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# Cypress Semiconductor Product Qualification Report

**QTP# 032406 VERSION \*B  
May 2014**

<b>Synchronous Dual Port RAM Family (2 Meg, 4 Meg, 9 Meg &amp; 18 Meg), R7FTW-3R Technology , Fab4</b>	
<b>CY7C0831V</b>	<b>128K x 18 (2M) 3.3V Synchronous Dual-Port RAM</b>
<b>CY7C0832V</b>	<b>256K x 18 (4M) 3.3V Synchronous Dual-Port RAM</b>
<b>CY7C0851V</b>	<b>64K x 36 (2M) 3.3V Synchronous Dual-Port RAM</b>
<b>CY7C0852V</b>	<b>128 x 36 (4M) 3.3V Synchronous Dual-Port RAM</b>
<b>CY7C0853V</b>	<b>256 x 36 (9M) 3.3V Synchronous Dual-Port RAM</b>
<b>CYD18S72V</b>	<b>FLEXx72™ 18-Mb (256K x 72) Synchronous Dual – Port RAM</b>

**FOR ANY QUESTIONS ON THIS REPORT, PLEASE CONTACT  
[reliability@cypress.com](mailto:reliability@cypress.com) or via a CYLINK CRM CASE**

**Prepared By:**  
Lorena R. Zapanta (ILZ)  
Reliability Engineer

**Reviewed By:**  
Rene Rodgers (RT)  
Reliability Manager

**Approved By:**  
Richard Oshiro(RGO)  
Reliability Director

## PRODUCT QUALIFICATION HISTORY

QUAL REPORT	DESCRIPTION OF QUALIFICATION PURPOSE	DATE COMP.
014807	4 Meg Dual Port Device Qual (7C08523A) and R7FTW-3R Technology Qual	Feb 01
020709	Process R7FTW-3R Via 2 W Plug (4 Meg Dual Port )	Apr 02
023101	9 Meg Sync Dual Port Stacked Die, R7FT-3R, 172-ball FBGA (15mm x 15mm x 1.25mm), ASE Taiwan Assembly, MSL3	Dec 02
032406	18 Meg Dual Port 2 Stacked Die (4- 4 Meg die), R7FTW-3R, 484-ball FBGA, MSL3 Assembled @ASE-Taiwan	Dec 03
033202	Increased Polyimide thickness of 10um max from 5-6um	Mar 04
044104	6 micron Polyimide thickness for 18 Meg (4-4 ) die fabricated @ Fab4, 484-ball FBGA	Nov 04
041505	8 micron Polyimide thickness for 18 Meg (4-4 ) die fabricated @ Fab4, 484-ball FBGA	Nov 04

PRODUCT DESCRIPTION (for qualification)	
Qualification Purpose: Synchronous Dual Port RAM Device Family	
Marketing Part #:	CY7C0851V/ CY7C0852V/ CY7C0853V/CY7C0831V/CY7C0832V/CYD18S72V
Device Description:	3.3V, Commercial/Industrial, available in 172-484 ball FBGA & 120-176-pin TQFP
Cypress Division:	Cypress Semiconductor Corporation – Data Com Division (DCD)
Overall Die (or Mask) REV:	Rev. A
What ID markings on Die:	7C08523VA

TECHNOLOGY/FAB PROCESS DESCRIPTION – R7FT-3R			
Number of Metal Layers:	3	Metal Composition:	Metal 1: 300A TiW/4.23KA Al/150A Ti Metal 2: 300A TiW/4.23K Al /150A Ti Metal 3: 300A TiW/8K Al /150A Ti
Passivation Type and Materials:	1,000A TEOS + 9,000A SiN		
Free Phosphorus contents in top glass layer(%):	0%		
Die Coating(s), if used:	N/A		
Number of Transistors in Device:	55 million		
Number of Gates in Device:	44 million		
Generic Process Technology/Design Rule ( -	0.16U		
Gate Oxide Material/Thickness (MOS):	SiO <sub>2</sub> 32Å		
Name/Location of Die Fab (prime) Facility:	Cypress Semiconductor – Bloomington Minesota		
Die Fab Line ID/Wafer Process ID:	RAM7FT-3R		

#### PACKAGE AVAILABILITY

PACKAGE	ASSEMBLY FACILITY SITE
172-484 lead FBGA, 176-lead TQFP	ASE Taiwan (TAIWN-G)

**Note: Package Qualification details upon request.**

MAJOR PACKAGE INFORMATION USED IN THIS QUALIFICATION	
Package Designation:	BB172
Package Outline, Type, or Name:	172-ball, Thin Ball Grid Array (FBGA)
Mold Compound Name/Manufacturer:	Shinetsu KMC-211AA-EC
Mold Compound Flammability Rating:	V-O per UL94
Oxygen Rating Index:	>28%
Substrate Material:	ASEMT
Lead Finish, Composition / Thickness:	Solder Ball, 63%Sn, 37%Pb
Die Backside Preparation	Backgrind
Die Separation Method:	Wafer Saw
Die Attach Supplier:	Dexter
Die Attach Material:	QMI 536
Die Attach Method:	Silver Epoxy
Bond Diagram Designation:	10-04438
Wire Bond Method:	Thermosonic
Wire Material/Size:	Au, 1.0um
Thermal Resistance Theta JA °C/W:	40°C/W
Package Cross Section Yes/No:	N/A
Assembly Process Flow:	49-41024
Name/Location of Assembly (prime) facility:	ASE Taiwan (TAIWN-G)

ELECTRICAL TEST / FINISH DESCRIPTION	
Test Location:	ASE Taiwan (TAIWN-G), CML-R
Fault Coverage:	100%

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

MAJOR PACKAGE INFORMATION USED IN THIS QUALIFICATION	
Package Designation:	BB484
Package Outline, Type, or Name:	484-ball, Thin Ball Grid Array (FBGA)
Mold Compound Name/Manufacturer:	Shinetsu KMC-211AA-EC
Mold Compound Flammability Rating:	V-O per UL94
Oxygen Rating Index:	>28%
Substrate Material:	ASEMT
Lead Finish, Composition / Thickness:	Solder Ball, 63%Sn, 37%Pb
Die Backside Preparation	Backgrind
Die Separation Method:	Wafer Saw
Die Attach Supplier:	Dexter
Die Attach Material:	QMI 536
Die Attach Method:	Silver Epoxy
Bond Diagram Designation:	10-05261
Wire Bond Method:	Thermosonic
Wire Material/Size:	Au, 1.0um
Thermal Resistance Theta JA °C/W:	11.11°C/W
Package Cross Section Yes/No:	N/A
Assembly Process Flow:	49-41024
Name/Location of Assembly (prime) facility:	ASE Taiwan (TAIWN-G)

ELECTRICAL TEST / FINISH DESCRIPTION	
Test Location:	CML-R
Fault Coverage:	100%

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

MAJOR PACKAGE INFORMATION USED IN THIS QUALIFICATION	
Package Designation:	A176
Package Outline, Type, or Name:	176-pin Thin Quad Flat Pack (TQFP)
Mold Compound Name/Manufacturer:	Sumitomo EME 7320A
Mold Compound Flammability Rating:	V-O per UL94
Oxygen Rating Index:	>28%
Lead Frame Material:	Copper
Lead Finish, Composition / Thickness:	Solder Plate, 85%Sn, 15%Pb
Die Backside Preparation Method/Metallization:	Backgrind
Die Separation Method:	Wafer Saw
Die Attach Supplier:	Ablestik
Die Attach Material:	Ablestik 8361
Wire Bond Method:	Thermosonic
Wire Material/Size:	Gold/ 1.2mil
Thermal Resistance Theta JA °C/W:	38°C/W
Package Cross Section Yes/No:	N/A
Name/Location of Assembly (prime) facility:	ASE Taiwan (TAIWN-G)

ELECTRICAL TEST / FINISH DESCRIPTION	
Test Location:	ASE Taiwan (TAIWN-G)
Fault Coverage:	100%

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

# RELIABILITY TESTS PERFORMED PER SPECIFICATION REQUIREMENTS

Stress/Test	Test Condition (Temp/Bias)	Result P/F
High Temperature Operating Life Early Failure Rate	Dynamic Operating Condition, Vcc Max = 2.3V, 125°C	P
High Temperature Operating Life Latent Failure Rate	Dynamic Operating Condition, Vcc Max=2.3V, 125°C	P
High Temperature Steady State Life	Static Operating Condition, Vcc = 3.63 V, 150°C, Vcc Max	P
Temperature Cycle	MIL-STD-883, Method 1010, Condition C, -65°C to 150°C Precondition: JESD22 Moisture Sensitivity MSL 3 192 Hrs., 30°C/60%RH, 220°C+5, -0°C Reflow	P
Pressure Cooker	121°C, 100%RH Precondition: JESD22 Moisture Sensitivity MSL 3 192 Hrs, 30C/60%RH, 220°C+5, -0°C Reflow	P
High Accelerated Saturation Test (HAST)	130°C, 3.63V, 85%RH Precondition: JESD22 Moisture Sensitivity MSL 3 192 Hrs, 30C/60%RH, 220°C+5, 0°C Reflow	P
High Temperature Storage	150°C ± 5°C	P
Electrostatic Discharge Charge Device Model (ESD-CDM)	500V, JESD22-C101	P
Electrostatic Discharge Human Body Model (ESD-HBM)	2,200V, MIL-STD-883, Method 3015	P
Age Bond Strength	MIL-STD-883, Method 883-2011, 200C	P
Ball Shear	JESD22-B116, Cpk : 1.33, Ppk : 1.66	P
Bond Pull	MIL-STD-883 – Method 2011, Cpk : 1.33, Ppk : 1.66	P
Die Shear	Die Shear MIL-STD-883, Method 2019 Per die size: <3000 sq. mils = 1.2 kgf	P
Internal Visual	MIL-STD-883-2014	P
X-Ray	MIL-STD-883, Method 2012	P
Thermal Shock	MIL-STD-883, Method 1011, Condition B, -55 C to 125C and JESD22-A106, Condition C, -55 C to 125C	P
Current Density	Meets the Technology Device Level Reliability Specifications	P
Acoustic Microscopy, MSL 3	J-STD-020 Precondition: JESD22 Moisture Sensitivity Level (192 Hrs., 30 C°, 60% RH, 260C Reflow)	P



## RELIABILITY FAILURE RATE SUMMARY

Stress/Test	Device Tested/ Device Hours	# Fails	Activation Energy	Acceleration Factor <sup>3</sup>	Failure Rate
High Temperature Operating Life Early Failure Rate (4 Meg)	2832	0	N/A	N/A	0 PPM
High Temperature Operating Life Early Failure Rate (9 Meg)	499	0	N/A	N/A	0 PPM
High Temperature Operating Life Early Failure Rate (18 Meg)	321	0	N/A	N/A	0 PPM
High Temperature Operating Life <sup>1,2</sup> Long Term Failure Rate	754,531 HRs	0	0.7	170	7 FIT

<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:

$E_A$  = The Activation Energy of the defect mechanism.  $k$  = Boltzmann's constant =  $8.62 \times 10^{-5}$  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 #: 014807**

Device	Fab Lot #	Assy Lot #	Ass Loc	Duration	Samp	Rej	Failure Mechanism
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**STRESS: ACOUSTIC, MSL3**

CY7C0852V-AC (7C08523A)	4130707	610133760L1	TAIWN-G	COMP	15	0	
CY7C0852V-AC (7C08523A)	4131840	610135256L1	TAIWN-G	COMP	15	0	
CY7C0852V-AC (7C08523A)	4131841	610137123L1	TAIWN-G	COMP	15	0	

**STRESS: HIGH TEMP DYNAMIC OPERATING LIFE-EARLY FAILURE RATE, 150C, 2.3V, Vcc Max**

CY7C0852V-AC (7C08523A)	4131841	610137123L1	TAIWN-G	48	772	0	
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**STRESS: HIGH TEMP DYNAMIC OPERATING LIFE-EARLY FAILURE RATE, 125C, 2.3V, Vcc Max**

CY7C0853V-BBC (7C08533A)	4147878	610145152	TAIWN-G	96	455	0	
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**STRESS: HIGH TEMP DYNAMIC OPERATING LIFE-LATENT FAILURE RATE, 150C, 2.3V, Vcc Max**

CY7C0852V-AC (7C08523A)	4131840	610135256	TAIWN-G	80	400	0	
CY7C0852V-AC (7C08523A)	4131840	610135256	TAIWN-G	336	256	0	
CY7C0852V-AC (7C08523A)	4131840	610135256	TAIWN-G	500	193	0	
CY7C0852V-AC (7C08523A)	4131840	610135256L1	TAIWN-G	80	300	0	
CY7C0852V-AC (7C08523A)	4131840	610135256L1	TAIWN-G	336	295	0	
CY7C0852V-AC (7C08523A)	4131840	610135256L1	TAIWN-G	500	274	0	
CY7C0852V-AC (7C08523A)	4131841	610137123L1	TAIWN-G	80	400	0	
CY7C0852V-AC (7C08523A)	4131841	610137123L1	TAIWN-G	336	255	0	
CY7C0852V-AC (7C08523A)	4131841	610137123L1	TAIWN-G	500	193	0	
CY7C0852V-AC (7C08523A)	4133371	610137695	TAIWN-G	80	400	0	
CY7C0852V-AC (7C08523A)	4133371	610137695	TAIWN-G	336	398	0	
CY7C0852V-AC (7C08523A)	4133371	610137695	TAIWN-G	500	385	0	
CY7C0852V-AC (7C08523A)	4133371	610138257L1	TAIWN-G	80	400	0	

**STRESS: HIGH TEMP STEADY STATE LIFE, 150C, 3.63V, Vcc Max**

CY7C0852V-AC (7C08523A)	4130707	610133760L1	TAIWN-G	80	78	0	
CY7C0852V-AC (7C08523A)	4130707	610133760L1	TAIWN-G	168	76	0	

**STRESS: ESD-HUMAN BODY CIRCUIT PER MIL STD 883, METHOD 3015, 2,200V**

CY7C0852V-AC (7C08523A)	4133371	610137695	TAIWN-G	COMP	9	0	
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## Reliability Test Data

QTP #: 014807

Device	Fab Lot #	Assy Lot #	Ass Loc	Duration	Samp	Rej	Failure Mechanism
<b>STRESS: ESD-CHARGE DEVICE MODEL, 500V</b>							
CY7C0852V-AC (7C08523A)	4131840	610135256L1	TAIWN-G	COMP	9	0	
CY7C0852V-AC (7C08523A)	4133371	610137695	TAIWN-G	COMP	9	0	
<b>STRESS: STATIC LATCH-UP TESTING (125C, 10.0V, +/-300mA)</b>							
CY7C0852V-AC (7C08523A)	4130707	610133760L1	TAIWN-G	COMP	3	0	
CY7C0852V-AC (7C08523A)	4131840	610135256L1	TAIWN-G	COMP	3	0	
<b>STRESS: AGE BOND STRENGTH</b>							
CY7C0852V-AC (7C08523A)	4130707	610133760L1	TAIWN-G	COMP	5	0	
CY7C0852V-AC (7C08523A)	4131840	610135256L1	TAIWN-G	COMP	6	0	
<b>STRESS: HIGH TEMPERATURE STORAGE, +150C</b>							
CY7C0852V-BBC (7C08523A)	4128335	610130788	TAIWN-G	500	48	0	
CY7C0852V-BBC (7C08523A)	4128335	610130788	TAIWN-G	1000	48	0	
<b>STRESS: HI-ACCEL SATURATION TEST, 130C, 85%RH, 3.63V, PRE COND 192 HR 30C/60%RH, MSL3</b>							
CY7C0852V-AC (7C08523A)	4131840	610135256	TAIWN-G	128	47	0	
CY7C0852V-AC (7C08523A)	4131840	610135256L1	TAIWN-G	128	48	0	
CY7C0852V-AC (7C08523A)	4131841	610137123L1	TAIWN-G	128	46	0	
<b>STRESS: PRESSURE COOKER TEST, 121C, 100%RH, PRE COND 192 HR 30C/60%RH, MSL3</b>							
CY7C0852V-AC (7C08523A)	4131840	610135256L1	TAIWN-G	168	47	0	
CY7C0852V-AC (7C08523A)	4131841	610137123L1	TAIWN-G	168	48	0	
<b>STRESS: TC COND. C -65C TO 150C, PRECONDITION 192 HRS 30C/60%RH, MSL3</b>							
CY7C0852V-AC (7C08523A)	4130707	610133760L1	TAIWN-G	300	47	0	
CY7C0852V-AC (7C08523A)	4130707	610133760L1	TAIWN-G	500	46	0	
CY7C0852V-AC (7C08523A)	4130707	610133760L1	TAIWN-G	1000	45	0	
CY7C0852V-AC (7C08523A)	4131841	610137123L1	TAIWN-G	300	46	0	
CY7C0852V-AC (7C08523A)	4131841	610137123L1	TAIWN-G	500	45	0	



## Reliability Test Data

**QTP #: 020709**

<b>Device</b>	<b>Fab Lot #</b>	<b>Assy Lot #</b>	<b>Ass Loc</b>	<b>Duration</b>	<b>Samp</b>	<b>Rej</b>	<b>Failure Mechanism</b>
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**STRESS: HIGH TEMP DYNAMIC OPERATING LIFE-EARLY FAILURE RATE, 125C, 2.3V, Vcc Max**

CY7C0852V-AC (7C08523A)	4147843	610203531	TAIWN-G	96	595	0	
CY7C0852V-AC (7C08523A)	4147843	610203532	TAIWN-G	96	505	0	
CY7C0852V-AC (7C08523A)	4150386	610206445	TAIWN-G	96	499	0	

**STRESS: HIGH TEMP DYNAMIC OPERATING LIFE-LATENT FAILURE RATE, 125C, 2.3V, Vcc Max**

CY7C0852V-AC (7C08523A)	4147843	610203532	TAIWN-G	336	503	0	
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**STRESS: TC COND. C -65C TO 150C, PRECONDITION 192 HRS 30C/60%RH, MSL3**

CY7C0852V-AC (7C08523A)	4147843	610203532	TAIWN-G	300	44	0	
CY7C0852V-AC (7C08523A)	4147843	610203532	TAIWN-G	500	44	0	
CY7C0852V-AC (7C08523A)	4147843	610203532	TAIWN-G	1000	44	0	

## Reliability Test Data

**QTP #: 023101**

<b>Device</b>	<b>Fab Lot #</b>	<b>Assy Lot #</b>	<b>Ass Loc</b>	<b>Duration</b>	<b>Samp</b>	<b>Rej</b>	<b>Failure Mechanism</b>
<b>STRESS: ACOUSTIC, MSL3</b>							
CY7C0853V-BBC (7C08533A)	4133371	610136480L	TAIWN-G	COMP	15	0	
CY7C0853V-BBC (7C08533A)	4147878	610145152L1	TAIWN-G	COMP	15	0	
<b>STRESS: HIGH TEMP DYNAMIC OPERATING LIFE-EARLY FAILURE RATE, 125C, 2.3V, Vcc Max</b>							
CY7C0853V-BBC (7C08533A)	4147878	610145152	TAIWN-G	96	499	0	
<b>STRESS: HIGH TEMP DYNAMIC OPERATING LIFE-LATENT FAILURE RATE, 125C, 2.3V, Vcc Max</b>							
CY7C0853V-BBC (7C08533A)	4147878	610145152	TAIWN-G	168	118	0	
CY7C0853V-BBC (7C08533A)	4147878	610145152	TAIWN-G	500	118	0	
CY7C0853V-BBC (7C08533A)	4147878	610145152	TAIWN-G	1000	118	0	
<b>STRESS: ESD-HUMAN BODY CIRCUIT PER MIL STD 883, METHOD 3015, 2,000V</b>							
CY7C0853V-BBC (7C08533A)	4147878	610145152L1	TAIWN-G	COMP	9	0	
<b>STRESS: ESD-CHARGE DEVICE MODEL, 500V</b>							
CY7C0853V-BBC (7C08533A)	4133371	610136480L	TAIWN-G	COMP	9	0	
CY7C0853V-BBC (7C08533A)	4133371	610136480L	TAIWN-G	COMP	3	0	
<b>STRESS: THERMAL SHOCK, +125C/-55C</b>							
CY7C0853V-BBC (7C08533A)	4133371	610136480L	TAIWN-G	100	48	0	
CY7C0853V-BBC (7C08533A)	4133371	610136480L	TAIWN-G	200	48	0	
<b>STRESS: HIGH TEMPERATURE STORAGE, +150C</b>							
CY7C0853V-BBC (7C08533A)	4133371	610136480L	TAIWN-G	500	48	0	
CY7C0853V-BBC (7C08533A)	4133371	610136480L	TAIWN-G	1000	48	0	
<b>STRESS: PHYSICAL DIMENSIONS</b>							
CY7C0853V-BBC (7C08533A)	4133371	610136480L	TAIWN-G	COMP	5	0	
<b>STRESS: EXTERNAL VISUAL</b>							
CY7C0853V-BBC (7C08533A)	4133371	610136480L	TAIWN-G	COMP	15	0	
<b>STRESS: BALL SHEAR</b>							
CY7C0853V-BBC (7C08533A)	4223477	610234276LM	TAIWN-G	COMP	10	0	
CY7C0853V-BBC (7C08533A)	4223477	610237235M	TAIWN-G	COMP	10	0	



## Reliability Test Data

**QTP #: 023101**

<b>Device</b>	<b>Fab Lot #</b>	<b>Assy Lot #</b>	<b>Ass Loc</b>	<b>Duration</b>	<b>Samp</b>	<b>Rej</b>	<b>Failure Mechanism</b>
<b>STRESS: BOND PULL</b>							
CY7C0853V-BBC (7C08533A)	4223477	610234276LM	TAIWN-G	COMP	10	0	
CY7C0853V-BBC (7C08533A)	4223477	610237235M	TAIWN-G	COMP	10	0	
<b>STRESS: DIE SHEAR</b>							
CY7C0853V-BBC (7C08533A)	4223477	610234276LM	TAIWN-G	COMP	15	0	
CY7C0853V-BBC (7C08533A)	4223477	610237235M	TAIWN-G	COMP	15	0	
<b>STRESS: INTERNAL VISUAL</b>							
CY7C0853V-BBC (7C08533A)	4133371	610136480L	TAIWN-G	COMP	5	0	
<b>STRESS: X-RAY</b>							
CY7C0853V-BBC (7C08533A)	4133371	610136480L	TAIWN-G	COMP	15	0	
<b>STRESS: HI-ACCEL SATURATION TEST, 130C, 85%RH, 3.63V, PRE COND 192 HR 30C/60%RH, MSL3</b>							
CY7C0853V-BBC (7C08533A)	4133371	610136480L	TAIWN-G	128	47	0	
<b>STRESS: PRESSURE COOKER TEST, 121C, 100%RH, PRE COND 192 HR 30C/60%RH, MSL3</b>							
CY7C0853V-BBC (7C08533A)	4223476	610232577LM1	TAIWN-G	168	50	0	
CY7C0853V-BBC (7C08533A)	4223477	610234276LM	TAIWN-G	168	50	0	
CY7C0853V-BBC (7C08533A)	4223477	610237235M	TAIWN-G	168	49	0	
<b>STRESS: TC COND. C -65C TO 150C, PRECONDITION 192 HRS 30C/60%RH, MSL3</b>							
CY7C0853V-BBC (7C08533A)	4223477	610234276LM	TAIWN-G	300	47	0	
CY7C0853V-BBC (7C08533A)	4223476	610232577LM1	TAIWN-G	300	50	0	
CY7C0853V-BBC (7C08533A)	4223476	610232577LM1	TAIWN-G	500	50	0	
CY7C0853V-BBC (7C08533A)	4223476	610232577LM1	TAIWN-G	1000	50	0	
CY7C0853V-BBC (7C08533A)	4223477	610237235M	TAIWN-G	300	49	0	



## Reliability Test Data

**QTP #: 032406**

<b>Device</b>	<b>Fab Lot #</b>	<b>Assy Lot #</b>	<b>Ass Loc</b>	<b>Duration</b>	<b>Samp</b>	<b>Rej</b>	<b>Failure Mechanism</b>
<b>STRESS: ACOUSTIC, MSL3</b>							
CYD18S72V (7C08643A)	4314130	610328687	TAIWN-G	COMP	15	0	
CYD18S72V (7C08643A)	4232579	610328841	TAIWN-G	COMP	15	0	
CYD18S72V (7C08643A)	4232579	610328842	TAIWN-G	COMP	15	0	
<b>STRESS: BOND PULL</b>							
CYD18S72V (7C08643A)	4314130	610328687	TAIWN-G	COMP	3	0	
<b>STRESS: ESD-CHARGE DEVICE MODEL, 500V</b>							
CYD18S72V (7C08643A)	4314130	610328687	TAIWN-G	COMP	9	0	
<b>STRESS: ESD-HUMAN BODY CIRCUIT PER MIL STD 883, METHOD 3015, 2,200V</b>							
CYD18S72V (7C08643A)	4314130	610328687	TAIWN-G	COMP	9	0	
<b>STRESS: HIGH TEMP DYNAMIC OPERATING LIFE-EARLY FAILURE RATE, 125C, 2.3V, Vcc Max</b>							
CYD18S72V (7C08643A)	4314130	610328687	TAIWN-G	96	156	0	
CYD18S72V (7C08643A)	4319126	610336976	TAIWN-G	96	165	0	
<b>STRESS: HIGH TEMP DYNAMIC OPERATING LIFE-LATENT FAILURE RATE, 125C, 2.3V, Vcc Max</b>							
CYD18S72V (7C08643A)	4314130	610328687	TAIWN-G	168	155	0	
CYD18S72V (7C08643A)	4314130	610328687	TAIWN-G	216	88	0	
CYD18S72V (7C08643A)	4314130	610328687	TAIWN-G	500	82	0	
CYD18S72V (7C08643A)	4314130	610328687	TAIWN-G	1000	81	0	
<b>STRESS: HI-ACCEL SATURATION TEST, 130C, 85%RH, 2.3V, PRE COND 192 HR 30C/60%RH, MSL3</b>							
CYD18S72V (7C08643A)	4314130	610328687	TAIWN-G	128	46	0	
<b>STRESS: PRESSURE COOKER TEST, 121C, 100%RH, PRE COND 192 HR 30C/60%RH, MSL3</b>							
CYD18S72V (7C08643A)	4314130	610328687	TAIWN-G	168	48	0	
CYD18S72V (7C08643A)	4314130	610328687	TAIWN-G	288	48	0	
<b>STRESS: STATIC LATCH-UP TESTING (125C, 10.0V, +/-300mA)</b>							
CYD18S72V (7C08643A)	4314130	610328687	TAIWN-G	COMP	3	0	



## Reliability Test Data

**QTP #: 032406**

<b>Device</b>	<b>Fab Lot #</b>	<b>Assy Lot #</b>	<b>Ass Loc</b>	<b>Duration</b>	<b>Samp</b>	<b>Rej</b>	<b>Failure Mechanism</b>
<b>STRESS: TC COND. C -65C TO 150C, PRECONDITION 192 HRS 30C/60%RH, MSL3</b>							
CYD18S72V (7C08643A)	4314130	610328687	TAIWN-G	300	45	0	
CYD18S72V (7C08643A)	4314130	610328687	TAIWN-G	500	45	0	
CYD18S72V (7C08643A)	4314130	610328687	TAIWN-G	1000	45	0	
CYD18S72V (7C08643A)	4232579	610328842	TAIWN-G	300	48	0	
CYD18S72V (7C08643A)	4232579	610328842	TAIWN-G	500	48	0	
CYD18S72V (7C08643A)	4232579	610328842	TAIWN-G	1000	46	0	
CYD18S72V (7C08643A)	4319126	610336976	TAIWN-G	300	48	0	
CYD18S72V (7C08643A)	4319126	610336976	TAIWN-G	500	48	0	
CYD18S72V (7C08643A)	4319126	610336976	TAIWN-G	1000	44	0	





## Reliability Test Data

QTP #: 033202

Device	Fab Lot #	Assy Lot #	Ass Loc	Duration	Samp	Rej	Failure Mechanism
<b>STRESS: ACOUSTIC, MSL3</b>							
CY7C0853V (7C08533A)	4322656	610341182	TAIWN-G	COMP	15	0	
CY7C0853V (7C08533A)	4322656	610342497	TAIWN-G	COMP	15	0	
CY7C0853V (7C08533A)	4322656	610343147	TAIWN-G	COMP	15	0	
CYD18S72V (7C08643A)	4322656	610344846	TAIWN-G	COMP	15	0	
CY7C0851V (7C08513A)	4322656	610402214	TAIWN-G	COMP	15	0	
<b>STRESS: BALL SHEAR</b>							
CY7C0853V (7C08533A)	4322656	610341182	TAIWN-G	COMP	10	0	
CY7C0853V (7C08533A)	4322656	610342497	TAIWN-G	COMP	10	0	
CY7C0853V (7C08533A)	4322656	610341377	TAIWN-G	COMP	10	0	
CYD18S72V (7C08643A)	4322656	610344846	TAIWN-G	COMP	10	0	
CY7C0851V (7C08513A)	4322656	610402214	TAIWN-G	COMP	10	0	
<b>STRESS: BOND PULL</b>							
CY7C0853V (7C08533A)	4322656	610341182	TAIWN-G	COMP	10	0	
CY7C0853V (7C08533A)	4322656	610342497	TAIWN-G	COMP	10	0	
CY7C0853V (7C08533A)	4322656	610343147	TAIWN-G	COMP	10	0	
CYD18S72V (7C08643A)	4322656	610344846	TAIWN-G	COMP	10	0	
CY7C0851V (7C08513A)	4322656	610402214	TAIWN-G	COMP	10	0	
<b>STRESS: HIGH TEMP DYNAMIC OPERATING LIFE-EARLY FAILURE RATE, 125C, 2.3V, Vcc Max</b>							
CY7C0853V (7C08533A)	4322656	610343147	TAIWN-G	96	999	0	
<b>STRESS: INTERNAL VISUAL</b>							
CY7C0853V (7C08533A)	4322656	610342497	TAIWN-G	COMP	5	0	
<b>STRESS: PRESSURE COOKER TEST, 121C, 100%RH, PRE COND 192 HR 30C/60%RH, MSL3</b>							
CY7C0853V (7C08533A)	4322656	610342497	TAIWN-G	168	45	0	
CY7C0853V (7C08533A)	4322656	610343147	TAIWN-G	168	49	0	
CY7C0853V (7C08533A)	4322656	610341377	TAIWN-G	168	45	0	
CYD18S72V (7C08643A)	4322656	610344846	TAIWN-G	168	50	0	
CY7C0851V (7C08513A)	4322656	610402214	TAIWN-G	168	46	0	



## Reliability Test Data

**QTP #: 033202**

<b>Device</b>	<b>Fab Lot #</b>	<b>Assy Lot #</b>	<b>Ass Loc</b>	<b>Duration</b>	<b>Samp</b>	<b>Rej</b>	<b>Failure Mechanism</b>
<b>STRESS: TC COND. C -65C TO 150C, PRECONDITION 192 HRS 30C/60%RH, MSL3</b>							
CY7C0853V (7C08533A)	4322656	610341182	TAIWN-G	300	45	0	
CY7C0853V (7C08533A)	4322656	610341182	TAIWN-G	500	45	0	
CY7C0853V (7C08533A)	4322656	610341182	TAIWN-G	1000	44	0	
CY7C0853V (7C08533A)	4322656	610342497	TAIWN-G	300	45	0	
CY7C0853V (7C08533A)	4322656	610342497	TAIWN-G	500	45	0	
CY7C0853V (7C08533A)	4322656	610343147	TAIWN-G	300	50	0	
CY7C0853V (7C08533A)	4322656	610343147	TAIWN-G	500	50	0	
CY7C0853V (7C08533A)	4322656	610343147	TAIWN-G	1000	50	0	
CYD18S72V (7C08643A)	4322656	610344846	TAIWN-G	300	50	1	TOPSIDE CRACK
CYD18S72V (7C08643A)	4322656	610344846	TAIWN-G	500	49	0	
CYD18S72V (7C08643A)	4322656	610344846	TAIWN-G	1000	48	0	
CY7C0851V (7C08513A)	4322656	610402214	TAIWN-G	300	50	0	



## Reliability Test Data

**QTP #: 044104**

<b>Device</b>	<b>Fab Lot #</b>	<b>Assy Lot #</b>	<b>Ass Loc</b>	<b>Duration</b>	<b>Samp</b>	<b>Rej</b>	<b>Failure Mechanism</b>
<b>STRESS: ACOUSTIC, MSL3</b>							
CYD18S72V (7C08643A))	4350332	610429074	TAIWN-G	COMP	15	0	
CYD18S72V (7C08643A))	4350332	610429075	TAIWN-G	COMP	15	0	
<b>STRESS: TC COND. C -65C TO 150C, PRECONDITION 192 HRS 30C/60%RH, MSL3</b>							
CYD18S72V (7C08643A))	4350332	610429074	TAIWN-G	300	45	0	
CYD18S72V (7C08643A))	4350332	610429075	TAIWN-G	300	45	0	



## Reliability Test Data

**QTP #: 041505**

<b>Device</b>	<b>Fab Lot #</b>	<b>Assy Lot #</b>	<b>Ass Loc</b>	<b>Duration</b>	<b>Samp</b>	<b>Rej</b>	<b>Failure Mechanism</b>
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**STRESS: ACOUSTIC, MSL3**

CYD18S72V (7C08643A))	4350332	610422422	TAIWN-G	COMP	15	0	
CYD18S72V (7C08643A))	4350332	610422423	TAIWN-G	COMP	15	0	

**STRESS: TC COND. C -65C TO 150C, PRECONDITION 192 HRS 30C/60%RH, MSL3**

CYD18S72V (7C08643A))	4350332	610422422	TAIWN-G	300	49	0	
CYD18S72V (7C08643A))	4350332	610422423	TAIWN-G	500	49	0	
CYD18S72V (7C08643A))	4350332	610422423	TAIWN-G	300	50	0	
CYD18S72V (7C08643A))	4350332	610422423	TAIWN-G	500	50	0	

## Document History Page

Document Title: QTP # 032406 : SYNCHRONOUS DUAL PORT ,RAM FAMILY (2MEG, 4MEG, 9MEG & 18MEG), R7FTW-3R TECHNOLOGY , FAB4

Document Number: 001-87656

Rev.	ECN No.	Orig. of Change	Description of Change
**	4006403	ILZ	Initial Spec Release Qualification report published on Cypress.com is documented on memo LGQ-132 and not in spec format. Initiated spec for QTP 032406 and data from LGQ-132 was transferred to qualification report spec template
*A	4392035	ILZ	Sunset Review Updated front page to reflect new qualification report template per Spec 001-57716 Page 3 – Major package information table - Deleted Assembly process flow - obsolete spec Reliability tests performed per specification requirements Deleted revision of the following standards: Temperature Cycle, X-ray, Thermal Shock: Deleted Rev C, MIL-STD-883 ESD-CDM : Deleted Rev C, JESD22-C101 Ball Shear: Ball shear, JESD22-B!!6 Thermal Shock: Deleted JESD22-A106
*B	4394116	ILZ	Correction on Page 1 Added this information “ FOR ANY QUESTIONS ON THIS REPORT, PLEASE CONTACT <a href="mailto:reliability@cypress.com">reliability@cypress.com</a> or via a CYLINK CRM CASE”

Distribution: WEB

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