Cypress Semiconductor
Package Qualification Report

QTP# 061704 VERSION 1.0
December 2006

16-Lead Package Small Outline IC's **(150mils)** **(without downbonds)** **NiPdAu, MSL3** **235C & 260°C Reflow**
CML-RA (Autoline)

CYPRESS TECHNICAL CONTACT FOR QUALIFICATION DATA:

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PACKAGE QUALIFICATION HISTORY

Qual Report		Description of Qualification Purpose		Date Comp
061704		Qualify CML-Autoline assemble 16-Lead SOIC (150mils), NiPdAu, MSL1, 260C Reflow		May 06
061704		Cypress established policy requiring MSL and Reflow Peak Temperature alignment for Cypress and its Assembly Subcontractors.		Sep 06

MAJOR PACKAGE INFORMATION USED IN THIS QUALIFICATION	
Package Designation:	SZ16
Package Outline, Type, or Name:	16-Lead Small Outline Integrated Circuit (SOIC)
Mold Compound Name/Manufacturer:	Nitto-MP8500
Mold Compound Flammability Rating:	V-O per UL94
Oxygen Rating Index:	>28%
Substrate Material:	Copper
Lead Finish, Composition / Thickness:	NiPdAu
Die Backside Preparation Method/Metallization:	N/A
Die Separation Method:	Wafer Saw
Die Attach Supplier:	Dexter - Loctite
Die Attach Material:	QMI 509
Die Attach Method:	Silver Epoxy
Bond Diagram Designation:	001-07841
Wire Bond Method:	Thermosonic
Wire Material/Size:	Au, 1.0mil
Thermal Resistance Theta JA °C/W:	86°C/W
Package Cross Section Yes/No:	N/A
Assembly Process Flow:	11-20025
Name/Location of Assembly (prime) facility:	CML-RA
MSL Level	3
Reflow Profile	235C & 260C

ELECTRICAL TEST / FINISH DESCRIPTION	
Test Location:	CML-R

RELIABILITY TESTS PERFORMED PER SPECIFICATION REQUIREMENTS

Stress/Test	Test Condition (Temp/Bias)	Result P/F
Temperature Cycle	JEDEC22, Condition C, -65°C to 150°C Precondition: JESD22 Moisture Sensitivity MSL1 168 Hrs, 85°C/85%RH+3IR-Reflow, **260**°C+0, -5°C	P
High Accelerated Saturation	130°C, 3.63V, 85%RH Precondition: JESD22 Moisture Sensitivity MSL1 168 Hrs, 85°C/85%RH+3IR-Reflow, **260**°C+0, -5°C	P
Pressure Cooker	121C, 100%RH, 15 Psig Precondition: JESD22 Moisture Sensitivity MSL1 168 Hrs, 85°C/85%RH+3IR-Reflow, **260**°C+0, -5°C	P
High Temperature Storage	150°C, no bias	P
Acoustic Microscopy Test	Cypress Spec 25-00104	P

Reliability Test Data

QTP #: 061704

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: ACOUSTIC, MSL1							
W129AG (W129D)	8550028	24254-1	CML-RA	COMP	15	0	
W129AG (W129D)	8550028	24254-2	CML-RA	COMP	15	0	
W129AG (W129D)	8550028	24254-3	CML-RA	COMP	15	0	
STRESS: HI-ACCEL SATURATION TEST (130C, 85%RH, 3.63V), PRE COND 168 HR 85C/85%RH, MSL1							
W129AG (W129D)	8550028	24254-1	CML-RA	128	50	0	
W129AG (W129D)	8550028	24254-3	CML-RA	128	89	0	
STRESS: HIGH TEMPERATURE STORAGE, No Bias							
W129AG (W129D)	8550028	24254-1	CML-RA	500	50	0	
W129AG (W129D)	8550028	24254-1	CML-RA	1000	50	0	
STRESS: PRESSURE COOKER TEST (121C, 100%RH, 15 Psig), PRE COND 168 HR 85C/85%RH, MSL1							
W129AG (W129D)	8550028	24254-1	CML-RA	96	50	0	
W129AG (W129D)	8550028	24254-1	CML-RA	168	50	0	
W129AG (W129D)	8550028	24254-3	CML-RA	168	89	0	
STRESS: TC COND. C –65C TO 150C, PRE COND 168 HR 85C/85%RH, MSL1							
W129AG (W129D)	8550028	24254-1	CML-RA	300	49	0	
W129AG (W129D)	8550028	24254-1	CML-RA	500	49	0	
W129AG (W129D)	8550028	24254-1	CML-RA	1000	49	0	
W129AG (W129D)	8550028	24254-2	CML-RA	300	50	0	
W129AG (W129D)	8550028	24254-2	CML-RA	500	50	0	
W129AG (W129D)	8550028	24254-3	CML-RA	300	88	0	
W129AG (W129D)	8550028	24254-3	CML-RA	500	88	0	