

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 Package Qualification Report

QTP# 150414 VERSION
April 2016**

**48 VFBGA (6x8x1.0mm)
SAC 105 Solder Ball Finish, CuPd Wire
MSL3, 260°C Reflow
CML-RA**

FOR ANY QUESTIONS ON THIS REPORT, PLEASE CONTACT
reliability@cypress.com or via a CYLINK CRM CASE

Prepared By:
Josephine Pineda (JYF)
Sr. Reliability Engineer

Reviewed By:
Rene Rodgers (RT)
Sr. MTS Reliability Engineer

Approved By:
Don Darling (DCDA)
Reliability Director

PACKAGE QUALIFICATION HISTORY

QTP Number	Description of Qualification Purpose	Date
140204	Qualification of 48 VFBGA (6x8x1.0 mm) at CML-RA using GR9810-1PLA Mold Compound, QMI-506 Die Attach Epoxy, SAC-105 Solder Ball Finish, 0.8 mil CuPd Wire, with MSL 3, 260°C Reflow Temperature	March 2014
150414	Qualification of 48 VFBGA (6x8x1.0 mm) at CML-RA using GR9810-1PLA Mold Compound, QMI-506 Die Attach Epoxy, SAC-105 Solder Ball Finish, 0.8 mil CuPd Wire, with MSL 3, 260°C Reflow Temperature	June 2015

MAJOR PACKAGE INFORMATION USED IN THIS QUALIFICATION	
Package Designation:	BZ48A
Package Outline, Type, or Name:	VFBGA (Very Fine Ball Grid Array)
Mold Compound Name/Manufacturer:	GR9810-1PLA/Henkel
Mold Compound Flammability Rating:	V-0 / UL94
Oxygen Rating Index:	54 (Typical) / 28 (Min. value)
Substrate Material:	BT resin
Lead Finish, Composition / Thickness:	SAC105
Die Backside Preparation Method/Metallization:	Backgrind
Die Separation Method:	Saw
Die Attach Supplier:	Henkel
Die Attach Material:	QMI 506
Bond Diagram Designation:	001-95770
Wire Bond Method:	Thermosonic
Wire Material/Size:	CuPd, 0.8 mil
Thermal Resistance Theta JA °C/W:	31.35°C/W
Package Cross Section Yes/No:	Yes
Assembly Process Flow:	001-80721
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	J-STD-020 Precondition: JESD22 Moisture Sensitivity Level (192 Hrs., 30°C, 60% RH, 260°C Reflow)	P
Ball Shear	JESD22-B116	P
Bond Pull	MIL-STD-883 – Method 2011	P
Constructional Analysis	Criteria: Meet external and internal characteristics of Cypress package	P
Die Shear	MIL-STD-883, Method 2019 Per die size: <ul style="list-style-type: none"> • <3000 sq. mils = 1.2 kgf • 30001-5000 sq. mils = 1.2 kgf • >5001 sq. mils = 1.2 kgf 	P
Dye Penetrant Test	Test to determine the existence and extent of cracks, Criteria: No Package Crack	P
Electrostatic Discharge Charge Device Model (ESD-CDM)	500V/1,000V/1,250V JESD22-C101	P
Final Visual	JESD22-B101	P
High Accelerated Saturation Test (HAST)	JEDEC STD 22-A110: 110°C, 85%RH, 3.65V Precondition: JESD22 Moisture Sensitivity Level (192 Hrs., 30°C, 60% RH, 260°C Reflow)	P
High Temperature Storage	JESD22-A103:150°C No bias	P
Internal Visual	MIL-STD-883-2014	P
Physical Dimension	MIL-STD-1835, JESD22-B100	P
Pressure Cooker	JESD22-A102: 121°C, 100%RH, 15 PSIG Precondition: JESD22 Moisture Sensitivity Level (192 Hrs., 30°C, 60% RH, 260°C Reflow)	P
Solder Ball Shear	JESD22-B117	P
Temperature Cycle	MIL-STD-883, Method 1010, Condition C, -65°C to 150°C Precondition: JESD22 Moisture Sensitivity Level (192 Hrs., 30°C, 60% RH, 260°C Reflow)	P
X-Ray	MIL-STD-883 - 2012	P



Reliability Test Data

QTP #: 140204

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

STRESS: ACOUSTIC, MSL3

CY7C1061G30 (7CC171061A)	9313001	611348182	CML-RA	COMP	170	0	
CY7C1061G30 (7CC171061A)	9313001	611348183	CML-RA	COMP	15	0	
CY7C1061G30 (7CC171061A)	9313001	611348184	CML-RA	COMP	15	0	

STRESS: BALL SHEAR

CY7C1061G30 (7CC171061A)	9313001	611348182	CML-RA	COMP	30	0	
CY7C1061G30 (7CC171061A)	9313001	611348183	CML-RA	COMP	30	0	
CY7C1061G30 (7CC171061A)	9313001	611348184	CML-RA	COMP	30	0	

STRESS: BOND PULL

CY7C1061G30 (7CC171061A)	9313001	611348182	CML-RA	COMP	30	0	
CY7C1061G30 (7CC171061A)	9313001	611348183	CML-RA	COMP	30	0	
CY7C1061G30 (7CC171061A)	9313001	611348184	CML-RA	COMP	30	0	

STRESS: CONSTRUCTIONAL ANALYSIS

CY7C1061G30 (7CC171061A)	9313001	611348182	CML-RA	COMP	5	0	
--------------------------	---------	-----------	--------	------	---	---	--

STRESS: DIE SHEAR

CY7C1061G30 (7CC171061A)	9313001	611348182	CML-RA	COMP	15	0	
CY7C1061G30 (7CC171061A)	9313001	611348183	CML-RA	COMP	15	0	
CY7C1061G30 (7CC171061A)	9313001	611348184	CML-RA	COMP	15	0	

STRESS: DYE PENETRANT TEST

CY7C1061G30 (7CC171061A)	9313001	611348182	CML-RA	COMP	15	0	
CY7C1061G30 (7CC171061A)	9313001	611348183	CML-RA	COMP	15	0	
CY7C1061G30 (7CC171061A)	9313001	611348184	CML-RA	COMP	15	0	

STRESS: ESD-CHARGE DEVICE MODEL

CY7C1061G30 (7CC171061A)	9313001	611348182	CML-RA	500	9	0	
CY7C1061G30 (7CC171061A)	9313001	611348182	CML-RA	1000	3	0	
CY7C1061G30 (7CC171061A)	9313001	611348182	CML-RA	1250	3	0	

STRESS: FINAL VISUAL

CY7C1061G30 (7CC171061A)	9313001	611348182	CML-RA	COMP	834	0	
CY7C1061G30 (7CC171061A)	9313001	611348183	CML-RA	COMP	805	0	
CY7C1061G30 (7CC171061A)	9313001	611348184	CML-RA	COMP	528	0	

Company Confidential

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



Reliability Test Data

QTP #: 140204

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

STRESS: HI-ACCEL SATURATION TEST, 110C, 85%RH, 3.65V, PRE COND 192 HR 30C/60%RH, MSL3

CY7C1061G30 (7CC171061A)	9313001	611348182	CML-RA	264	30	0	
--------------------------	---------	-----------	--------	-----	----	---	--

STRESS: HIGH TEMPERATURE STORAGE, PLASTIC, 150C

CY7C1061G30 (7CC171061A)	9313001	611333088	CML-RA	500	79	0	
--------------------------	---------	-----------	--------	-----	----	---	--

CY7C1061G30 (7CC171061A)	9313001	611333088	CML-RA	1000	79	0	
--------------------------	---------	-----------	--------	------	----	---	--

STRESS: INTERNAL VISUAL

CY7C1061G30 (7CC171061A)	9313001	611348182	CML-RA	COMP	5	0	
--------------------------	---------	-----------	--------	------	---	---	--

STRESS: PHYSICAL DIMENSION

CY7C1061G30 (7CC171061A)	9313001	611348182	CML-RA	COMP	30	0	
--------------------------	---------	-----------	--------	------	----	---	--

CY7C1061G30 (7CC171061A)	9313001	611348183	CML-RA	COMP	30	0	
--------------------------	---------	-----------	--------	------	----	---	--

CY7C1061G30 (7CC171061A)	9313001	611348184	CML-RA	COMP	30	0	
--------------------------	---------	-----------	--------	------	----	---	--

STRESS: PRESSURE COOKER TEST, 121C, 100%RH, 15 Psig, PRE COND 192 HR 30C/60%RH, MSL3

CY7C1061G30 (7CC171061A)	9313001	611333088	CML-RA	168	78	0	
--------------------------	---------	-----------	--------	-----	----	---	--

CY7C1061G30 (7CC171061A)	9313001	611333088	CML-RA	288	78	0	
--------------------------	---------	-----------	--------	-----	----	---	--

STRESS: SOLDER BALL SHEAR

CY7C1061G30 (7CC171061A)	9313001	611348182	CML-RA	COMP	150	0	
--------------------------	---------	-----------	--------	------	-----	---	--

CY7C1061G30 (7CC171061A)	9313001	611348183	CML-RA	COMP	150	0	
--------------------------	---------	-----------	--------	------	-----	---	--

CY7C1061G30 (7CC171061A)	9313001	611348184	CML-RA	COMP	150	0	
--------------------------	---------	-----------	--------	------	-----	---	--

STRESS: TEMPERATURE CYCLE COND. C -65C TO 150C, PRE COND 192 HRS 30C/60%RH, MSL3

CY7C1061G30 (7CC171061A)	9313001	611348182	CML-RA	500	80	0	
--------------------------	---------	-----------	--------	-----	----	---	--

CY7C1061G30 (7CC171061A)	9313001	611348182	CML-RA	1000	78	0	
--------------------------	---------	-----------	--------	------	----	---	--

CY7C1061G30 (7CC171061A)	9313001	611348183	CML-RA	500	80	0	
--------------------------	---------	-----------	--------	-----	----	---	--

CY7C1061G30 (7CC171061A)	9313001	611348183	CML-RA	1000	79	0	
--------------------------	---------	-----------	--------	------	----	---	--

CY7C1061G30 (7CC171061A)	9313001	611348184	CML-RA	500	80	0	
--------------------------	---------	-----------	--------	-----	----	---	--

CY7C1061G30 (7CC171061A)	9313001	611348184	CML-RA	1000	80	0	
--------------------------	---------	-----------	--------	------	----	---	--

STRESS: X-RAY

CY7C1061G30 (7CC171061A)	9313001	611348182	CML-RA	COMP	15	0	
--------------------------	---------	-----------	--------	------	----	---	--

CY7C1061G30 (7CC171061A)	9313001	611348183	CML-RA	COMP	15	0	
--------------------------	---------	-----------	--------	------	----	---	--

CY7C1061G30 (7CC171061A)	9313001	611348184	CML-RA	COMP	15	0	
--------------------------	---------	-----------	--------	------	----	---	--



Reliability Test Data

QTP #: 150414

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

STRESS: ACOUSTIC

CY7S1041GE30 (7CP1710416A)	9507001	611513220	CML-RA	COMP	15	0	
CY7C1041G30 (7CP171041A)	9507001	611513219	CML-RA	COMP	15	0	
CY62147GE30 (7CP1721473A)	9507001	611514757	CML-RA	COMP	15	0	

STRESS: CONSTRUCTIONAL ANALYSIS

CY7S1041GE30 (7CP1710416A)	9507001	611513220	CML-RA	COMP	5	0	
CY7C1041G30 (7CP171041A)	9507001	611513219	CML-RA	COMP	5	0	
CY62147GE30 (7CP1721473A)	9507001	611514757	CML-RA	COMP	5	0	

STRESS: DYE PENETRANT TEST

CY7S1041GE30 (7CP1710416A)	9507001	611513220	CML-RA	COMP	15	0	
CY7C1041G30 (7CP171041A)	9507001	611513219	CML-RA	COMP	15	0	
CY62147GE30 (7CP1721473A)	9507001	611514757	CML-RA	COMP	15	0	



Document History Page

Document Title: QTP# 150414:48 VFBGA (6X8X1.0MM) SAC 105 SOLDER BALL FINISH, CUPD WIRE, MSL3,
260C REFLOW, CML-RA
Document Number: 002-12584

Rev.	ECN No.	Orig. of Change	Description of Change
**	5230544	JYF	Initial spec release.