

Cypress Semiconductor Package Qualification Report

**QTP# 062602 VERSION 3.0
January 2007**

**48/56-Lead TSSOP
NiPdAu, MSL3
235C & 260C Reflow
CML-R**

CYPRESS TECHNICAL CONTACT FOR QUALIFICATION DATA:

Rene Rodgers
Principal Reliability Engineer
(408) 943-2732

Mira Ben-Tzur
Quality Engineering Director
(408) 943-2675

PACKAGE QUALIFICATION HISTORY

QUAL REPORT	DESCRIPTION OF QUALIFICATION PURPOSE	DATE COMP.
062602	48/56-Lead TSSOP, NiPdAu, MSL1, 260C Reflow using KE-G3000DA (for non-SRAMs), KE-G6000DA (for SRAMs) Mold Compound assembled at CML-R	Aug 06
062602	Cypress established policy requiring MSL and Reflow Peak Temperature alignment for Cypress and its Assembly Subcontractors. Downgrade from MSL1 to MSL3	Sep 06

MAJOR PACKAGE INFORMATION USED IN THIS QUALIFICATION	
Package Designation:	ZZ56
Package Outline, Type, or Name:	56-Lead Thin Shrunk Small Outline
Mold Compound Name/Manufacturer:	Kyocera - KE G3000DA with PMC (for non-SRAMs) Kyocera - KE G6000DA (for SRAMs)
Mold Compound Flammability Rating:	UL94 – V0
Oxygen Rating Index:	NA
Lead Frame Material:	Cooper
Lead Finish, Composition / Thickness:	NiPdAu
Die Backside Preparation Method/Metallization:	Grinding
Die Separation Method:	100% Saw
Die Attach Supplier:	Dexter
Die Attach Material:	QMI 509
Die Attach Method:	Epoxy
Bond Diagram Designation	10-06539
Wire Bond Method:	Thermosonic
Wire Material/Size:	Au. 1.0 mil
Thermal Resistance Theta JA □ C/W:	20.87°C/W
Package Cross Section Yes/No:	N/A
Assembly Process Flow:	11-20047
Name/Location of Assembly (prime) facility:	CML-R
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	MIL-STD-883C, Method 1010, 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
Pressure Cooker Test	121°C, 100%RH, 15 Psig Precondition: JESD22 Moisture Sensitivity MSL1 168 Hrs 85°C/85%RH+3IR-Reflow, 260°C+0, -5°C	P
Acoustics Microscopy	Cypress Spec. 25-00104	P
Constructional Analysis	Cypress Spec. 25-20035	P
Dye Penetration	Cypress Spec. 25-00046	P
Glue Adhesion	Cypress Spec. 001-04301	P
High Temperature Storage	150°C, no bias	P
X-ray	Cypress Spec. 12-00292	P

Reliability Test Data

QTP #: 062602

<i>Device</i>	<i>Fab Lot #</i>	<i>Assy Lot #</i>	<i>Assy Loc</i>	<i>Duration</i>	<i>Samp</i>	<i>Rej</i>	<i>Failure Mechanism</i>
STRESS: ACOUSTIC, MSL1							
W320 (W320031A)	8538072	610617011M	CML-R	COMP	15	0	
W320 (W320031A)	8538072	610617011M1	CML-R	COMP	15	0	
W320 (W320031A)	8538072	610617011M2	CML-R	COMP	15	0	
STRESS: CONSTRUCTIONAL ANALYSIS							
W320 (W320031A)	8538072	610617011M	CML-R	COMP	5	0	
STRESS: DYE PENETRATION							
W320 (W320031A)	8538072	610617011M	CML-R	COMP	15	0	
W320 (W320031A)	8538072	610617011M1	CML-R	COMP	15	0	
W320 (W320031A)	8538072	610617011M2	CML-R	COMP	15	0	
STRESS: GLUE ADHESION							
W320 (W320031A)	8538072	610617011M	CML-R	COMP	15	0	
W320 (W320031A)	8538072	610617011M1	CML-R	COMP	15	0	
W320 (W320031A)	8538072	610617011M2	CML-R	COMP	15	0	
STRESS: HIGH TEMPERATURE STORAGE, 150C, no bias							
CY62256LL	4512383	610535998	CML-R	1000	50	0	
STRESS: PRESSURE COOKER TEST, 121C, 100%RH, 15 Psig, PRE COND 168H 85C/85%RH, MSL1							
W320 (W320031A)	8538072	610617011M	CML-R	168	49	0	
STRESS: TC COND. C -65C TO 150C, PRE COND 168 HR 85C/85%RH, MSL1							
W320 (W320031A)	8538072	610617011M	CML-R	300	50	0	
W320 (W320031A)	8538072	610617011M1	CML-R	300	50	0	
W320 (W320031A)	8538072	610617011M2	CML-R	300	49	0	
STRESS: X-RAY							
W320 (W320031A)	8538072	610617011M	CML-R	COMP	15	0	