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# Cypress Semiconductor Product Qualification Report

QTP# 114501 VERSION \*B  
August 2019

<b>Rainier 16M nvSRAM Product Family</b>	
<b>S8TNV-5, SkyWater</b>	
<b>CY14B116S-BZ*/CY14E116S-BZ*</b>	<b>512 K × 32 nvSRAM</b>
<b>CY14B116N-BZ*/CY14B116M-BZ*</b> <b>CY14E116N-BZ*/CY14V116N-BZ*</b> <b>CY14V116G7-BZ*/CY14B116N-Z*</b> <b>CY14E116N-Z*/CY14B116N-ZSP*</b> <b>CY14B116M-ZSP*/CY14E116N-ZSP*</b>	<b>1024 K × 16 nvSRAM</b>
<b>CY14V116F7-BZ*/CY14B116L-ZS*</b> <b>CY14B116K-ZS*/CY14E116L-ZS*</b> <b>CY14B116L-Z*/CY14E116L-Z*</b>	<b>2048 K × 8 nvSRAM</b>

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

<b>QTP Number</b>	<b>Description of Qualification Purpose</b>	<b>Date</b>
071304	To qualify S8 SONOS technology and 4M nvSRAM devices CY14B104L /CY14B104N (7C14104AC base die) using S8TNV-5R, fabricated at SkyWater	Nov 2008
114501	S8TNV-5 Rainier 16M NVSRAM Product Qualification	Oct 2014

PRODUCT DESCRIPTION (for qualification)	
Qualification Purpose: S8TNV-5 Rainier 16M nvSRAM Product Qualification	
Marketing Part #:	CY14B116S-BZ*, CY14B116N-BZ*, CY14B116M-BZ*, CY14E116N-BZ*, CY14E116S-BZ*, CY14V116N-BZ*, CY14V116F7-BZ*, CY14V116G7-BZ*, CY14B116L-ZS*, CY14B116K-ZS*, CY14E116L-ZS*, CY14B116L-Z*, CY14B116N-Z*, CY14E116L-Z*, CY14E116N-Z*, CY14B116N-ZSP*, CY14B116M-ZSP*, CY14E116N-ZSP*
Device Description:	S8TNV-5 Rainier 16M nvSRAM
Cypress Division:	Cypress Semiconductor Corporation –Memory Product Division

TECHNOLOGY/FAB PROCESS DESCRIPTION			
Number of Metal Layers:	Proprietary	Metal Composition:	Proprietary
Passivation Type and Thickness:	Proprietary		
Generic Process Technology/Design Rule ( $\mu$ -drawn):	Proprietary		
Gate Oxide Material/Thickness (MOS):	Proprietary		
Name/Location of Die Fab (prime) Facility:	SkyWater /Bloomington, MN		
Die Fab Line ID/Wafer Process ID:	S8TNV-5		

### PACKAGE AVAILABILITY

PACKAGE	ASSEMBLY FACILITY SITE
44-pin TSOPII	ASE-G
54-pin TSOPII	ASE-G
48-pin TSOP I	OSE-T
165 BGA	CML-RA

ELECTRICAL TEST / FINISH DESCRIPTION	
Test Location:	CML-R

**Note:** Please contact a Cypress Representative for other package availability.

## RELIABILITY TESTS PERFORMED PER SPECIFICATION REQUIREMENTS

Stress/Test	Test Condition (Temp/Bias)	Result P/F
Data Retention (Plastic)	150C, non-biased, 1,000 hours JESD22-A117 and JESD22-A103	P
Endurance Test	1.4 Million Cycles + 168 hours (150C) DRET	P
High Temperature Operating Life Early Failure Rate	Dynamic Operating Condition, Vcc = 115% Vcc Nom (2.1V Vpwr), 125C, 96 hours JESD22-A108	P
High Temperature Operating Life Latent Failure Rate	Dynamic Operating Condition, Vcc = 115% Vcc Nom (2.1V Vpwr), 125C, 1,000 hours JESD22-A108	P
High Accelerated Saturation Test (HAST)	JEDEC STD 22-A110: 130C, 85%RH, 5.5V, 96 hours Precondition: JESD22 Moisture Sensitivity Level 3 (192 Hrs., 30 C, 60% RH)	P
Pre/Post LFR AC/DC Char	AC/DC Critical Parameter Char at LFR 0hrs, 80hrs & 500hrs	P
Precondition	JESD22 Moisture Sensitivity	P
Pressure Cooker Test	JESD22-A102: 121 C, 100%RH, 15 PSIG, 168 hours Precondition: JESD22 Moisture Sensitivity Level 3 (192 Hrs., 30 C, 60% RH)	P
Temperature Cycle	MIL-STD-883, Method 1010, Condition C, -65C to 150C Precondition: JESD22 Moisture Sensitivity Level 3 (192 Hrs., 30 C°, 60% RH)	P
Electrostatic Discharge Human Body Model (ESD-HBM)	1,100V and 2,200V, JESD22-A114	P
Electrostatic Discharge Charge Device Model (ESD-CDM)	500V, JESD22-C101	P
Electrostatic Discharge Machine Model (ESD-MM)	200V, JESD22-A115	P
Static Latch up	85C, ± 140mA and Overvoltage Test (5.4V – 8.25V) ±200mA 85C and Overvoltage Test (5.94V – 9.1V) JESD78	P
Acoustic Microscopy	J-STD-020 Precondition: JESD22 Moisture Sensitivity Level 3 (192 Hrs., 30 C, 60% RH)	P
Neutron Emission (SER)	3.6V at 90C, 95C, and 97C, and 2.7V to 3.6V at Room Temperature, JESD89	0.05FIT/ Mb
Age Bond Strength	Mil-Std-883, Method 2011	P
Soft Error (Alpha Particle)	JESD89A	P
SEM X-Section	XY audit at center wafer and edge wafer	P
Low Temperature Operating Life Test	Dynamic Operating Condition, 2.7V, -30°C, 500 Hours	P
High Temp Steady State Life Test	Static Operating Condition, 2.7V, 150°C, 1000 Hours	P

## RELIABILITY FAILURE RATE SUMMARY

Stress/Test	Device Tested/ Device Hours	# Fails	Activation Energy	Thermal AF <sup>3</sup>	Failure Rate
High Temperature Operating Life Early Failure Rate	3,066 Devices / 294,336 Device Hours	0	N/A	N/A	0 PPM
High Temperature Operating Life <sup>1,2</sup> Long Term Failure Rate	950 Devices / 711,000 Device Hours	0	0.7	170	8 FITs

\*\* EFR data is based on QTP 114501 only, LFR data is based on both QTP 071304, and 114501 data

<sup>1</sup> Assuming an ambient temperature of 55°C and a junction temperature rise of 15°C.

<sup>2</sup> Chi-squared 60% estimations used to calculate the failure rate.

<sup>3</sup> 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<sub>A</sub> = The Activation Energy of the defect mechanism.

K = Boltzmann's constant = 8.62x10<sup>-5</sup> eV/Kelvin.

T<sub>1</sub> is the junction temperature of the device under stress and T<sub>2</sub> is the junction temperature of the device at use conditions.

## Reliability Test Data

### QTP # 071304

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
<b>STRESS: HIGH TEMP DYNAMIC OPERATING LIFE-EARLY FAILURE RATE, 150C, 2.7V, Vcc Max</b>							
CY14B104L (7C14104AC)	4811240	610819876	CML-R	48	1222	0	
CY14B104L (7C14104AC)	4814841	610832326	CML-R	48	1316	0	
CY14B104L (7C14104AC)	4817306	610830615	CML-R	48	932	0	
CY14B104L (7C14104AC)	4819437	610842294	CML-R	48	813	0	
<b>STRESS: HIGH TEMP DYNAMIC OPERATING LIFE-LATENT FAILURE RATE, 150C, 2.7V, Vcc Max</b>							
CY14B104L (7C14104AC)	4811240	610819876	CML-R	500	120	0	
CY14B104L (7C14104AC)	4814841	610832326	CML-R	500	120	0	
CY14B104L (7C14104AC)	4817306	610830615	CML-R	500	119	0	
CY14B104L (7C14104AC)	4819437	610842294	CML-R	500	119	0	
<b>STRESS: Pre-/ Post HIGH TEMP DYNAMIC OPERATING LIFE-LATENT FAILURE RATE CHAR</b>							
CY14B104L (7C14104AC)	4811240	610819876	CML-R	80/500	10	0	
CY14B104L (7C14104AC)	4814841	610832326	CML-R	80/500	10	0	
CY14B104L (7C14104AC)	4817306	610830615	CML-R	80/500	10	0	
CY14B104L (7C14104AC)	4819437	610842294	CML-R	80/500	10	0	
<b>STRESS: ENDURANCE, 200K CYCLES, 90C</b>							
CY14B104L (7C14104AC)	4811240	610819876	CML-R	COMP	80	0	
CY14B104L (7C14104AC)	4817305	610841260	CML-R	COMP	77	0	
CY14B104L (7C14104AC)	4817306	610830615	CML-R	COMP	160	0	
CY14B104L (7C14104AC)	4819437	610842294	CML-R	COMP	80	0	
CY14B104L (7C14104AC)	4817306/4818074		CML-R	COMP	3307	0	
<b>STRESS: DATA RETENTION, 150C</b>							
CY14B104L (7C14104AC)	4817306	610830615	CML-R	1000	77	0	
CY14B104L (WAFER)	4817306	610830615	CML-R	1008	228	0	
CY14B104L (7C14104AC)	4817305	610841260	CML-R	1000	80	0	
CY14B104L (WAFER)	4817305	610841260	CML-R	1008	216	0	
CY14B104L (7C14104AC)	4818074	N/A	CML-R	1000	80	0	
CY14B104L (WAFER)	4818074	N/A	CML-R	1008	402	0	

## Reliability Test Data

### QTP # 071304

<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>
<b>STRESS: ESD-HUMAN BODY CIRCUIT PER JEDEC EIA/JESD22-A114-B, 2,200V</b>							
CY14B104L (7C14104AC)	4807004	610812949	CML-R	COMP	8	0	
CY14B104L (7C14104AC)	4817306	610830615	CML-R	COMP	8	0	
CY14B104L (7C14104AC)	4811240	610819876	CML-R	COMP	8	0	
<b>STRESS: ESD-CHARGE DEVICE MODEL, 500V</b>							
CY14B104L (7C14104AC)	4807004	610812949	CML-R	COMP	9	0	
CY14B104L (7C14104AC)	4817306	610830615	CML-R	COMP	9	0	
CY14B104L (7C14104AC)	4811240	610819876	CML-R	COMP	9	0	
<b>STRESS: ESD-MACHINE MODEL, 200V</b>							
CY14B104L (7C14104AC)	4807004	610812949	CML-R	COMP	5	0	
CY14B104L (7C14104AC)	4817306	610830615	CML-R	COMP	5	0	
CY14B104L (7C14104AC)	4811240	610819876	CML-R	COMP	5	0	
<b>STRESS: HI-ACCEL SATURATION TEST, 130C, 85%RH, 1.98V, PRE COND 192 HR 30C/60%RH, MSL3</b>							
CY14B104L (7C14104AC)	4811240	610819876	CML-R	128	77	0	
CY14B104L (7C14104AC)	4814841	610832326	CML-R	128	80	0	
CY14B104L (7C14104AC)	4817306	610830615	CML-R	128	77	0	
<b>STRESS: PRESSURE COOKER TEST, 121C, 100%RH, 15 Psig, PRE COND 192 HR 30C/60%RH, MSL3</b>							
CY14B104L (7C14104AC)	4807004	610812949	CML-R	168	77	0	
CY14B104L (7C14104AC)	4814841	610832326	CML-R	168	80	0	
CY14B104L (7C14104AC)	4817306	610830615	CML-R	168	77	0	
<b>STRESS: Temperature Cycle COND. C, -65C TO 150C, PRE COND 192 HRS 30C/60%RH, MSL3</b>							
CY14B104L (7C14104AC)	4807004	610812949	CML-R	1000	77	0	
CY14B104L (7C14104AC)	4817306	610830615	CML-R	1000	80	0	
CY14B104L (7C14104AC)	4814841	610832326	CML-R	500	80	0	
<b>STRESS: STATIC LATCH-UP TESTING, 125C, 5.4V, ±200mA</b>							
CY14B104L (7C14104AC)	4807004	610812949	CML-R	COMP	6	0	
CY14B104L (7C14104AC)	4814841	610832326	CML-R	COMP	6	0	
CY14B104L (7C14104AC)	4819437	610842294	CML-R	COMP	6	0	



## Reliability Test Data

### QTP # 071304

<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>
<b>STRESS: AGE BOND</b>							
CY14B104L (7C14104AC)	4807004	610812949	CML-R	COMP	10	0	
CY14B104L (7C14104AC)	4817306	610830615	CML-R	COMP	10	0	
CY14B104L (WAFER)	4818074	N/A	CML-R	COMP	10	0	
<b>STRESS: ACOUSTIC-MSL3</b>							
CY14B104L (7C14104AC)	4807004	610812949	CML-R	COMP	15	0	
CY14B104L (7C14104AC)	4817306	610830615	CML-R	COMP	15	0	
CY14B104L (7C14104AC)	4814841	610832326	CML-R	COMP	15	0	
<b>STRESS: SER – ALPHA PARTICLE, 3-TEPM, 3-VOLTAGE, FIT=550 FIT/Mbit @ 85C, Vcc Nom</b>							
CY14B104L (7C14104AC)	4811240	610819876	CML-R	COMP	3	0	
CY14B104L (7C14104AC)	4817306	610830615	CML-R	COMP	3	0	
CY14B104L (7C14104AC)	4819437	610842294	CML-R	COMP	3	0	
<b>STRESS: SER – NEUTRON/PROTON</b>							
CY14B104L (7C14104AC)	4808220	N/A	CML-R	COMP	3	0	
<b>STRESS: LOW TEMPERATURE OPERATING LIFE TEST, -30C, 2.7V, Vcc Max</b>							
CY14B104L (7C14104AC)	4817306	610830615	CML-R	500	77	0	
<b>STRESS: HIGH TEMP STEADY STATE LIFE TEST, 150C, 2.7V, Vcc Max</b>							
CY14B104L (7C14104AC)	4811240	610819876	CML-R		1000	76	0

## Reliability Test Data

**QTP #: 114501**

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
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**STRESS: Data Retention, 150C, 1,000 hours**

CY14B116S-BZ45XII	4209152	611222679	ASE-G	500H	77	0	
CY14B116S-BZ45XII	4209152	611222679	ASE-G	1000H	77	0	

**STRESS: Endurance Test (1.4 Million Cycles) + 150C, 168 hour Data Retention**

CY14B116S-BZ45XII	4407928	611420742	CML-RA	1.4 x 10 <sup>6</sup> Cycles	80	0	
CY14B116S-BZ45XII	4407928	611420742	CML-RA	168H	80	0	

**STRESS: High Temperature Operating Life- Early Failure Rate, 125C, Vcc = 115% Vcc Nom (2.1V Vprw)**

CY14E116N-Z45XI	4407928	611420147	OSE-T	96H	456	0	
CY14B116N-Z45XI	4407928	611420148	OSE-T	96H	468	0	
CY14E116S-BZ45XI	4407928	611420762	CML-RA	96H	411	0	
CY14B116S-BZ45XI	4407928	611420753	CML-RA	96H	349	0	
CY14B116N-Z45XI	4406408	611418664	OSE-T	96H	388	0	
CY14E116S-BZ45XI	4406408	611418404	CML-RA	96H	321	0	
CY14E116S-BZ45XI	4406408	611418403	CML-RA	96H	188	0	
CY14E116S-BZ45XI	4406408	611418403	CML-RA	96H	112	0	
CY14E116N-Z45XI	4406408	611418524	OSE-T	96H	289	0	
CY14B116S-BZ45XIES	4408518	611422469	CML-RA	96H	84	0	

**STRESS: High Temperature Operating Life- Latent Failure Rate, 125C, Vcc = 115% Vcc Nom (2.1V Vprw)**

CY14E116S-BZ45XI	4407928	611420762	CML-RA	160H	120	0	
CY14E116S-BZ45XI	4407928	611420762	CML-RA	500H	120	0	
CY14E116S-BZ45XI	4407928	611420762	CML-RA	1000H	120	0	
CY14B116S-BZ45XI	4407928	611420753	CML-RA	160H	120	0	
CY14B116S-BZ45XI	4407928	611420753	CML-RA	500H	120	0	
CY14B116S-BZ45XI	4407928	611420753	CML-RA	1000H	120	0	
CY14E116S-BZ45XI	4406408	611418404	CML-RA	160H	120	0	
CY14E116S-BZ45XI	4406408	611418404	CML-RA	500H	119	0	
CY14E116S-BZ45XI	4406408	611418404	CML-RA	1000H	119	0	
CY14E116S-BZ45XI	4406408	611418403	CML-RA	160H	120	0	
CY14E116S-BZ45XI	4406408	611418403	CML-RA	500H	113	0	
CY14E116S-BZ45XI	4406408	611418403	CML-RA	1000H	113	0	

**STRESS: Highly Accelerated Saturation Test (HAST), 130C, 85%RH, 5.5V (MSL 3 Preconditioning)**

CY14E116N-ZSP45XIES	4211295	611400646	ASE-G	96H	30	0	
CY14B116N-ZSP45XIES	4211295	611400645	ASE-G	96H	30	0	

**STRESS: Pressure Cooker Test (PCT), 121 C, 100%RH, 15 PSIG (MSL 3 Preconditioning)**

CY14E116N-ZSP45XIES	4211295	611400646	ASE-G	168H	30	0	
CY14B116N-ZSP45XIES	4211295	611400645	ASE-G	168H	79	0	

## Reliability Test Data

### QTP #: 114501

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
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**STRESS: Temperature Cycling Test (TCT), Condition C, -65 C to 150 C (MSL 3 Preconditioning)**

CY14B116N-ZSP45XIES	4211295	611400645	ASE-G	500	80	0	
CY14B116L-ZS45XIES	4211195	611346792	ASE-G	500	80	0	

**STRESS: Electrostatic Discharge- Human Body Model (ESD-HBM): 1,100V**

CY14B116S-BZ45XIES	4421207	611429440	CML-RA	1,100V	3	0	
CY14B116N-Z45XIES	4407867	611420666	OSE-T	1,100V	3	0	
CY14V116G7-BZ30XIES	4407867	611420745	CML-RA	1,100V	3	0	
CY14E116L-Z45XIES	4407867	611421820	OSE-T	1,100V	3	0	
CY14B116N-Z45XI	4406408	611418664	OSE-T	1,100V	3	0	
CY14E116L-Z45XIES	4408518	611420665	OSE-T	1,100V	3	0	
CY14V116G7-BZ30XIES	4408518	611420744	CML-RA	1,100V	3	0	
CY14B116K-ZS45XIES	4408518	611420437	ASE-G	1,100V	3	0	
CY14B116K-ZS25XIES	4408518	611424674	ASE-G	1,100V	3	0	
CY14B116S-BZ45XIES	4412574	611428898	CML-RA	1,100V	3	0	

**STRESS: Electrostatic Discharge- Human Body Model (ESD-HBM): 2,200V**

CY14B116S-BZ45XIES	4421207	611429440	CML-RA	2,200V	8	0	
CY14B116N-Z45XIES	4407867	611420666	OSE-T	2,200V	8	0	
CY14V116G7-BZ30XIES	4407867	611420745	CML-RA	2,200V	8	0	
CY14E116L-Z45XIES	4407867	611421820	OSE-T	2,200V	8	0	
CY14B116N-Z45XI	4406408	611418664	OSE-T	2,200V	8	0	
CY14E116L-Z45XIES	4408518	611420665	OSE-T	2,200V	8	0	
CY14V116G7-BZ30XIES	4408518	611420744	CML-RA	2,200V	8	0	
CY14B116K-ZS45XIES	4408518	611420437	ASE-G	2,200V	8	0	
CY14B116K-ZS25XIES	4408518	611424674	ASE-G	2,200V	8	0	
CY14B116S-BZ45XIES	4412574	611428898	CML-RA	2,200V	8	0	

**STRESS: Electrostatic Discharge- Charge Device Model (ESD-CDM): 165 BGA- Asynchronous SRAM, 500V**

CY14B116S-BZ45XIES	4407928	611420742	CML-RA	500V	9	0	
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**STRESS: Electrostatic Discharge- Charge Device Model (ESD-CDM): 165 BGA- x16 SRAM ONFI and x8 ONFI, 500V**

CY14V116G7-BZ30XIES	4407867	611420745	CML-RA	500V	9	0	
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**STRESS: Electrostatic Discharge- Charge Device Model (ESD-CDM):54 TSOPII, 500V**

CY14B116M-ZSP45XIES	4408518	611421821	ASE-G	500V	9	0	
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**STRESS: Electrostatic Discharge- Charge Device Model (ESD-CDM):48 TSOPII, 500V**

CY14E116L-Z45XIES	4407867	611421820	OSE-T	500V	9	0	
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**STRESS: Electrostatic Discharge- Charge Device Model (ESD-CDM):48 TSOPII, 500V**

CY14B116N-Z45XIES	4407867	611420666	OSE-T	500V	9	0	
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**STRESS: Electrostatic Discharge- Charge Device Model (ESD-CDM):44 TSOPII, 500V**

CY14B116K-ZS45XIES	4407867	611420505	ASE-G	500V	9	0	
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## Reliability Test Data

QTP #: 114501

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
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**STRESS: Electrostatic Discharge- Machine Model (ESD-MM): 200V**

CY14B116N-Z45XIES	4407867	611420666	OSE-T	200V	5	0	
CY14V116G7-BZ30XIES	4407867	611420745	CML-RA	200V	5	0	
CY14E116L-Z45XIES	4408518	611420665	OSE-T	200V	5	0	
CY14B116K-ZS45XIES	4408518	611420437	ASE-G	200V	5	0	
CY14B116S-BZ45XIES	4412574	611428898	CML-RA	200V	5	0	

**STRESS: Static Latch up, ±140mA 85C, and Overvoltage Test at 5.4V- 8.25V**

CY14E116S-BZ45XIES	4407928	611420743	CML-RA	±140mA 85C	6	0	
CY14B116N-Z45XIES	4407867	611420666	OSE-T	±140mA 85C	6	0	
CY14V116G7-BZ30XIES	4407867	611420745	CML-RA	±140mA 85C	6	0	
CY14V116N-BZ30XIES	4408518	611420746	CML-RA	±140mA 85C	6	0	
CY14V116N-BZ30XIES	4408518	611424176	CML-RA	±140mA 85C	6	0	
CY14E116L-Z45XIES	4408518	611420665	OSE-T	±140mA 85C	6	0	
CY14B116K-ZS25XIES	4408518	611424674	ASE-G	±140mA 85C	6	0	

**STRESS: Static Latch up, ±200mA 85C, and Overvoltage Margin Test at 5.94V- 9.1V**

CY14E116S-BZ45XIES	4407928	611420743	CML-RA	±200mA 85C	3	0	
CY14B116N-Z45XIES	4407867	611420666	OSE-T	±200mA 85C	3	0	
CY14V116G7-BZ30XIES	4407867	611420745	CML-RA	±200mA 85C	3	0	
CY14V116N-BZ30XIES	4408518	611420746	CML-RA	±200mA 85C	3	0	
CY14V116N-BZ30XIES	4408518	611424176	CML-RA	±200mA 85C	3	0	
CY14E116L-Z45XIES	4408518	611420665	OSE-T	±200mA 85C	3	0	
CY14B116K-ZS25XIES	4408518	611424674	ASE-G	±200mA 85C	3	0	

**STRESS: Acoustic Microscopy, Before and After MSL3 Preconditioning with a 192hour 30C/60%RH soak**

CY14B116N-ZSP45XIES	4211295	611400645	ASE-G	192H	15	0	
CY14E116N-ZSP45XIES	4211295	611400646	ASE-G	192H	15	0	
CY14B116L-ZS45XIES	4211195	611346792	ASE-G	192H	15	0	

**STRESS: Neutron Emission (SER) 3.6V at 90C, 95C, and 97C, and 2.7V to 3.6V at Room Temperature**

CY14B116S-BZ45XIES	4412574	QB	CSJ	Comp	3	0	
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## Document History Page

Document Title: QTP# 114501: S8TNV-5 RAINIER 16M NVSRAM PRODUCT QUALIFICATION AT SKYWATER  
Document Number: 001-94632

Rev.	ECN No.	Orig. of Change	Description of Change
**	4527725	BECK	Initial Release
*A	4708581	BECK	Referenced Technology Qualification, QTP# 071304, on page 3, and added the Technology Qualification Data to pages 5-9.
*B	6653856	JYF	Updated Qualification Report to align with current requirements.
		SLLO	Removed Distribution and Posting from the document history page.