THIS SPEC IS OBSOLETE

Spec No: 001-88448

Spec Title: QTP#084005: 56 QFN AND 68 QFN SAW TYPE (8X8X1MM) NIPDAU-AG, MSL3, 260C REFLOW ASE-SHANGHAI

Replaced by: NONE

Cypress Semiconductor
Package Qualification Report

QTP# 084005 rev*A
August 2016

56 QFN and 68 QFN Saw Type (8 x 8 x 1mm) NiPdAu-Ag, MSL3, 260C Reflow ASE-Shanghai

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PACKAGE QUALIFICATION HISTORY

Qual Report	Description of Qualification Purpose	Date Comp
084005	Qualify 56L and 68L QFN(8X8X1) Saw Type Pb-Free(NiPdAu-Ag) Package Qualification at ASE Shanghai	Jan 09

MAJOR PACKAGE INFORMATION USED IN THIS QUALIFICATION	
Package Designation:	LT68/ LT56
Package Outline, Type, or Name:	56L / 68L- Quad Flat No-Lead (QFN)
Mold Compound Name/Manufacturer:	G700L/Sumitomo
Mold Compound Flammability Rating:	UL-94
Mold Compound Alpha Emission Rate :	N/A
Oxygen Rating Index:	N/A
Substrate Material:	N/A
Lead Finish, Composition / Thickness:	NiPdAu-Ag
Die Backside Preparation	Backgrind
Die Separation Method:	Saw
Die Attach Supplier:	Hitachi
Die Attach Material:	EN4900G
Die Attach Method:	Epoxy
Bond Diagram Designation:	001-48188, 001-48115
Wire Bond Method:	Thermosonic
Wire Material/Size:	Au, 0.8mil
Thermal Resistance Theta JA °C/W:	13.05 C/W
Package Cross Section Yes/No:	N/A
Assembly Process Flow:	001-20659
Name/Location of Assembly (prime) facility:	ASE-Shanghai (AE)
MSL Level	3
Reflow Profile	260C

ELECTRICAL TEST / FINISH DESCRIPTION	
Test Location:	CML-R, ASE-G, KYEC

RELIABILITY TESTS PERFORMED PER SPECIFICATION REQUIREMENTS

Stress/Test	Test Condition (Temp/Bias)	Result P/F
Acoustic Microscopy	J-STD-020	P
Ball Shear	JESD22-B116A	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	P
Dye Penetration test	Test to determine the existence and extent of cracks, Criteria: No Package Crack	P
Electrostatic Discharge Charge Device Model (ESD-CDM)	500V JESD22-C101	P
Electrostatic Discharge Human Body Model (ESD-HBM)	2,200V JESD22, Method A114-B	P
Final Visual	JESD22-B101B	P
Internal Visual	MIL-STD-883-2014	P
High Accelerated Saturation Test (HAST)	130°C, 85%RH, 5.25V Precondition: JESD22 Moisture Sensitivity MSL3 192 Hrs., 30°C/60%RH+3IR-Reflow, 260°C+0, -5°C	P
High Temperature Storage	150C, no bias	P
Physical Dimension	MIL-STD-1835, JESD22-B100	P
Pressure Cooker	121°C, 100%RH 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
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
Thermal Shock	125C, -55C MIL-STD-883C, Method 1011,	P
X-Ray	MIL-STD-883 – 2012	P

Reliability Test Data

QTP #: 084005

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: ACOUSTIC, MSL3							
CY8C24994 (8C14994AC)	4826655	610839411	SHANGHAI-AE	COMP	15	0	
CY8C24994 (8C14994AC)	4826655	610839412	SHANGHAI-AE	COMP	15	0	
CY7C65640A (7C65642EC)	4803351	610838527	SHANGHAI-AE	COMP	15	0	
CY8C24994 (8C14994AC)	4826655	610839419	SHANGHAI-AE	COMP	15	0	
CY8C24994 (8C14994AC)	4826655	610839417	SHANGHAI-AE	COMP	15	0	
CY7C65640A (7C65642EC)	4820094	610838529	SHANGHAI-AE	COMP	15	0	
STRESS: BALL SHEAR							
CY8C24994 (8C14994AC)	4826655	610839411	SHANGHAI-AE	COMP	10	0	
CY8C24994 (8C14994AC)	4826655	610839412	SHANGHAI-AE	COMP	10	0	
CY8C24994 (8C14994AC)	4826655	610839419	SHANGHAI-AE	COMP	10	0	
STRESS: BOND PULL							
CY8C24994 (8C14994AC)	4826655	610839411	SHANGHAI-AE	COMP	10	0	
CY8C24994 (8C14994AC)	4826655	610839419	SHANGHAI-AE	COMP	10	0	
STRESS: CONSTRUCTIONAL ANALYSIS							
CY8C24994 (8C14994AC)	4826655	610839411	SHANGHAI-AE	COMP	3	0	
STRESS: DIE SHEAR							
CY8C24994 (8C14994AC)	4826655	610839411	SHANGHAI-AE	COMP	15	0	
CY8C24994 (8C14994AC)	4826655	610839412	SHANGHAI-AE	COMP	15	0	
CY8C24994 (8C14994AC)	4826655	610839419	SHANGHAI-AE	COMP	15	0	
STRESS: DYE PENTRANT TEST							
CY8C24994 (8C14994AC)	4826655	610839411	SHANGHAI-AE	COMP	15	0	
CY8C24994 (8C14994AC)	4826655	610839412	SHANGHAI-AE	COMP	15	0	
CY7C65640A (7C65642EC)	4803351	610838527	SHANGHAI-AE	COMP	15	0	
CY8C24994 (8C14994AC)	4826655	610839419	SHANGHAI-AE	COMP	15	0	
CY8C24994 (8C14994AC)	4826655	610839417	SHANGHAI-AE	COMP	15	0	
CY7C65640A (7C65642EC)	4820094	610838529	SHANGHAI-AE	COMP	15	0	
STRESS: ESD-CHARGE DEVICE MODEL, 500V							
CY8C24994 (8C14994AC)	4826655	610839411	SHANGHAI-AE	COMP	9	0	
STRESS: ESD-HUMAN BODY CIRCUIT PER JESD22, METHOD A114-B, 2,200V							
CY8C24994 (8C14994AC)	4826655	610839411	SHANGHAI-AE	COMP	8	0	

Reliability Test Data

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Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: FINAL VISUAL							
CY8C24994 (8C14994AC)	4826655	610839411	SHANGHAI-AE	COMP	1245	0	
CY8C24994 (8C14994AC)	4826655	610839412	SHANGHAI-AE	COMP	991	0	
CY8C24994 (8C14994AC)	4826655	610839419	SHANGHAI-AE	COMP	1183	0	
STRESS: HI-ACCEL SATURATION TEST (130C, 85%RH, 5.25V), PRE COND192 HR 30C/60%RH, MSL3							
CY8C24994 (8C14994AC)	4826655	610839411	SHANGHAI-AE	128	80	0	
CY8C24994 (8C14994AC)	4826655	610839412	SHANGHAI-AE	128	80	0	
CY7C65640A (7C65642EC)	4803351	610838527	SHANGHAI-AE	128	77	0	
CY8C24994 (8C14994AC)	4826655	610839419	SHANGHAI-AE	128	80	0	
STRESS: INTERNAL VISUAL							
CY8C24994 (8C14994AC)	4826655	610839411	SHANGHAI-AE	COMP	5	0	
CY8C24994 (8C14994AC)	4826655	610839412	SHANGHAI-AE	COMP	5	0	
CY7C65640A (7C65642EC)	4803351	610838527	SHANGHAI-AE	COMP	5	0	
CY8C24994 (8C14994AC)	4826655	610839419	SHANGHAI-AE	COMP	5	0	
CY8C24994 (8C14994AC)	4826655	610839417	SHANGHAI-AE	COMP	5	0	
CY7C65640A (7C65642EC)	4820094	610838529	SHANGHAI-AE	COMP	5	0	
STRESS: PRESSURE COOKER TEST, 121C, 100%RH, PRE COND192 HR 30C/60%RH, MSL3							
CY8C24994 (8C14994AC)	4826655	610839411	SHANGHAI-AE	168	80	0	
CY7C65640A (7C65642EC)	4803351	610838527	SHANGHAI-AE	168	80	0	
CY8C24994 (8C14994AC)	4826655	610839419	SHANGHAI-AE	168	80	0	
STRESS: PHYSICAL DIMENSIONS							
CY8C24994 (8C14994AC)	4826655	610839411	SHANGHAI-AE	COMP	30	0	
CY8C24994 (8C14994AC)	4826655	610839412	SHANGHAI-AE	COMP	30	0	
CY7C65640A (7C65642EC)	4803351	610838527	SHANGHAI-AE	COMP	30	0	
CY8C24994 (8C14994AC)	4826655	610839419	SHANGHAI-AE	COMP	30	0	
CY8C24994 (8C14994AC)	4826655	610839417	SHANGHAI-AE	COMP	30	0	
CY7C65640A (7C65642EC)	4820094	610838529	SHANGHAI-AE	COMP	30	0	
STRESS: SOLDERABILITY							
CY8C24994 (8C14994AC)	4826655	610839411	SHANGHAI-AE	COMP	3	0	
CY8C24994 (8C14994AC)	4826655	610839412	SHANGHAI-AE	COMP	3	0	
CY7C65640A (7C65642EC)	4803351	610838527	SHANGHAI-AE	COMP	3	0	

Reliability Test Data

QTP #: 084005

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: TC COND. C -65C TO 150C, PRE COND 192 HRS 30C/60%RH, MSL3							
CY8C24994 (8C14994AC)	4826655	610839411	SHANGHAI-AE	500	80	0	
CY8C24994 (8C14994AC)	4826655	610839412	SHANGHAI-AE	500	80	0	
CY8C24994 (8C14994AC)	4826655	610839412	SHANGHAI-AE	1000	80	0	
CY7C65640A (7C65642EC)	4803351	610838527	SHANGHAI-AE	500	80	0	
CY7C65640A (7C65642EC)	4803351	610838527	SHANGHAI-AE	1000	80	0	
CY8C24994 (8C14994AC)	4826655	610839419	SHANGHAI-AE	500	80	0	
CY8C24994 (8C14994AC)	4826655	610839417	SHANGHAI-AE	500	80	0	
CY8C24994 (8C14994AC)	4826655	610839417	SHANGHAI-AE	1000	80	0	
CY7C65640A (7C65642EC)	4820094	610838529	SHANGHAI-AE	500	80	0	
CY7C65640A (7C65642EC)	4820094	610838529	SHANGHAI-AE	1000	80	0	
STRESS: THERMAL SHOCK COND. B – 55C TO 125C							
CY8C24994 (8C14994AC)	4826655	610839411	SHANGHAI-AE	200	80	0	
STRESS: X-RAY							
CY8C24994 (8C14994AC)	4826655	610839411	SHANGHAI-AE	COMP	15	0	
CY8C24994 (8C14994AC)	4826655	610839412	SHANGHAI-AE	COMP	15	0	
CY7C65640A (7C65642EC)	4803351	610838527	SHANGHAI-AE	COMP	15	0	

Document Title: QTP#084005: 56 QFN AND 68 QFN SAW TYPE (8X8X1MM) NIPDAU-AG, MSL3, 260C REFLOW ASE-SHANGHAI
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Rev.	ECN No.	Orig. of Change	Description of Change
**	4064141	HSTO	Initial Spec Release Qualification report published on Cypress.com is documented on memo HGA-773 and was transferred to qualification report spec template.
*A	5384628	HSTO	Obsolete specs

Distribution: WEB

Posting: None