-5 Technology, Fab 25	
CY14B102NS*	2-MBIT (128 K X 16) NVSRAM
CY14B104NA*	4-MBIT (256K X 16) NVSRAM
CY14B104M*	4-MBIT (256 K X 16) NVSRAM WITH REAL TIME CLOCK
CY14B104LA*	4-MBIT (512K X 8) NVSRAM
CY14104V*	4-MBIT (512K X 8/256K X 16) NVSRAM DIE
CY14B104K*	4-MBIT (512 K X 8) NVSRAM WITH REAL TIME CLOCK
CY14B108N*	8-MBIT (512 K X 16) NVSRAM
CY14B108M*	8-MBIT (512 K X 16) NVSRAM WITH REAL TIME CLOCK
CY14B108L*	8-MBIT (1024K X 8) NVSRAM
CY14B108K*	8-MBIT (1024K X 8) NVSRAM WITH REAL TIME CLOCK
CYATB108LD*	8-MBIT (1024K X 8) ANTI-TAMPER MEMORY

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

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

PRODUCT DESCRIPTION (for qualification)	
Qualification Purpose: To qualify S8TNV1-5 Technology at Fab 25 using 4M Parallel nvSRAM Device	
Marketing Part #:	CY14B102NS*/ CY14B104NA*/ CY14B104M*/ CY14B104LA*/ CY14104V*/ CY14B104K*/ CY14B108N*/ CY14B108M*/ CY14B108L*/ CY14B108K*/ CYATB108LD*
Device Description:	4M 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:	SRT3NNDDQ		

MAJOR PACKAGE INFORMATION USED IN THIS QUALIFICATION	
Package Designation:	BK48C
Package Outline, Type, or Name:	FBGA (Fine Ball Grid Array)
Mold Compound Name/Manufacturer:	KE-G2250 / Kyocera
Mold Compound Flammability Rating:	V-0 / UL94
Oxygen Rating Index: >28%	28%
Substrate Material:	BT Resin
Solder Ball Finish:	Sn/Ag/Cu
Die Backside Preparation Method/Metallization:	Backgrind
Die Separation Method:	Saw Process
Die Attach Supplier:	Ablestik
Die Attach Material:	2025D
Bond Diagram Designation	001-46947
Wire Bond Method:	Thermosonic
Wire Material/Size:	CuPd/0.8 mil (20um)
Thermal Resistance Theta JA °C/W:	46.09 °C/W
Package Cross Section Yes/No:	Yes
Assembly Process Flow:	49-41999
Name/Location of Assembly (prime) facility:	ASE-Taiwan G)
MSL Level	3
Reflow Profile	260C

ELECTRICAL TEST / FINISH DESCRIPTION	
Test Location:	CML-R

MAJOR PACKAGE INFORMATION USED IN THIS QUALIFICATION	
Package Designation:	BK48C
Package Outline, Type, or Name:	FBGA (Fine Ball Grid Array)
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:	Sn/Ag/Cu
Die Backside Preparation Method/Metallization:	Backgrind
Die Separation Method:	Saw Process
Die Attach Supplier:	Henkel
Die Attach Material:	QMI 546
Bond Diagram Designation	001-98460
Wire Bond Method:	Thermosonic
Wire Material/Size:	CuPd/0.8 mil (20um)
Thermal Resistance Theta JA °C/W:	46.09 °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

MAJOR PACKAGE INFORMATION USED IN THIS QUALIFICATION	
Package Designation:	ZW44
Package Outline, Type, or Name:	TSOP II (Thin Small Outline Package II)
Mold Compound Name/Manufacturer:	KE G6000DA / Kyocera
Mold Compound Flammability Rating:	V-0 / UL94
Oxygen Rating Index: >28%	N/A
Lead Frame Designation:	RMP
Lead Frame Material:	Copper
Lead Finish, Composition / Thickness:	NiPdAu
Die Backside Preparation Method/Metallization:	Backgrind
Die Separation Method:	Saw Process
Die Attach Supplier:	Henkel
Die Attach Material:	QMI 509
Bond Diagram Designation	001-69421
Wire Bond Method:	Thermosonic
Wire Material/Size:	Cu/0.8 mil (20um)
Thermal Resistance Theta JA °C/W:	43.3 °C/W
Package Cross Section Yes/No:	Yes
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:	CML-R

MAJOR PACKAGE INFORMATION USED IN THIS QUALIFICATION	
Package Designation:	ZW44
Package Outline, Type, or Name:	TSOP II (Thin Small Outline Package II)
Mold Compound Name/Manufacturer:	KE-G6000DA / Kyocera
Mold Compound Flammability Rating:	V-0 / UL94
Oxygen Rating Index: >28%	N/A
Lead Frame Designation:	FMP
Lead Frame Material:	Copper
Lead Finish, Composition / Thickness:	NiPdAuAg
Die Backside Preparation Method/Metallization:	Backgrind
Die Separation Method:	Saw Process
Die Attach Supplier:	Henkel
Die Attach Material:	QMI 509
Bond Diagram Designation	002-14011
Wire Bond Method:	Thermosonic
Wire Material/Size:	Au/0.9 mil (23um)
Thermal Resistance Theta JA °C/W:	43.3 °C/W
Package Cross Section Yes/No:	Yes
Name/Location of Assembly (prime) facility:	JCET-China (JT)
MSL Level	3
Reflow Profile	260C

ELECTRICAL TEST / FINISH DESCRIPTION	
Test Location:	CML-R

MAJOR PACKAGE INFORMATION USED IN THIS QUALIFICATION	
Package Designation:	ZW54
Package Outline, Type, or Name:	TSOP II (Thin Small Outline Package II)
Mold Compound Name/Manufacturer:	CEL-9200HFU / Hitachi
Mold Compound Flammability Rating:	V-0 / UL94
Oxygen Rating Index: >28%	N/A
Lead Frame Designation:	FMP
Lead Frame Material:	Copper
Lead Finish, Composition / Thickness:	Pure Sn
Die Backside Preparation Method/Metallization:	Backgrind
Die Separation Method:	Saw Process
Die Attach Supplier:	Hitachi
Die Attach Material:	EN4900
Bond Diagram Designation	002-12014
Wire Bond Method:	Thermosonic
Wire Material/Size:	Au/0.7 mil (18um)
Thermal Resistance Theta JA °C/W:	42.03 °C/W
Package Cross Section Yes/No:	Yes
Assembly Process Flow:	002-20429
Name/Location of Assembly (prime) facility:	Chipmos-Taiwan (GM)
MSL Level	3
Reflow Profile	260C

ELECTRICAL TEST / FINISH DESCRIPTION	
Test Location:	CML-R

PACKAGE AVAILABILITY

PACKAGE	ASSEMBLY FACILITY SITE	WIRE MATERIAL
48-Ball FBGA	ASE-Taiwan (G)	CuPd
	Bangkok-Thailand (SB)	CuPd
44L TSOP II	CML-RA	Cu
	JCET-China (JT)	Au
	OSE-Taiwan (T)	Au
54L TSOP II	Chipmos-Taiwan (GM)	Au

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	Per Datasheet (100K Cycles), JESD22-A117 Per Datasheet (1M Cycles), 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,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	8,288 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# 163004.
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

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 (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 (100K CYCLES)							
CYTT214032 (8CP206101)	4539372	611534008	CML-RA	CYCLING	78	0	
CYTT214032 (8CP206101)	4539372	611534008	CML-RA	168	78	0	
CYTT214032 (8CP206101)	4539372	611534008	CML-RA	500	78	0	
CYTT214032 (8CP206101)	4540145	611534709	CML-RA	CYCLING	80	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	CYCLING	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 #: 163004

Device	Fab Lot	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
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 STRENGTH							
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 (1M CYCLES)							
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	

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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	

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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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Device	Fab Lot	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
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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Device	Fab Lot	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
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	

Document History Page

Document Title: QTP# 163004: 4M Parallel nvSRAM Device Family, S8TNV1-5 Technology, Fab 25
Document Number: 002-21072

Rev.	ECN No.	Orig. of Change	Description of Change
**	5875736	JYF	Initial spec release.
*A	5883296	JYF	Updated device name in QTP title and Product History/Description.
*B	6083535	JYF	Updated wire size and Endurance details.
*C	6104975	JYF	Added no. of Endurance cycles in Reliability Test Data.
*D	6109123	JYF	Minor update (formatting).
*E	8101861	JYF CHONGKAHHUAN	Sunset review: Removed obsolete spec 001-67698 Updated logo to IFX on header.