

Cypress Semiconductor Package Qualification Report

**QTP# 082606 VERSION 1.0
October 2009**

48-Ball VFBGA

(6 x 8 x 1.0mm)

MSL3, 260C Solder Reflow

CML-RA

CYPRESS TECHNICAL CONTACT FOR QUALIFICATION DATA:

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PACKAGE QUALIFICATION HISTORY

Qual Report	Description of Qualification Purpose	Date Comp
042801	Qualify all VFBGA (7mils Wafer Thickness) Packages at MSL3, 260C Reflow assembled in CML-RA	Dec 04
064702	Qualify 56/100-Ball VFBGA packages using KE-G2270M Mold Compound, QMI 506 Epoxy, BT-Kinsus Substrate assembled at CML-RA	Dec. 06
082606	SUBZ48ZB Kinsus Substrate Qualification for 48 FBGA (6x8x1.0mm) Using Device 7C62167F, KE-G2270M Mold compound, QMI-506 at CML,RA	Oct. 09

MAJOR PACKAGE INFORMATION USED IN THIS QUALIFICATION	
Package Designation:	BZ48
Package Outline, Type, or Name:	48-Ball VFBGA (6 x 8 x 1.0mm) Very thin and Fine Pitch Ball Grid Array
Mold Compound Name/Manufacturer:	KE-G2270M
Mold Compound Flammability Rating:	V-O per UL94
Oxygen Rating Index:	>28%
Substrate Material:	BT Resin
Lead Finish, Composition / Thickness:	Sn/Ag/Cu
Die Backside Preparation Method/Metallization:	Backgrinding
Die Separation Method:	100%
Die Attach Supplier:	Dexter
Die Attach Material:	QMI506
Die Attach Method:	Silver Epoxy
Bond Diagram Designation:	10-05437
Wire Bond Method:	Thermosonic
Wire Material/Size:	Au. 0.8 mil
Thermal Resistance Theta JA °C/W:	74.8 °C/W
Package Cross Section Yes/No:	N/A
Assembly Process Flow:	11-21101
Name/Location of Assembly (prime) facility:	CML-RA
MSL Level	3
Reflow Profile	260C

ELECTRICAL TEST / FINISH DESCRIPTION	
Test Location:	CML-R, CML-RA, Chipmos-GO

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
Acoustic Microscopy Test	Cypress Spec 25-00104	P
Ball Shear	Cypress Spec 24-00018	P
Bond Pull	Cypress Spec. 12-00292	P
Constructional Analysis	Cypress Spec. 25-20035	P
Cross Section	Cypress Spec. 12-00292	P
Internal Visual	Cypress Spec. 12-00292	P
Dye Penetration	Cypress Spec. 25-00046	P
External Visual	Cypress Spec. 25-00038	P
High Accelerated Saturation	130°C, 3.6V, 85%RH Precondition: JESD22 Moisture Sensitivity MSL3 192 Hrs., 30°C/60%RH+3IR-Reflow, 260°C +0, -5°C	P
Pressure Cooker	121C, 100%RH, 15 Psig Precondition: JESD22 Moisture Sensitivity MSL3 192 Hrs., 30°C/60%RH+3IR-Reflow, 260°C +0, -5°C	P
Temperature Cycle	JEDEC22, Condition C, -65°C to 150°C Precondition: JESD22 Moisture Sensitivity MSL3 192 Hrs., 30°C/60%RH+3IR-Reflow, 260°C +0, -5°C	P
Solderability	Cypress Spec 25-00018	P

Reliability Test Data

QTP #: 042801

<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: ACOUSTIC, MSL3							
CY62157DV18LL (7R62357D)	4338727	610441999	CML-RA	COMP	15	0	
CY62157DV18LL (7R62357D)	4338727	610442000	CML-RA	COMP	15	0	
CY62157DV18LL (7R62357D)	4338727	610442001	CML-RA	COMP	15	0	
STRESS: BALL SHEAR							
CY62157DV18LL (7R62357D)	4338727	610441999	CML-RA	COMP	10	0	
CY62157DV18LL (7R62357D)	4338727	610442000	CML-RA	COMP	10	0	
STRESS: EXTERNAL VISUAL							
CY62157DV18LL (7R62357D)	4338727	610441999	CML-RA	COMP	15	0	
CY62157DV18LL (7R62357D)	4338727	610442000	CML-RA	COMP	15	0	
STRESS: HI-ACCEL SATURATION TEST (130C, 85%RH, 3.6V), PRE COND 192 HR 30C/60%RH, MSL3							
CY62157DV18LL (7R62357D)	4338727	610441999	CML-RA	128	45	0	
STRESS: PRESSURE COOKER TEST (121C, 100%RH), 15 Psig, PRE COND 192 HR 30C/60%RH, MSL3							
CY62157DV18LL (7R62357D)	4338727	610441999	CML-RA	168	45	0	
STRESS: TC COND. C -65C TO 150C, PRE COND 192 HRS 30C/60%RH, MSL3							
CY62157DV18LL (7R62357D)	4338727	610441999	CML-RA	300	45	0	
CY62157DV18LL (7R62357D)	4338727	610441999	CML-RA	500	45	0	
CY62157DV18LL (7R62357D)	4338727	610441999	CML-RA	1000	44	0	
CY62157DV18LL (7R62357D)	4338727	610442000	CML-RA	300	48	0	
CY62157DV18LL (7R62357D)	4338727	610442000	CML-RA	500	48	0	
CY62157DV18LL (7R62357D)	4338727	610442000	CML-RA	300	47	0	
CY62157DV18LL (7R62357D)	4338727	610442001	CML-RA	300	50	0	
CY62157DV18LL (7R62357D)	4338727	610442001	CML-RA	500	50	0	
CY62157DV18LL (7R62357D)	4338727	610442001	CML-RA	1000	49	0	

Reliability Test Data

QTP #: 064702

<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: CONSTRUCTIONAL ANALYSIS							
CYWB0124AB (7C07100A)	4636435	610664727M	CML-RA	COMP	5	0	
CYWB0124AB (7C07100A)	4636435	610664727M1	CML-RA	COMP	5	0	
CYWB0124AB (7C07100A)	4636435	610664727M2	CML-RA	COMP	5	0	
CY7C68053 (7C68053A)	4615637		CML-RA	COMP	5	0	
STRESS: DYE PENETRATION							
CYWB0124AB (7C07100A)	4636435	610664727M	CML-RA	COMP	1000	0	
CYWB0124AB (7C07100A)	4636435	610664727M1	CML-RA	COMP	1000	0	
CYWB0124AB (7C07100A)	4636435	610664727M2	CML-RA	COMP	1000	0	
CY7C68053 (7C68053A)	4615637		CML-RA	COMP	1000	0	
STRESS: SOLDERABILITY							
CYWB0124AB (7C07100A)	4636435	610664727M	CML-RA	COMP	5	0	
CYWB0124AB (7C07100A)	4636435	610664727M1	CML-RA	COMP	5	0	
CYWB0124AB (7C07100A)	4636435	610664727M2	CML-RA	COMP	5	0	
CY7C68053 (7C68053A)	4615637		CML-RA	COMP	5	0	

Reliability Test Data

QTP #: 082606

<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: ACOUSTIC, MSL3							
CY62167EV30LL (7C62167FC)	4915781	610922177	CML-RA	COMP	192	0	
CY62167EV30LL (7C62167FC)	4915781	610922178	CML-RA	COMP	192	0	
STRESS: BOND PULL							
CY62167EV30LL (7C62167FC)	4915781	610922177	CML-RA	COMP	25	0	
STRESS: CONSTRUCTIONAL ANALYSIS							
CY62167EV30LL (7C62167FC)	4915781	610922177	CML-RA	COMP	5	0	
CY62167EV30LL (7C62167FC)	4915781	610922178	CML-RA	COMP	5	0	
STRESS: CROSS SECTION							
CY62167EV30LL (7C62167FC)	4915781	610922177	CML-RA	COMP	5	0	
CY62167EV30LL (7C62167FC)	4915781	610922178	CML-RA	COMP	5	0	
STRESS: EXTERNAL VISUAL							
CY62167EV30LL (7C62167FC)	4915781	610922177	CML-RA	COMP	1245	0	
CY62167EV30LL (7C62167FC)	4915781	610922178	CML-RA	COMP	1245	0	
STRESS: INTERNAL VISUAL							
CY62167EV30LL (7C62167FC)	4915781	610922177	CML-RA	COMP	5	0	
CY62167EV30LL (7C62167FC)	4915781	610922178	CML-RA	COMP	5	0	
STRESS: PHYSICAL DIMENSION							
CY62167EV30LL (7C62167FC)	4915781	610922177	CML-RA	COMP	25	0	
CY62167EV30LL (7C62167FC)	4915781	610922178	CML-RA	COMP	25	0	
STRESS: SOLDERABILITY							
CY62167EV30LL (7C62167FC)	4915781	610922177	CML-RA	COMP	5	0	
CY62167EV30LL (7C62167FC)	4915781	610922178	CML-RA	COMP	5	0	
STRESS: PHYSICAL DIMENSION							
CY62167EV30LL (7C62167FC)	4915781	610922177	CML-RA	COMP	5	0	
CY62167EV30LL (7C62167FC)	4915781	610922178	CML-RA	COMP	5	0	