

Cypress Semiconductor Package Qualification Report

**QTP# 040804 VERSION 1.0
March 2004**

32-lead SOIC Package using NITTO MP8500YFT86

Mold Compound and Ni/Pd/Au Leadframe

MSL3, 260C Solder Reflow Peak

Cypress Philippines (CML-R)

CYPRESS TECHNICAL CONTACT FOR QUALIFICATION DATA:

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PACKAGE QUALIFICATION HISTORY

QUAL REPORT	DESCRIPTION OF QUALIFICATION PURPOSE	DATE COMP.
040804	32-lead (400mil) SOIC package using NITTO MP8500YFT86 Mold Compound, Ni/Pd /Au Leadframe, @ 260C Solder Reflow Peak, MSL3, CML-R , Conventional	Feb 04

MAJOR PACKAGE INFORMATION USED IN THIS QUALIFICATION	
Package Designation:	S32
Package Outline, Type, or Name:	32- Plastic Small Outline IC Package (SOIC)
Mold Compound Name/Manufacturer:	NITTO MP-8500YFT86
Mold Compound Flammability Rating:	UL-94V(0)
Oxygen Rating Index:	N/A
Lead Frame Material:	Copper based, Ni Pd Au Plating, Reduced Metal Pad
Lead Finish, Composition / Thickness:	0.8u" Ni/Pd /Au from Jade
Die Backside Preparation Method/Metallization:	N/A
Die Separation Method:	100%
Die Attach Supplier:	Dexter
Die Attach Material:	QMI 509
Die Attach Method:	Dispensing
Bond Diagram Designation	10-03535
Wire Bond Method:	Thermosonic
Wire Material/Size:	Gold, 1.0mil
Thermal Resistance Theta JA °C/W:	52.8 °C/W
Package Cross Section Yes/No:	N/A
Assembly Process Flow:	11-21000
Name/Location of Assembly (prime) facility:	Cypress Philippines (CML-R)

ELECTRICAL TEST / FINISH DESCRIPTION	
Test Location:	Cypress Philippines (CML-R)
Fault Coverage:	100%

Note: Please contact a Cypress Representative for other packages availability

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 MSL 3 192 Hrs., 30°C/60%RH+3IR-Reflow, 260°C+5, -0°C	P
Pressure Cooker	121°C, 100%RH Precondition: JESD22 Moisture Sensitivity MSL 3 192 Hrs, 30C/60%RH+3IR-Reflow, 260°C+5, 0°C	P
High Accelerated Saturation Test (HAST)	130°C, 5.5V, 85%RH Precondition: JESD22 Moisture Sensitivity MSL 3 192 Hrs, 30C/60%RH+3IR-Reflow, 260°C+5, 0°C	P
Adhesion of Lead Finish	Cypress Spec 25-00029	P
Ball Shear	Cypress Spec 12-00292	P
External Visual	Cypress Spec 12-00292	P
Bond Pull	Cypress Spec 24-00002	P
Physical Dimensions	Cypress Spec. 25-00031	P
X-Ray	MIL-STD-883C, Method 2012, Cypress Spec 12-00292	P
Solderability	Cypress Spec. 25-00018	P
Acoustic Microscopy, MSL 3	Cypress Spec. 25-00104	P

Reliability Test Data

QTP #: 040804

<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 - MICROSCOPE, MSL3							
CY62148BLL (7C621483CC)	4336366	610351791	CML-R	COMP	15	0	
CY62148BLL (7C621483CC)	4336366	610351792	CML-R	COMP	15	0	
CY62148BLL (7C621483CC)	4336366	610351793	CML-R	COMP	15	0	
STRESS: ADHESION OF LEAD FINISH							
CY62148BLL (7C621483CC)	4336366	610351791	CML-R	COMP	3	0	
CY62148BLL (7C621483CC)	4336366	610351792	CML-R	COMP	3	0	
STRESS: BOND PULL							
CY62148BLL (7C621483CC)	4336366	610351791	CML-R	COMP	10	0	
STRESS: EXTRNAL VISUAL							
CY62148BLL (7C621483CC)	4336366	610351791	CML-R	COMP	15	0	
CY62148BLL (7C621483CC)	4336366	610351792	CML-R	COMP	15	0	
STRESS: PHYSICAL DIMENSIONS							
CY62148BLL (7C621483CC)	4336366	610351791	CML-R	COMP	5	0	
STRESS: HI-ACCEL SATURATION TEST. 130C, 5.5V, 85%RH, , PRE COND 192 HR 30C/60%RH, MSL3							
CY62148BLL (7C621483CC)	4336366	610351791	CML-R	128	45	0	
STRESS: PRESSURE COOKER TEST, 121C, 100%RH, PRE COND 192 HR 30C/60%RH, MSL3							
CY62148BLL (7C621483CC)	4336366	610351791	CML-R	168	45	0	
STRESS: TC COND. C -65C TO 150C, , PRE COND 192 HR 30C/60%RH, MSL3							
CY62148BLL (7C621483CC)	4336366	610351791	CML-R	300	45	0	
CY62148BLL (7C621483CC)	4336366	610351791	CML-R	500	45	0	
CY62148BLL (7C621483CC)	4336366	610351791	CML-R	1000	45	0	
CY62148BLL (7C621483CC)	4336366	610351792	CML-R	300	44	0	
CY62148BLL (7C621483CC)	4336366	610351792	CML-R	500	44	0	
CY62148BLL (7C621483CC)	4336366	610351792	CML-R	1000	44	0	
CY62148BLL (7C621483CC)	4336366	610351793	CML-R	300	45	0	
CY62148BLL (7C621483CC)	4336366	610351793	CML-R	500	45	0	
CY62148BLL (7C621483CC)	4336366	610351793	CML-R	1000	45	0	

Reliability Test Data

QTP #: 040804

<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: SOLDERABILITY							
CY62148BLL (7C621483CC)	4336366	610351791	CML-R	COMP	3	0	
CY62148BLL (7C621483CC)	4336366	610351792	CML-R	COMP	3	0	
STRESS: X-RAY							
CY62148BLL (7C621483CC)	4336366	610351791	CML-R	COMP	15	0	