

Cypress Semiconductor Package Qualification Report

**QTP#042801 VERSION*A
September 2014**

**48/56/100-Ball VFBGA
(6 x 8 x 1.0mm), (5 x 5 x 1.0mm), (6 x 6 x 1.0mm)
MSL3, 260C Solder Reflow
Cypress Philippines (CML-RA)**

**FOR ANY QUESTIONS ON THIS REPORT, PLEASE CONTACT
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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

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
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
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	J-STD-020	P
Ball Shear	JESD22-B116A	P
Constructional Analysis	Meet external and internal characteristics of Cypress package	P
Dye Penetration	Test to determine the existence and extent of cracks	P
External Visual	MIL-PRF-38535, MILSTD-883, METHOD 2009	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	J-STD-002, JESD22-B102	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	

Document History Page

Document Title: QTP#042801: 48/56/100-Ball VFBGA (6 x 8 x 1.0mm), (5 x 5 x 1.0mm), (6 x 6 x 1.0mm) MSL3, 260C
Solder Reflow Cypress Philippines (CML-RA)
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Rev.	ECN No.	Orig. of Change	Description of Change
**	4141008	HSTO	Initial Spec Release Initiate report as per memo HGA-170.
*A	4516853	HSTO	Align qualification report based on the new template in the front page

Distribution: WEB

Posting: None