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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 104205 VERSION*C
December 2014

16-Lead COL (Chip On Lead)

NiPdAu-Ag, MSL3, 260°C Reflow

K1-Amkor (L)

FOR ANY QUESTIONS ON THIS REPORT, PLEAE CONTACT
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PACKAGE QUALIFICATION HISTORY

QUAL REPORT	DESCRIPTION OF QUALIFICATION PURPOSE	DATE COMP.
104205	Qualify COL16L using Samsung Roughened PPF with NiPdAu-Ag L/F, Sumitomo G700 M/C, ATB120A D/A Film at MSL3 260C assembled in Amkor-K1	October 2010

MAJOR PACKAGE INFORMATION USED IN THIS QUALIFICATION	
Package Designation:	LG16A
Package Outline, Type, or Name:	16-Lead Chip on Lead (COL)
Mold Compound Name/Manufacturer:	G700 Sumitomo
Mold Compound Flammability Rating:	V-O per UL94
Mold Compound Alpha Emission Rate:	N/A
Oxygen Rating Index:	28-54%
Lead Frame Material:	Copper
Lead Finish, Composition / Thickness:	NiPdAu-Ag
Die Backside Preparation Method/Metallization:	Backgrind
Die Separation Method:	Sawing
Die Attach Supplier:	Ablestik
Die Attach Material:	ATB120A
Die Attach Method:	Film
Bond Diagram Designation	001-63628
Wire Bond Method:	Thermosonic
Wire Material/Size:	0.8mil / Au
Thermal Resistance Theta JA °C/W:	N/A
Package Cross Section Yes/No:	Yes
Assembly Process Flow:	49-10999
Name/Location of Assembly (prime) facility:	K1-Amkor
MSL Level	3
Reflow Profile	260C

ELECTRICAL TEST / FINISH DESCRIPTION	
Test Location:	CML-RA

Note: Please contact a Cypress Representative for other packages availability.

RELIABILITY TESTS PERFORMED PER SPECIFICATION REQUIREMENT

Stress/Test	Test Condition (Temp/Bias)	Result P/F
Temperature Cycle	MIL-STD-883C, Method 1010, 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
Pressure Cooker Test	121°C, 100%RH, 15 Psig Precondition: JESD22 Moisture Sensitivity MSL3 192 Hrs, 30°C/60%RH+3IR-Reflow, 260°C+0, -5°C	P
Electrostatic Discharge Human Body Model (ESD HBM)	(2200V) JEDEC EIA/JESD22-A114-B	P
Electrostatic Discharge Charge Device Model (ESD CDM)	(500V) JESD22-C101	P
High Accelerated Saturation Test (HAST)	130°C, 5.25V, 85% RH Precondition: JESD22 Moisture Sensitivity MSL3 192 Hrs, 30°C/60%RH+3IR-Reflow, 260°C+0, -5°C	P
High Temp Storage	150C, no bias	P
Acoustics Microscopy	J-STD-020	P
Ball Shear	JESD22-B116A, Cpk : 1.33, Ppk : 1.66	P
Bond Pull	MIL-STD-883 – Method 2011, Cpk : 1.33, Ppk : 1.66	P
Constructional Analysis	Criteria: Meet external and internal characteristics of Cypress package	P
Die Shear	MIL-STD-883, Method 2019	P
Dye Penetration	Test to determine the existence and extent of cracks, Criteria: No Package Crack	P
Final Visual	JESD22-B101B	P
Internal Visual	MIL-STD-883-2014	P
Physical Dimension	MIL-STD-1835, JESD22-B100	P
Solderability, Steam Aged	J-STD-002, JESD22-B102 95% solder coverage minimum	P
Thermal Shock	MIL-STD-883C, Method 1011	P
X-ray	MIL-STD-883 2012	P

Reliability Test Data

QTP #: 104205

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: ACOUSTIC, MSL3							
CP7194AT (8C20236AC)	4021105	611038976	L-KOREA	COMP	15	0	
CP7194AT (8C20236AC)	4021105	611038975	L-KOREA	COMP	15	0	
CP7194AT (8C20236AC)	4021105	611038974	L-KOREA	COMP	15	0	
STRESS: BOND PULL							
CP7194AT (8C20236AC)	4021105	611038976	L-KOREA	COMP	10	0	
CP7194AT (8C20236AC)	4021105	611038975	L-KOREA	COMP	10	0	
CP7194AT (8C20236AC)	4021105	611038974	L-KOREA	COMP	10	0	
STRESS: BALL SHEAR							
CP7194AT (8C20236AC)	4021105	611038976	L-KOREA	COMP	10	0	
CP7194AT (8C20236AC)	4021105	611038975	L-KOREA	COMP	10	0	
CP7194AT (8C20236AC)	4021105	611038974	L-KOREA	COMP	10	0	
STRESS: CONSTRUCTIONAL ANALYSIS							
CP7194AT (8C20236AC)	4021105	611038976	L-KOREA	COMP	5	0	
STRESS: CROSS SECTION							
CP7194AT (8C20236AC)	4021105	611038976	L-KOREA	COMP	5	0	
CP7194AT (8C20236AC)	4021105	611038975	L-KOREA	COMP	5	0	
CP7194AT (8C20236AC)	4021105	611038974	L-KOREA	COMP	5	0	
STRESS: DYE PENETRANT TEST							
CP7194AT (8C20236AC)	4021105	611038976	L-KOREA	COMP	15	0	
CP7194AT (8C20236AC)	4021105	611038975	L-KOREA	COMP	15	0	
CP7194AT (8C20236AC)	4021105	611038974	L-KOREA	COMP	15	0	
STRESS: ESD-CHARGE DEVICE MODEL, (500V)							
CP7194AT (8C20236AC)	4021105	611038976	L-KOREA	COMP	9	0	

Reliability Test Data

QTP #: 104205

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: ESD-HUMAN BODY CIRCUIT PER JESD22, METHOD A114-E, 2,200V							
CP7194AT (8C20236AC)	4021105	611038976	L-KOREA	COMP	8	0	
STRESS: HI-ACCEL SATURATION TEST, 130C, 5.25V, 85%RH, PRE COND 192 HR 30C/60%RH, MSL3							
CP7194AT (8C20236AC)	4021105	611038976	L-KOREA	128	78	0	
STRESS: HIGH TEMP STORAGE							
CP7194AT (8C20236AC)	4021105	611038976	L-KOREA	500	80	0	
STRESS: INTERNAL VISUAL							
CP7194AT (8C20236AC)	4021105	611038976	L-KOREA	COMP	5	0	
CP7194AT (8C20236AC)	4021105	611038975	L-KOREA	COMP	5	0	
CP7194AT (8C20236AC)	4021105	611038974	L-KOREA	COMP	5	0	
STRESS: PRESSURE COOKER TEST (121C, 100%RH), 15 Psig, PRE COND 192 HR 30C/60%RH (MSL3)							
CP7194AT (8C20236AC)	4021105	611038976	L-KOREA	168	80	0	
STRESS: PHYSICAL DIMENSION							
CP7194AT (8C20236AC)	4021105	611038976	L-KOREA	COMP	30	0	
CP7194AT (8C20236AC)	4021105	611038975	L-KOREA	COMP	30	0	
CP7194AT (8C20236AC)	4021105	611038974	L-KOREA	COMP	30	0	
STRESS: SOLDERABILITY							
CP7194AT (8C20236AC)	4021105	611038976	L-KOREA	COMP	3	0	
CP7194AT (8C20236AC)	4021105	611038975	L-KOREA	COMP	3	0	
CP7194AT (8C20236AC)	4021105	611038974	L-KOREA	COMP	3	0	
STRESS: TC COND. C –65C TO 150C, PRE COND 192 HR 30C/60%RH, MSL3							
CP7194AT (8C20236AC)	4021105	611038976	L-KOREA	500	80	0	
CP7194AT (8C20236AC)	4021105	611038975	L-KOREA	500	80	0	
CP7194AT (8C20236AC)	4021105	611038974	L-KOREA	500	80	0	
STRESS: THERMAL SHOCK							
CP7194AT (8C20236AC)	4021105	611038976	L-KOREA	200	80	0	

Reliability Test Data

QTP #: 104205

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: X-RAY							
CP7194AT (8C20236AC)	4021105	611038976	L-KOREA	COMP	15	0	
CP7194AT (8C20236AC)	4021105	611038975	L-KOREA	COMP	15	0	
CP7194AT (8C20236AC)	4021105	611038974	L-KOREA	COMP	15	0	

Document History Page

Document Title: QTP 104205: 16-LEAD CHIP ON LEAD (COL) NIPDAU-AG, MSL3, 260C REFLOW, K1-AMKOR (L) QUALIFICATION REPORT
Document Number: 001-65479

Rev.	ECN No.	Orig. of Change	Description of Change
**	3093264	NRG	Initial spec release
*A	3456437	NSR	Update the test conditions and reference standards/criteria for Ball Shear, Bond Pull, Dye Penetrant Test, Physical Dimension and Solderability test. Removed version 1.0 in the title page.
*B	4184150	HSTO	Sunset Review Removed reference Cypress spec in the reliability test performed table and replaced it with reference Industry standard.
*C	4605694	HSTO	Align qualification report based on the new template in the front page

Distribution: WEB

Posting: None