

Cypress Semiconductor Package Qualification Report

**QTP# 042904 VERSION 1.0
January 2005**

<p>44-Lead SOJ Package Pb-Free, Ni/Pd/Au Finish, MSL3, 260C Solder Reflow Peak AEC-Q100 Automotive Cypress Philippines (CML-R)</p>

CYPRESS TECHNICAL CONTACT FOR QUALIFICATION DATA:

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PACKAGE QUALIFICATION HISTORY

QUAL REPORT	DESCRIPTION OF QUALIFICATION PURPOSE	DATE COMP.
042904	44-Lead (400mil) SOJ package, Pb-Free ,Ni/Pd /Au Leadframe, @ 260C Solder Reflow Peak, MSL3, CML-R for AEC-Q100 Automotive	Jan 05

MAJOR PACKAGE INFORMATION USED IN THIS QUALIFICATION	
Package Designation:	V44
Package Outline, Type, or Name:	44-Lead Plastic Small Outline J-Bend Package (SOJ)
Mold Compound Name/Manufacturer:	NITTO MP-8500YFT86
Mold Compound Flammability Rating:	UL-94V(O)
Oxygen Rating Index:	N/A
Lead Frame Material:	Copper based, NiPdAu 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:	Wafer Saw 100%
Die Attach Supplier:	Dexter
Die Attach Material:	QMI 509
Die Attach Method:	Silver Epoxy
Bond Diagram Designation	10-06091
Wire Bond Method:	Thermosonic
Wire Material/Size:	1.0mil
Thermal Resistance Theta JA °C/W:	52.8 °C/W
Package Cross Section Yes/No:	Yes
Assembly Process Flow:	11-20050
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, 3.63V, 85%RH Precondition: JESD22 Moisture Sensitivity MSL 3 192 Hrs, 30C/60%RH+3IR-Reflow, 260°C+5, 0°C	P
High Temperature Storage	150C, no bias	P
Bond Pull	Cypress Spec 24-00002	P
External Visual	Cypress Spec 12-00292	P
Physical Dimensions	Cypress Spec. 25-00031	P
Solderability	Cypress Spec. 25-00018	P

Reliability Test Data

QTP #: 042904

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: BOND PULL							
CY7C1041CV33 (7C1341FC)	4420040	610444211	CML-R	COMP	5	0	
STRESS: PHYSICAL DIMENSIONS							
CY7C1041CV33 (7C1341FC)	4420040	610444211	CML-R	COMP	10	0	
STRESS: EXTRNAL VISUAL							
CY7C1041CV33 (7C1341FC)	4420040	610444211	CML-R	COMP	236	0	
STRESS: HI-ACCEL SATURATION TEST. 130C, 3.63V, 85%RH, , PRE COND 192 HR 30C/60%RH, MSL3							
CY7C1041CV33 (7C1341FC)	4420040	610444211	CML-R	96	50	0	
CY7C1041CV33 (7C1341FC)	4420040	610444211	CML-R	128	50	0	
STRESS: HIGH TEMPERATURE STORAGE, 150C, no bias							
CY7C1041CV33 (7C1341FC)	4420040	610444211	CML-R	1000	56	0	
STRESS: PRESSURE COOKER TEST, 121C, 100%RH, PRE COND 192 HR 30C/60%RH, MSL3							
CY7C1041CV33 (7C1341FC)	4420040	610444211	CML-R	96	50	0	
CY7C1041CV33 (7C1341FC)	4420040	610444211	CML-R	168	50	0	
STRESS: SOLEDERABILITY							
CY7C1041CV33 (7C1341FC)	4420040	610444211	CML-R	COMP	15	0	
STRESS: TC COND. C -65C TO 150C, , PRE COND 192 HR 30C/60%RH, MSL3							
CY7C1041CV33 (7C1341FC)	4420040	610444211	CML-R	500	50	0	