

# **Cypress Semiconductor Process Qualification Report**

**QTP# 080202 VERSION 1.1  
August 2008**

**Microlense Deposition Process for WLCSP Image  
Sensor R3 Device  
Toppan, Shanghai**

## **CYPRESS TECHNICAL CONTACT FOR QUALIFICATION DATA:**

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**PROCESS QUALIFICATION HISTORY**

<b>QUAL REPORT</b>	<b>DESCRIPTION OF QUALIFICATION PURPOSE</b>	<b>DATE COMP.</b>
070201	Qualify Xintec Incorporated Taiwan as a new assembly site for R3 Wafer Level CSP Image Sensor (6.6x6.4mm) in ShellOC (Open Cavity) Technology using NEG bare glass, 353ND epoxy for top glass bond, U300 for bottom glass bond and Sn (96.5%) Ag (3%) Cu (0.5%) Solder Bump at MSL3, 245C Solder Reflow	Dec 07
080202	Qualification for Microlense Deposition at Toppan-Shanghai on R3M2AL Device in WLCSP	Aug 08

<b>MAJOR PACKAGE INFORMATION USED IN THIS QUALIFICATION</b>	
<b>Package Designation:</b>	SC70A
<b>Package Outline, Type, or Name:</b>	Wafer Level CSP Image Sensor (WLCSP)
<b>Lead Seal Method:</b>	N/A
<b>Glass Lid Material:</b>	Schott AF45 bare glass
<b>Solder Ball:</b>	Sn(96.5%) Ag(3%)Cu (0.5%)
<b>Die Backside Preparation Method/Metallization:</b>	Backgrind
<b>Die Separation Method:</b>	Saw
<b>Die Attach Supplier:</b>	Epotek
<b>Die Attach Material:</b>	353ND Top glass, U300 Bottom glass
<b>Bond Diagram Designation:</b>	001-07130
<b>Thermal Resistance Theta JA °C/W:</b>	33°C/W
<b>Package Cross Section Yes/No:</b>	N/A
<b>Assembly Process Flow:</b>	001-09718
<b>Name/Location of Assembly (prime) facility:</b>	Xintec, Taiwan
<b>MSL Level</b>	3
<b>Reflow profile</b>	245C

<b>ELECTRICAL TEST / FINISH DESCRIPTION</b>	
<b>Test Location:</b>	CML

**RELIABILITY TESTS PERFORMED PER SPECIFICATION REQUIREMENTS**

<b>Stress/Test</b>	<b>Test Condition (Temp/Bias)</b>	<b>Result P/F</b>
Temperature Cycle	JEDEC22 Method A104C, Condition G, -40°C to 125C Precondition: JESD22 Moisture Sensitivity Level 3 192 Hrs 30°C/60%RH+3IR-Reflow, <b>245°C</b> +0, -5°C	P
Temperature Humidity Bias	85C, 85%RH, 2.75V Precondition: JESD22 Moisture Sensitivity Level 3 192 Hrs 30°C/60%RH+3IR-Reflow, <b>245°C</b> +0, -5°C	P
High Temperature Storage	150C, no bias	P

## Reliability Test Data

QTP #: 080202

<i>Device</i>	<i>Fab Lot #</i>	<i>Assy Loc</i>	<i>Duration</i>	<i>Samp</i>	<i>Rej</i>	<i>Failure Mechanism</i>
<b>STRESS: TC COND. G -40C TO 125C PRE COND 192 HR 30C/60%RH, MSL3</b>						
R3M2AL	KF8843.1 Wafer 17	XT-TAIWN	500	25	0	
R3M2AL	KF8843.1 Wafer 17	XT-TAIWN	1000	25	0	
R3M2AL	KF8843.1 Wafer 11	XT-TAIWN	500	25	0	
R3M2AL	KF8843.1 Wafer 11	XT-TAIWN	1000	25	0	
R3M2AL	KF8843.1 Wafer 12	XT-TAIWN	500	25	0	
R3M2AL	KF8843.1 Wafer 12	XT-TAIWN	1000	25	0	
<b>STRESS: TEMP HUMIDITY BIAS, 2.75V, PRECONDITION 192 HRS 30C/60%RH, MSL3</b>						
R3M2AL	KF8843.1 Wafer 17	XT-TAIWN	168	25	0	
R3M2AL	KF8843.1 Wafer 17	XT-TAIWN	500	25	0	
R3M2AL	KF8843.1 Wafer 11	XT-TAIWN	168	25	0	
R3M2AL	KF8843.1 Wafer 11	XT-TAIWN	500	25	0	
R3M2AL	KF8843.1 Wafer 12	XT-TAIWN	168	24	0	
R3M2AL	KF8843.1 Wafer 12	XT-TAIWN	500	24	0	
<b>STRESS: HIGH TEMPERATURE STORAGE</b>						
R3M2AL	KF8843.1 Wafer 17	XT-TAIWN	500	25	0	
R3M2AL	KF8843.1 Wafer 17	XT-TAIWN	1000	25	0	
R3M2AL	KF8843.1 Wafer 11	XT-TAIWN	500	25	0	
R3M2AL	KF8843.1 Wafer 11	XT-TAIWN	1000	25	0	
R3M2AL	KF8843.1 Wafer 12	XT-TAIWN	500	25	0	
R3M2AL	KF8843.1 Wafer 12	XT-TAIWN	1000	25	0	