Cypress Semiconductor
Package Qualification Report

QTP# 080302 VERSION 1.0
June 2008

28-Lead TSOP (8 x 13.4mm)

(with downbond)

NiPdAu, MSL3, 260C Reflow

CML-R

CYPRESS TECHNICAL CONTACT FOR QUALIFICATION DATA:

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PACKAGE QUALIFICATION HISTORY

QUAL REPORT		DESCRIPTION OF QUALIFICATION PURPOSE		DATE COMP.
021903		28-Lead TSOP, 32-Lead STSOP package (126 mil x 134 mil die size) using Hitachi CEL9200 CYR/IV77 and Ni/Pd leadframe and QMI 509 Epoxy with PMC assembled at CML-R		Sept 02
080302		Qualify CML Conventional for 28 TSOP package at MSL 3, 260C Reflow		Jun 08

MAJOR PACKAGE INFORMATION USED IN THIS QUALIFICATION	
Package Designation:	ZT28
Package Outline, Type, or Name:	28-Lead Thin Small Outline Package (TSOP)
Mold Compound Name/Manufacturer:	Hitachi CEL9200CYR
Mold Compound Flammability Rating:	V-O per UL94
Mold Compound Alpha Emission Rate:	N/A
Oxygen Rating Index:	45
Lead Frame Material:	Copper
Lead Finish, Composition / Thickness:	NiPdAu
Die Backside Preparation Method/Metallization:	Backgrind/Silicon
Die Separation Method:	100% Saw
Die Attach Supplier:	Hysol (Loctite)
Die Attach Material:	QMI 509
Bond Diagram Designation	10-06298
Wire Bond Method:	Thermosonic
Wire Material/Size:	Au, 1. 0 mil
Thermal Resistance Theta JA °C/W:	92°C/W
Package Cross Section Yes/No:	N/A
Assembly Process Flow:	11-20047
Name/Location of Assembly (prime) facility:	CML-R

ELECTRICAL TEST / FINISH DESCRIPTION	
Test Location:	Cypress Philippines (CML-R)

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 MSL 3 192 Hrs., 30°C/60%RH+3IR-Reflow, 260°C+5, -0°C	P
High Accelerated Saturation Test	130°C, 3.63V,85%RH Precondition: JESD22 Moisture Sensitivity MSL 3 192 Hrs., 30°C/60%RH+3IR-Reflow, 260°C+5, -0°C	P
Pressure Cooker	121 C, 100%RH, 15 PSIG Precondition: JESD22 Moisture Sensitivity MSL 3 192 Hrs., 30°C/60%RH+3IR-Reflow, 260°C+5, -0°C	P
High Temperature Storage	150°C, no bias	P
Adhesion of lead finish	Cypress Spec 25-00029	P
External Visual	Cypress Spec 25-00038	P
X-Ray	Cypress Spec 12-00292	P
Solderability, Steam Aged	Cypress Spec. 25-00018	P
Acoustic Microscopy	Cypress Spec 25-00104	P
SEM X-Section	MIL-STD-883, Method 883-2018-2	P

Reliability Test Data

QTP #: 021903

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: ACOUSTIC, MSL3							
CY62128BLL-ZAC (7C62128H)	4128416	*610211476*	CML-R	COMP	15	0	
CY62128BLL-ZAC (7C62128H)	4128416	*610211476M*	CML-R	COMP	15	0	
STRESS: HI-ACCEL SATURATION TEST, 130C, 85%RH, 3.63V, PRE COND 192 HR 30C/60%RH, MSL3							
CY62128BLL-ZAC (7C62128H)	4128416	*610211476*	CML-R	128	47	0	
CY62128BLL-ZAC (7C62128H)	4128416	*610211476M*	CML-R	128	44	0	
STRESS: PRESSURE COOKER TEST, 121C, 100%RH, PRE COND 192 HR 30C/60%RH, MSL3							
CY62128BLL-ZAC (7C62128H)	4128416	*610211476*	CML-R	174	44	0	
STRESS: SOLDERABILITY							
CY62128BLL-ZAC (7C62128H)	4128416	*610211476*	CML-R	COMP	3	0	
CY62128BLL-ZAC (7C62128H)	4128416	*610211476M*	CML-R	COMP	3	0	
STRESS: ADHESION OF LEAD FINISH							
CY62128BLL-ZAC (7C62128H)	4128416	*610211476*	CML-R	COMP	3	0	
CY62128BLL-ZAC (7C62128H)	4128416	*610211476M*	CML-R	COMP	3	0	
STRESS: EXTERNAL VISUAL							
CY62128BLL-ZAC (7C62128H)	4128416	*610211476*	CML-R	COMP	288	0	
CY62128BLL-ZAC (7C62128H)	4128416	*610211476M*	CML-R	COMP	48	0	
STRESS: HIGH TEMPERATURE STORAGE, 150C, no bias							
CY62128BLL-ZAC (7C62128H)	4128416	*610211476*	CML-R	500	45	0	
CY62128BLL-ZAC (7C62128H)	4128416	*610211476*	CML-R	1000	45	0	
STRESS: X-RAY							
CY62128BLL-ZAC (7C62128H)	4128416	*610211476*	CML-R	COMP	48	0	
CY62128BLL-ZAC (7C62128H)	4128416	*610211476M*	CML-R	COMP	288	0	
STRESS: TC CONDITION C, -65C TO 150C, PRE COND. 192 HRS 30C/60% RH, MSL3							
CY62128BLL-ZAC (7C62128H)	4128416	*610211476*	CML-R	300	50	0	
CY62128BLL-ZAC (7C62128H)	4128416	*610211476*	CML-R	500	50	0	
CY62128BLL-ZAC (7C62128H)	4128416	*610211476*	CML-R	1000	50	0	
CY62128BLL-ZAC (7C62128H)	4128416	*610211476M*	CML-R	300	50	0	
CY62128BLL-ZAC (7C62128H)	4128416	*610211476M*	CML-R	500	50	0	
CY62128BLL-ZAC (7C62128H)	4128416	*610211476M*	CML-R	1000	50	0	
CY62128BLL-ZAC (7C62128H)	4128416	*610211476M1*	CML-R	300	50	0	
CY62128BLL-ZAC (7C62128H)	4128416	*610211476M1*	CML-R	500	50	0	
CY62128BLL-ZAC (7C62128H)	4128416	*610211476M1*	CML-R	1000	50	0	

Reliability Test Data

QTP #: 080302

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: ACOUSTIC, MSL3							
CY7C1399BNL (7C1399SHC)	4727291	610751858	CML-R	COMP	15	0	
CY7C1399BNL (7C1399SHC)	4723980	610742329	CML-R	COMP	15	0	
CY7C1399BNL (7C1399SHC)	4729990	610751859	CML-R	COMP	15	0	
STRESS: HI-ACCEL SATURATION TEST, (130C, 3.63V), 85%RH, PRE COND 192 HR 30C/60%RH, MSL3							
CY7C1399BNL (7C1399SHC)	4727291	610751858	CML-R	128	77	0	
CY7C1399BNL (7C1399SHC)	4729990	610751859	CML-R	128	80	0	
STRESS: HIGH TEMPERATURE STORAGE, 150C, no bias							
CY7C1399BNL (7C1399SHC)	4727291	610751858	CML-R	500	80	0	
CY7C1399BNL (7C1399SHC)	4727291	610751858	CML-R	1000	80	0	
STRESS: PRESSURE COOKER TEST, 121C, 100%RH, PRE COND 192 HR 30C/60%RH, MSL3							
CY7C1399BNL (7C1399SHC)	4727291	610751858	CML-R	168	80	0	
CY7C1399BNL (7C1399SHC)	4729990	610751859	CML-R	168	80	0	
STRESS: TC CONDITION C, -65C TO 150C, PRE COND. 192 HRS 30C/60% RH, MSL3							
CY7C1399BNL (7C1399SHC)	4727291	610751858	CML-R	500	79	0	
CY7C1399BNL (7C1399SHC)	4727291	610751858	CML-R	1000	79	0	
CY7C1399BNL (7C1399SHC)	4729990	610751859	CML-R	500	80	0	
CY7C1399BNL (7C1399SHC)	4729990	610751859	CML-R	1000	77	0	