

Cypress Semiconductor Package Qualification Report

**QTP# 063104 VERSION 1.0
December 2006**

**36/44-Lead SOJ (400mils)
MSL3, 260C Solder Reflow Peak
CML-R**

CYPRESS TECHNICAL CONTACT FOR QUALIFICATION DATA:

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PACKAGE QUALIFICATION HISTORY

QUAL REPORT	DESCRIPTION OF QUALIFICATION PURPOSE	DATE COMP.
040803	36/44-Lead (400mil) SOJ package using NITTO MP8500YFT86 Mold Compound, NiPd Au Lead frame, @ 260C Reflow, MSL3, CML-R	Feb 04
063104	36/44 Lead (400mils) SOJ Qualification at CML conventional using Kyocera G3000DA with PMC, QMI 509 die attach material and NiPdAu Leadframe, MSL 3, 260°C Reflow	Nov 06

MAJOR PACKAGE INFORMATION USED IN THIS QUALIFICATION	
Package Designation:	VZ44
Package Outline, Type, or Name:	44-Lead Plastic Small Outline J-Bend Package (SOJ)
Mold Compound Name/Manufacturer:	KE-G3000DA (for non SRAM devices), KE-G6000DA (for SRAM devices)
Mold Compound Flammability Rating:	UL94 V-0
Oxygen Rating Index:	N/A
Leadframe Material:	Copper
Lead Finish, Composition / Thickness:	NiPdAu
Die Backside Preparation Method/Metallization:	Backgrinding
Die Separation Method:	100% Sawing
Die Attach Supplier:	Dexter
Die Attach Material:	QMI 509
Die Attach Method:	Epoxy
Bond Diagram Designation	10-02612
Wire Bond Method:	Thermosonic
Wire Material/Size:	Au 1.0 mil
Thermal Resistance Theta JA °C/W:	50.46°C/W
Package Cross Section Yes/No:	No
Assembly Process Flow:	11-20050
Name/Location of Assembly (prime) facility:	Cypress Philippines (CML-R)
MSL Level	3
Reflow Profile	260C

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

RELIABILITY TESTS PERFORMED PER SPECIFICATION REQUIREMENTS

Stress/Test	Test Condition (Temp/Bias)	Result P/F
Pressure Cooker	121°C, 100%RH, 15 Psig Precondition: JESD22 Moisture Sensitivity MSL3 192 Hrs, 30°C/60%RH+3IR-Reflow, 260°C +0, -5°C	P
Temperature Cycle	MIL-STD-883C, Method 1010, Condition C, -65 C to 150 C Precondition: JESD22 Moisture Sensitivity MSL3 192 Hrs, 30°C/60%RH+3IR-Reflow, 260°C +0, -5°C	P
High Accelerated Saturation Test (HAST)	130°C, 3.63V, 85%RH Precondition: JESD22 Moisture Sensitivity MSL 3 192 Hrs, 30°C/60%RH+3IR-Reflow, 260°C +0, -5°C	P
Acoustic Microscopy	Cypress Spec. 25-00104	P
Ball Shear	Cypress Spec. 12-00292	P
Bond Pull	Cypress Spec. 24-00002	P
External Visual	Cypress Spec. 12-00292	P
Dye Penetration Test	Cypress Spec. 25-00046	P
Physical Dimensions	Cypress Spec. 25-00031	P
Solderability	Cypress Spec. 25-00018	P
X-Ray	MIL-STD-883, Method 2012, Cypress Spec. 12-00292	P

Reliability Test Data

QTP #: 040803

<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, MSL3							
CY7C1041DV33 (7C1341C)	4329874	610342922	CML-R	COMP	15	0	
CY7C1041DV33 (7C1341C)	4329874	610342922M	CML-R	COMP	15	0	
CY7C1041DV33 (7C1341C)	4329874	610342922M1	CML-R	COMP	15	0	
STRESS: ADHESION OF LEAD FINISH							
CY7C1041DV33 (7C1341C)	4329874	610342922	CML-R	COMP	3	0	
CY7C1041DV33 (7C1341C)	4329874	610342922M	CML-R	COMP	3	0	
STRESS: BOND PULL							
CY7C1041DV33 (7C1341C)	4329874	610342922	CML-R	COMP	10	0	
STRESS: PHYSICAL DIMENSIONS							
CY7C1041DV33 (7C1341C)	4329874	610342922	CML-R	COMP	5	0	
STRESS: EXTRNAL VISUAL							
CY7C1041DV33 (7C1341C)	4329874	610342922	CML-R	COMP	15	0	
CY7C1041DV33 (7C1341C)	4329874	610342922M	CML-R	COMP	15	0	
STRESS: HI-ACCEL SATURATION TEST. 130C, 3.63V, 85%RH, PRE COND 192 HR 30C/60%RH, MSL3							
CY7C1041DV33 (7C1341C)	4329874	610342922	CML-R	128	45	0	
STRESS: PRESSURE COOKER TEST, 121C, 100%RH, 15 Psig, PRE COND 192 HR 30C/60%RH, MSL3							
CY7C1041DV33 (7C1341C)	4329874	610342922	CML-R	168	45	0	
STRESS: TC COND. C -65C TO 150C, PRE COND 192 HR 30C/60%RH, MSL3							
CY7C1041DV33 (7C1341C)	4329874	610342922	CML-R	300	45	0	
CY7C1041DV33 (7C1341C)	4329874	610342922	CML-R	500	45	0	
CY7C1041DV33 (7C1341C)	4329874	610342922	CML-R	1000	45	0	
CY7C1041DV33 (7C1341C)	4329874	610342922M	CML-R	300	45	0	
CY7C1041DV33 (7C1341C)	4329874	610342922M	CML-R	500	45	0	
CY7C1041DV33 (7C1341C)	4329874	610342922M	CML-R	1000	45	0	
CY7C1041DV33 (7C1341C)	4329874	610342922M1	CML-R	300	45	0	
CY7C1041DV33 (7C1341C)	4329874	610342922M1	CML-R	500	45	0	
CY7C1041DV33 (7C1341C)	4329874	610342922M1	CML-R	1000	45	0	

Reliability Test Data

QTP #: 040803

<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							
CY7C1041DV33 (7C1341C)	4329874	610342922	CML-R	COMP	3	0	
CY7C1041DV33 (7C1341C)	4329874	610342922M	CML-R	COMP	3	0	
STRESS: X-RAY							
CY7C1041DV33 (7C1341C)	4329874	610342922	CML-R	COMP	15	0	

Reliability Test Data

QTP #: 063104

<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, MSL3							
CY7C1041B (7C1541SC)	4620290	610644882M	CML-R	COMP	15	0	
CY7C1041B (7C1541SC)	4620290	610644882M1	CML-R	COMP	15	0	
CY7C1041B (7C1541SC)	4620290	610644882M2	CML-R	COMP	15	0	
STRESS: DYE PENETRATION							
CY7C1041B (7C1541SC)	4620290	610644882M	CML-R	COMP	15	0	
CY7C1041B (7C1541SC)	4620290	610644882M1	CML-R	COMP	15	0	
CY7C1041B (7C1541SC)	4620290	610644882M2	CML-R	COMP	15	0	
STRESS: PRESSURE COOKER TEST (121C, 100%RH, 15 Psig) PRE COND 192 HR 30C/60%RH, MSL3							
CY7C1041B (7C1541SC)	4620290	610643560M	CML-R	168	50	0	
STRESS: TC COND. C -65C TO 150C PRE COND 192 HR 30C/60%RH, MSL3							
CY7C1041B (7C1541SC)	4620290	610644882M	CML-R	300	50	0	
CY7C1041B (7C1541SC)	4620290	610644882M1	CML-R	300	50	0	
CY7C1041B (7C1541SC)	4620290	610644882M2	CML-R	300	50	0	
STRESS: X-RAY							
CY7C1041B (7C1541SC)	4620290	610644882M	CML-R	COMP	15	0	
CY7C1041B (7C1541SC)	4620290	610644882M1	CML-R	COMP	15	0	
CY7C1041B (7C1541SC)	4620290	610644882M2	CML-R	COMP	15	0	