

Cypress Semiconductor Automotive Product Qualification Report

QTP# 061806 VERSION *C
September 2014

4 Meg MoBL SRAM Automotive Devices R95LD-3R, Fab 4	
CY62136EV18 MoBL2™ CY62137EV18 MoBL2™	2-Mbit (128K x 16) Static RAM
CY62136EV30 MoBL® CY62137EV30 MoBL®	2-Mbit (128K x 16) Static RAM
CY62138EV30 MoBL®	2-Mbit (256K x 8) Static RAM
CY62146EV18 MoBL2® CY62147EV18 MoBL2®	2-Mbit (256K x 16) Static RAM
CY62146EV30 MoBL® CY62147EV30 MoBL® CY621472E30 MoBL®	4-Mbit (256K x 16) Static RAM
CY62148E MoBL® CY62148EV30 MoBL®	4-Mbit (512K x 8) Static RAM

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

QTP Number	Description of Qualification Purpose	Date
071103	8 Meg MoBL SRAM Automotive Device Family & Technology (R95LD-3R) Qualification at Fab 4	Mar 07
061806	Qualify 4Meg MoBL Static RAM Automotive device and family on R95LD-3R Technology at Fab 4	Apr 07
084612	MoBL SRAM Hirel Technology Qual using 7C62167FC, R95LD-3R, 16Meg at Fab4	May 09
134512	Qualify polyimide mask to qualified Automotive 4 Meg MoBL SRAM, R95LD-3R Technology at Fab 4	Nov 13
134803	Qualify metal mask option die part (7A62142FC) Automotive on R95LD-3R Technology at Fab4	Jul 14



PRODUCT DESCRIPTION (for qualification)	
Qualification Purpose: :	Qualify 4Meg MoBL SRAM Automotive device and family, R95LD-3R Technology at Fab4
Automotive Marketing Part #:	CY62136/7EV18, CY62136/7/8EV30, CY62146/7EV18, CY62146/7/8EV40, CY62148E
Device Description:	3V Automotive
Cypress Division:	Cypress Semiconductor Corporation – Programmable Systems Division (PSD)

TECHNOLOGY/FAB PROCESS DESCRIPTION			
Number of Metal Layers:	2	Metal Composition:	Metal 1: 100Å Ti / 3200Å Al / 300Å TiW Metal 2: 150Å Ti / 8000Å Al / 300Å TiW
Passivation Type and Thickness:	1000Å Oxide TEOS / 9000Å Nitride		
Generic Process Technology/Design Rule (μ-drawn):	CMOS, Double Metal, 0.09μm		
Gate Oxide Material/Thickness (MOS):	28Å		
Name/Location of Die Fab (prime) Facility:	Cypress Semiconductor -- Bloomington, MN		
Die Fab Line ID/Wafer Process ID:	Fab4/R95LD-3R		

PACKAGE AVAILABILITY

PACKAGE	ASSEMBLY FACILITY SITE
32-Pin SOIC	CML-R
32-Pin STSOP I/TSOP II	CML-R, TAIWAN-G
36/48-Ball VFBGA	TAIWAN-G
44-Pin TSOP II	CML-R

MAJOR PACKAGE INFORMATION USED IN THIS QUALIFICATION	
Package Designation:	ZW44
Package Outline, Type, or Name:	44-Pin TSOPII
Mold Compound Name/Manufacturer:	Hitachi CEL9200CYRU
Mold Compound Flammability Rating:	V-O per UL94
Oxygen Rating Index:	28%
Substrate Material:	N/A
Lead Finish, Composition / Thickness:	NiPdAu
Die Backside Preparation Method/Metallization:	Backgrind
Die Separation Method:	Wafer Saw
Die Attach Supplier:	Dexter
Die Attach Material:	QMI509
Die Attach Method:	Die Attach Epoxy
Bond Diagram Designation:	10-06259
Wire Bond Method:	Thermosonic
Wire Material/Size:	Au. 1.0mil
Thermal Resistance Theta JA °C/W:	39.3 °C/W
Package Cross Section Yes/No:	N/A
Assembly Process Flow:	001-64160
Name/Location of Assembly (prime) facility:	CML-R
MSL Level	3
Reflow Profile	260C

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
High Temperature Operating Life Early Failure Rate	AEC-Q100-008 and JESD22-A108 Dynamic Operating Condition, Vcc Max = 1.85V, 125°C/150°C	P
High Temperature Operating Life Latent Failure Rate	JESD22-A108 Dynamic Operating Condition, Vcc Max = 1.85V, 125°C/150°C	P
High Accelerated Saturation Test (HAST)	JESD22-A110, 130°C, 5.5V, 85%RH Precondition: JESD22-A113 Moisture Sensitivity MSL 3 192 Hrs, 30C/60%RH + Reflow, 260°C+0, -5°C	P
Temperature Cycle	JESD22-A104, Condition C, -65°C to 150°C Precondition: JESD22-A113 Moisture Sensitivity MSL 3 192 Hrs, 30C/60%RH + Reflow, 260°C+0, -5°C	P
Pressure Cooker	JESD22-A102, 121°C, 100%RH, 15 Psig Precondition: JESD22-A113 Moisture Sensitivity MSL 3 192 Hrs, 30C/60%RH+ Reflow, 260°C+0, -5°C	P
Acoustics	J-STD-020 Precondition: JESD22-A113 Moisture Sensitivity MSL 3 192 Hrs., 30°C/60%RH + Reflow, 260°C+0, -5°C	P
Ball Shear	AEC-Q100-010	P
Bond Pull	Mil-Std 883, Method 2011	P
Constructional Analysis	Criteria: Meet external and internal characteristics of Cypress package	P
Dye Penetration Test	Test to determine the existence and extent of cracks, Criteria: No Package Crack	P
Electrostatic Discharge Human Body Model (ESD-HBM)	AEC-Q100-002	P
Electrostatic Discharge Charge Device Model (ESD-CDM)	AEC Q100-011	P
Electrical Distributions	AEC Q100-009	P
External Visual	JESD22-B100	P
High Temperature Storage	JESD22-A103, 150C	P
Physical Dimensions	JESD22B100 and B108 AEC Q100-009	P
Post Temp Cycle Bond Pull	Mil-Std 883, Method 2011	P
Solderability	JESD22-B102	P
Static Latch-up	AEC-Q100-004	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	10,438 Devices	0	N/A	N/A	0 PPM
High Temperature Operating Life ^{1,2} Long Term Failure Rate	225,568 DHRs	0	0.7	170	31 FIT**

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.

**Insufficient samples to calculate FIT Rate.

**Based on Automotive qual samples size not Commercial qual sample size.



Reliability Test Data

QTP #: 071103

<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: BALL SHEAR							
CY62157EV30 (7C62157F)	4622329	610650792	CML-R	COMP	5	0	
STRESS: BOND PULL							
CY62157EV30 (7C62157F)	4622329	610650792	CML-R	COMP	5	0	
STRESS: POST TEMP CYCLE BOND PULL							
CY62157EV30 (7C62157F)	4622329	610650792	CML-R	COMP	5	0	
STRESS: ESD-CHARGE DEVICE MODEL, 250V							
CY62157EV30 (7C62157F)	4622329	610650792	CML-R	COMP	3	0	
STRESS: ESD-CHARGE DEVICE MODEL, 500V							
CY62157EV30 (7C62157F)	4622329	610650792	CML-R	COMP	3	0	
STRESS: ESD-CHARGE DEVICE MODEL, 750V, Corner Pins Only							
CY62157EV30 (7C62157F)	4622329	610650792	CML-R	COMP	3	0	
STRESS: ESD-HUMAN BODY CIRCUIT, 500V							
CY62157EV30 (7C62157F)	4622329	610650792	CML-R	COMP	3	0	
STRESS: ESD-HUMAN BODY CIRCUIT, 1,000V							
CY62157EV30 (7C62157F)	4622329	610650792	CML-R	COMP	3	0	
STRESS: ESD-HUMAN BODY CIRCUIT, 1,500V							
CY62157EV30 (7C62157F)	4622329	610650792	CML-R	COMP	3	0	
STRESS: ESD-HUMAN BODY CIRCUIT, 2,000V							
CY62157EV30 (7C62157F)	4622329	610650792	CML-R	COMP	3	0	
STRESS: EXTERNAL VISUAL							
CY62157EV30 (7C62157F)	4622329	610650792	CML-R	COMP	340	0	
CY62157EV30 (7C62157F)	4641534	610700620/2/3	CML-R	COMP	4452	0	
CY62157EV30 (7C62157F)	4644874	610701731/2/3	CML-R	COMP	4292	0	
CY62157EV30 (7C62157F)	4638533	610702506/8/981	CML-R	COMP	4344	0	
CY62157EV30 (7C62157F)	4629071	610660071	CML-R	COMP	30	0	
CY62157EV30 (7C62157F)	4627156	610661704	CML-R	COMP	30	0	



Reliability Test Data

QTP #: 071103

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: ELECTRICAL DISTRIBUTIONS							
CY62157EV30 (7C62157F)	4622329	610650792	CML-R	COMP	30	0	
CY62157EV30 (7C62157F)	4629071	610660071	CML-R	COMP	30	0	
CY62157EV30 (7C62157F)	4627156	610661704	CML-R	COMP	30	0	
STRESS: PHYSICAL DIMENSIONS							
CY62157EV30 (7C62157F)	4622329	610650792	CML-R	COMP	10	0	
CY62157EV30 (7C62157F)	4641534	610700620	CML-R	COMP	10	0	
CY62157EV30 (7C62157F)	4644874	610701731	CML-R	COMP	10	0	
CY62157EV30 (7C62157F)	4638533	610702506	CML-R	COMP	10	0	
STRESS: HIGH TEMP DYNAMIC OPERATING LIFE-EARLY FAILURE RATE, 125C, 1.85V, Vcc Max							
CY62157EV30 (7C62157F)	4641534	610700620	CML-R	48	1410	0	
CY62157EV30 (7C62157F)	4641534	610700622	CML-R	48	1497	0	
CY62157EV30 (7C62157F)	4641534	610700623	CML-R	48	1535	0	
CY62157EV30 (7C62157F)	4644874	610701731	CML-R	48	1427	0	
CY62157EV30 (7C62157F)	4644874	610701732	CML-R	48	1469	0	
CY62157EV30 (7C62157F)	4644874	610701733	CML-R	48	1386	0	
CY62157EV30 (7C62157F)	4638533	610702506	CML-R	48	1490	0	
CY62157EV30 (7C62157F)	4638533	610702508	CML-R	48	1444	0	
CY62157EV30 (7C62157F)	4638533	610702981	CML-R	48	1400	0	
STRESS: HIGH TEMP DYNAMIC OPERATING LIFE-LATENT FAILURE RATE, 150C, 1.85V, Vcc Max							
CY62157EV30 (7C62157F)	4622329	610650792	CML-R	408	50	0	
STRESS: HIGH TEMPERATURE STORAGE, 150C, no bias							
CY62157EV30 (7C62157F)	4622329	610650792	CML-R	1000	50	0	
STRESS: HI-ACCEL SATURATION TEST, 130C, 85%RH, 5.5V, PRE COND 192 HR 30C/60%RH, MSL3							
CY62157EV30 (7C62157F)	4622329	610650792	CML-R	96	45	0	
CY62157EV30 (7C62157F)	4622329	610650792	CML-R	128	45	0	



Reliability Test Data

QTP #: 071103

<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: PRESSURE COOKER TEST, 121C, 100%RH, 15 Psig, PRE COND 192 HR 30C/60%RH, MSL3							
CY62157EV30 (7C62157F)	4622329	610650792	CML-R	96	50	0	
CY62157EV30 (7C62157F)	4622329	610650792	CML-R	168	48	0	
STRESS: TC COND. C -65C TO 150C, PRE COND 192 HRS 30C/60%RH, MSL3							
CY62157EV30 (7C62157F)	4622329	610650792	CML-R	500	55	0	
CY62157EV30 (7C62157F)	4622329	610650792	CML-R	1000	50	0	
STRESS: STATIC LATCH-UP TESTING, 125C, 8.27V, ±100mA							
CY62157EV30 (7C62157F)	4622329	610650792	CML-R	COMP	6	0	
STRESS: SOLDERABILITY							
CY62157EV30 (7C62157F)	4622329	610650792	CML-R	COMP	15	0	
CY62157EV30 (7C62157F)	4629071	610660070	CML-R	COMP	15	0	
CY62157EV30 (7C62157F)	4627156	610661706	CML-R	COMP	15	0	



Reliability Test Data

QTP #: 061806

<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, 200V							
CY62147EV30LL (7C62147F)	4618815	610649644	CML-R	COMP	3	0	
STRESS: ESD-CHARGE DEVICE MODEL, 250V							
CY62147EV30LL (7C62147F)	4618815	610649644	CML-R	COMP	3	0	
STRESS: ESD-CHARGE DEVICE MODEL, 500V							
CY62147EV30LL (7C62147F)	4618815	610649644	CML-R	COMP	3	0	
STRESS: ESD-CHARGE DEVICE MODEL, 750V, Corner Pins Only							
CY62147EV30LL (7C62147F)	4618815	610649644	CML-R	COMP	3	0	
STRESS: ESD-HUMAN BODY CIRCUIT, 500V							
CY62147EV30LL (7C62147F)	4618815	610649644	CML-R	COMP	3	0	
STRESS: ESD-HUMAN BODY CIRCUIT, 1,000V							
CY62147EV30LL (7C62147F)	4618815	610649644	CML-R	COMP	3	0	
STRESS: ESD-HUMAN BODY CIRCUIT, 1,500V							
CY62147EV30LL (7C62147F)	4618815	610649644	CML-R	COMP	3	0	
STRESS: ESD-HUMAN BODY CIRCUIT, 2,000V							
CY62147EV30LL (7C62147F)	4618815	610649644	CML-R	COMP	3	0	
STRESS: STATIC LATCH-UP TESTING, 125C, 7.37V, ±100mA							
CY62147EV30LL (7C62147F)	4618815	610646970	CML-R	COMP	6	0	
STRESS: STATIC LATCH-UP TESTING, 125C, 8.2V, ±100mA							
CY62148EV30LL (7C62148F)	4626753	610700518	TAIWAN-T	COMP	6	0	
STRESS: ELECTRICAL DISTRIBUTIONS							
CY62147EV30LL (7C62147F)	4618815	610649644	CML-R	COMP	30	0	
CY62147EV30LL (7C62147F)	4615747	610649639	CML-R	COMP	30	0	
CY62147EV30LL (7C62147F)	4616092	610658569	CML-R	COMP	30	0	
STRESS: HIGH TEMP DYNAMIC OPERATING LIFE-EARLY FAILURE RATE, 125C, 1.85V, Vcc Max							
CY62147EV30LL (7C62147F)	4638211	610704264	CML-R	48	2619	0	
CY62147EV30LL (7C62147F)	4638211	610704265	CML-R	48	2644	0	
CY62147EV30LL (7C62147F)	4638211	610704266	CML-R	48	2565	0	
CY62147EV30LL (7C62147F)	4638211	610710367	CML-R	48	2520	0	



Reliability Test Data

QTP #: 084612

<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: ACOUSTICS							
CY62177EV30LL (7A62167F)	4838611	610854900	TAIWAN-T	COMP	22	0	
CY62177EV30LL (7A62167F)	4836421	610854901	TAIWAN-T	COMP	22	0	
CY62177EV30LL (7A62167F)	4836814	610854902	TAIWAN-T	COMP	22	0	
STRESS: BALL SHEAR							
CY62177EV30LL (7A62167F)	4838611	610854900	TAIWAN-T	COMP	30	0	
STRESS: BOND PULL							
CY62177EV30LL (7A62167F)	4838611	610854900	TAIWAN-T	COMP	30	0	
STRESS: CONSTRUCTIONAL ANALYSIS							
CY62177EV30LL (7A62167F)	4838611	610854900	TAIWAN-T	COMP	5	0	
STRESS: DYE PENETRATION TEST							
CY62177EV30LL (7A62167F)	4838611	610854900	TAIWAN-T	COMP	15	0	
CY62177EV30LL (7A62167F)	4836421	610854901	TAIWAN-T	COMP	15	0	
CY62177EV30LL (7A62167F)	4836814	610854902	TAIWAN-T	COMP	15	0	
STRESS: POST TEMP CYCLE BOND PULL							
CY62177EV30LL (7A62167F)	4838611	610854900	TAIWAN-T	COMP	5	0	
STRESS: ESD-CHARGE DEVICE MODEL, 500 V							
CY62177EV30LL (7A62167F)	4838611	610854900	TAIWAN-T	COMP	3	0	
STRESS: ESD-CHARGE DEVICE MODEL, 1000V							
CY62177EV30LL (7A62167F)	4838611	610854900	TAIWAN-T	COMP	3	0	
STRESS: ESD-CHARGE DEVICE MODEL, 1250V							
CY62177EV30LL (7A62167F)	4838611	610854900	TAIWAN-T	COMP	3	0	
STRESS: ESD-CHARGE DEVICE MODEL, 750V, Corner Pins Only							
CY62177EV30LL (7A62167F)	4838611	610854900	TAIWAN-T	COMP	3	0	
STRESS: ESD-HUMAN BODY CIRCUIT, 500V							
CY62177EV30LL (7A62167F)	4838611	610854900	TAIWAN-T	COMP	3	0	
STRESS: ESD-HUMAN BODY CIRCUIT, 1,000V							
CY62177EV30LL (7A62167F)	4838611	610854900	TAIWAN-T	COMP	3	0	
STRESS: ESD-HUMAN BODY CIRCUIT, 1,500V							
CY62177EV30LL (7A62167F)	4838611	610854900	TAIWAN-T	COMP	3	0	

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Reliability Test Data

QTP #: 084612

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: ESD-HUMAN BODY CIRCUIT, 2,000V							
CY62177EV30LL (7A62167F)	4838611	610854900	TAIWAN-T	COMP	3	0	
STRESS: ELECTRICAL DISTRIBUTIONS							
CY62177EV30LL (7A62167F)	4838611	610854900	TAIWAN-T	COMP	30	0	
CY62177EV30LL (7A62167F)	4836421	610854901	TAIWAN-T	COMP	30	0	
CY62177EV30LL (7A62167F)	4836814	610854902	TAIWAN-T	COMP	30	0	
STRESS: PHYSICAL DIMENSIONS							
CY62177EV30LL (7A62167F)	4838611	610854900	TAIWAN-T	COMP	10	0	
CY62177EV30LL (7A62167F)	4836421	610854901	TAIWAN-T	COMP	10	0	
CY62177EV30LL (7A62167F)	4836814	610854902	TAIWAN-T	COMP	10	0	
STRESS: HIGH TEMP DYNAMIC OPERATING LIFE-EARLY FAILURE RATE, 150C, 1.85V, Vcc Max							
CY62177EV30LL (7A62167F)	4838611	610854900	TAIWAN-T	24	4249	0	
CY62177EV30LL (7A62167F)	4836421	610854901	TAIWAN-T	24	3730	0	
CY62177EV30LL (7A62167F)	4836814	610854902	TAIWAN-T	24	3295	0	
STRESS: HIGH TEMP DYNAMIC OPERATING LIFE-LATENT FAILURE RATE, 150C, 1.85V, Vcc Max							
CY62177EV30LL (7A62167F)	4838611	610854900	TAIWAN-T	432	100	0	
CY62177EV30LL (7A62167F)	4836421	610854901	TAIWAN-T	432	99	0	
CY62177EV30LL (7A62167F)	4836814	610854902	TAIWAN-T	432	100	0	
STRESS: HIGH TEMPERATURE STORAGE, 150C, no bias							
CY62177EV30LL (7A62167F)	4838611	610854900	TAIWAN-T	1000	80	0	
STRESS: HI-ACCEL SATURATION TEST, 130C, 85%RH, 3.6V, PRE COND 192 HR 30C/60%RH, MSL3							
CY62177EV30LL (7A62167F)	4838611	610854900	TAIWAN-T	96	79	0	
CY62177EV30LL (7A62167F)	4836421	610854901	TAIWAN-T	96	79	0	
CY62177EV30LL (7A62167F)	4836814	610854902	TAIWAN-T	96	80	0	



Reliability Test Data

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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: PRESSURE COOKER TEST, 121C, 100%RH, 15 Psig, PRE COND 192 HR 30C/60%RH, MSL3							
CY62177EV30LL (7A62167F)	4838611	610854900	TAIWAN-T	96	80	0	
CY62177EV30LL (7A62167F)	4838611	610854900	TAIWAN-T	168	80	0	
CY62177EV30LL (7A62167F)	4836421	610854901	TAIWAN-T	96	80	0	
CY62177EV30LL (7A62167F)	4836421	610854901	TAIWAN-T	168	80	0	
CY62177EV30LL (7A62167F)	4836814	610854902	TAIWAN-T	96	80	0	
CY62177EV30LL (7A62167F)	4836814	610854902	TAIWAN-T	168	80	0	
STRESS: TC COND. C -65C TO 150C, PRE COND 192 HRS 30C/60%RH, MSL3							
CY62177EV30LL (7A62167F)	4838611	610854900	TAIWAN-T	500	85	0	
CY62177EV30LL (7A62167F)	4838611	610854900	TAIWAN-T	1000	79	0	
CY62177EV30LL (7A62167F)	4836421	610854901	TAIWAN-T	500	85	0	
CY62177EV30LL (7A62167F)	4836421	610854901	TAIWAN-T	1000	85	0	
CY62177EV30LL (7A62167F)	4836814	610854902	TAIWAN-T	500	85	0	
CY62177EV30LL (7A62167F)	4836814	610854902	TAIWAN-T	1000	85	0	
STRESS: STATIC LATCH-UP TESTING, 125C, ±200mA							
CY62177EV30LL (7A62167F)	4838611	610854900	TAIWAN-T	COMP	6	0	
STRESS: SOLDERABILITY							
CY62177EV30LL (7A62167F)	4838611	610854900	TAIWAN-T	COMP	15	0	
CY62177EV30LL (7A62167F)	4836421	610854901	TAIWAN-T	COMP	15	0	
CY62177EV30LL (7A62167F)	4836814	610854902	TAIWAN-T	COMP	15	0	



Reliability Test Data QTP #: 134512

<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: HIGH TEMP DYNAMIC OPERATING LIFE-LATENT FAILURE RATE, 125C, 1.85V, Vcc Max (Core)							
CY62157EV30LL (7C62157F)	4229219	611238363	CML-RA	168	76	0	
CY62157EV30LL (7C62157F)	4229219	611238363	CML-RA	1000	76	0	
STRESS: TC COND. C -65C TO 150C, PRE COND 192 HRS 30C/60%RH, MSL3							
CY62157EV30LL (7C62157F)	4229219	611238363	CML-RA	500	77	0	
CY62157EV30LL (7C62157F)	4229219	611238363	CML-RA	1000	76	0	
STRESS: PRESSURE COOKER TEST, 121C, 100%RH, 15 Psig, PRE COND 192 HR 30C/60%RH, MSL3							
CY62157EV30LL (7C62157F)	4229219	611238363	CML-RA	96	76	0	
CY62157EV30LL (7C62157F)	4229219	611238363	CML-RA	168	65	0	
STRESS: HI-ACCEL SATURATION TEST, 110C, 85%RH, 1.85V, PRE COND 192 HR 30C/60%RH, MSL3							
CY62157EV30LL (7C62157F)	4229219	611238363	CML-RA	128	77	0	
CY62157EV30LL (7C62157F)	4229219	611238363	CML-RA	264	77	0	
STRESS: HIGH TEMPERATURE STORAGE							
CY62157EV30LL (7C62157F)	4229219	611238363	CML-RA	1000	77	0	
STRESS: INTERNAL VISUAL							
CY62157EV30LL (7C62157F)	4229219	611238363	CML-RA	COMP	5	0	
STRESS: SORT YIELD							
7C62155FC	VARIOUS	NA	NA	COMP	EQUIVALENT		
STRESS: E-TEST YIELD							
7C62155FC	VARIOUS	NA	NA	COMP	EQUIVALENT		



Reliability Test Data QTP #: 134803

<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-HUMAN BODY CIRCUIT, 2,000V							
CY621472E30LL (7A621473FC)	4344239	611415236	CHINA - JT	COMP	3	0	
STRESS: STATIC LATCH-UP TESTING, 125C, ±140mA							
CY621472E30LL (7A621473FC)	4344239	611415236	CHINA - JT	COMP	3	0	
STRESS: SORT YIELD							
7A621473FC	4344239	NA	NA	COMP	EQUIVALENT		
STRESS: E-TEST YIELD							
7A621473FC	4344239	NA	NA	COMP	EQUIVALENT		



Document History Page

Document Title: QTP# 061806: AUTOMOTIVE 4 MEG MOBL SRAM DEVICES, R95LD-3R, FAB 4
Document Number: 001-59339

Rev.	ECN No.	Orig. of Change	Description of Change
**	2875207	NSR	Initial Spec Release Added data of QTP084612. Updated FIT rate and device hours data in Reliability Failure Rate Summary. Remove CML-RA to Assembly Facility Site of 36/48-Ball VFBGA package (Ref. Memo LGQ-719, 061806 Rev. 1.0)
*A	3912663	NSR	Removed "Version 2.0" in QTP# 061806 title page; Updated Reliability Tests Performed Table: -Removed referenced Cypress Spec# of Acoustic, Constructional Analysis and Dye Penetration Test and replaced with referenced industry standards/criteria. -Removed "3IR" in test condition of reflow for HAST, TCT and PCT.
*B	4185762	JYF	Deleted obsolete spec 11-20047 in Major Package Information table and replaced with 001-64160; Template alignment & addition of polyimide qualification data.
*C	4484039	HSTO	Align qualification report based on the new template in the front page Add metal mask qualification data

Distribution: WEB

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