

Please note that Cypress is an Infineon Technologies Company.

The document following this cover page is marked as “Cypress” document as this is the company that originally developed the product. Please note that Infineon will continue to offer the product to new and existing customers as part of the Infineon product portfolio.

Continuity of document content

The fact that Infineon offers the following product as part of the Infineon product portfolio does not lead to any changes to this document. Future revisions will occur when appropriate, and any changes will be set out on the document history page.

Continuity of ordering part numbers

Infineon continues to support existing part numbers. Please continue to use the ordering part numbers listed in the datasheet for ordering.

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
reliability@cypress.com or via a CYLINK CRM CASE

Prepared By:
Honesto Sintos
Reliability Engineer

Reviewed By:
Rene Rodgers
Reliability Manager

Approved By:
Richard Oshiro
Reliability Director

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 TSOP 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

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

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

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

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

Company Confidential

A printed copy of this document is considered uncontrolled. Refer to online copy for latest revision.

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

QTP #: 084612

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

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

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

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

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

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

Posting: None