

Cypress Semiconductor Package Qualification Report

**QTP# 020705 VERSION 1.0
July, 2002**

**24-lead QSOP Package using
Hitachi CEL9200CYR/IV77, Ni/Pd Leadframe, MSL1
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
020705	24-lead QSOP package with die size ≤ 64.7 x 99mls at MSL1, using Hitachi CEL9200CYR/IV77 M/C and Ni/Pd Lead frame assembled at (CML-R)	Jul 02

MAJOR PACKAGE INFORMATION USED IN THIS QUALIFICATION	
Package Designation:	Q2414
Package Outline, Type, or Name:	Quarter Size Outline Package (QSOP)
Mold Compound Name/Manufacturer:	Hitachi CEL 9200CYR / IV77
Mold Compound Flammability Rating:	V-O per UL94
Oxygen Rating Index:	>28%
Lead Frame Material:	Copper base with Ni/Pd and Gold Flash Plating
Lead Finish, Composition / Thickness:	Ni/Pd with Gold Flash
Die Backside Preparation Method/Metallization:	N/A
Die Separation Method:	Wafer Saw
Die Attach Supplier:	QMI
Die Attach Material:	509
Die Attach Method:	Epoxy
Bond Diagram Designation:	10-03584
Wire Bond Method:	Thermosonic
Wire Material/Size:	Au, 1.0mil
Thermal Resistance Theta JA °C/W:	87.81°C/W
Package Cross Section Yes/No:	N/A
Assembly Process Flow:	11-20003
Name/Location of Assembly (prime) facility:	Cypress Philippines (CML-R)

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

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 1 168 Hrs., 85°C/85%RH+3IR-Reflow, 220°C+5, -0°C	P
High Accelerated Saturation Test	130°C, 3.63V Precondition: JESD22 Moisture Sensitivity MSL1 168 Hrs., 85°C/85%RH+3IR-Reflow, 220°C+5, -0°C	P
Pressure Cooker	Precondition: JESD22 Moisture Sensitivity MSL 1 168 Hrs., 85°C/85%RH+3IR-Reflow, 220°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
Solderability, Steam Aged	Cypress Spec. 25-00018	P
X-Ray	Cypress Spec 12-000292	P
SEM X-Section	MIL-STD-883, Method 2018-2	P
Acoustic Microscopy Test (C-SAM)	Cypress Spec 25-00104	P

Reliability Test Data

QTP #: 020705

<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							
CY7C63101A-QC (7C63101G)	2151728	610205913	CML-R	COMP	15	0	
CY7C63101A-QC (7C63101G)	2151728	610205913M	CML-R	COMP	15	0	
CY7C63101A-QC (7C63101G)	2151728	610205913M1	CML-R	COMP	15	0	
STRESS: HIGH TEMPERATURE STORAGE, 150C							
CY7C63101A-QC (7C63101G)	2151728	610205913	CML-R	500	50	0	
STRESS: EXERNAL VISUAL							
CY7C63101A-QC (7C63101G)	2151728	610205913	CML-R	COMP	1710	0	
CY7C63101A-QC (7C63101G)	2151728	610205913M	CML-R	COMP	819	0	
STRESS: SOLDERABILITY							
CY7C63101A-QC (7C63101G)	2151728	610205913	CML-R	COMP	5	0	
CY7C63101A-QC (7C63101G)	2151728	610205913M	CML-R	COMP	5	0	
STRESS: ADHESION TO LEAD FINISH							
CY7C63101A-QC (7C63101G)	2151728	610205913	CML-R	COMP	3	0	
CY7C63101A-QC (7C63101G)	2151728	610205913M	CML-R	COMP	3	0	
STRESS: X-RAY							
CY7C63101A-QC (7C63101G)	2151728	610205913	CML-R	COMP	84	0	
CY7C63101A-QC (7C63101G)	2151728	610205913M	CML-R	COMP	84	0	
STRESS: HI-ACCEL SATURATION TEST. 130C, 5.5V, 85%RH, PRE COND 168 HR 85C/85%RH, MSL 1							
CY7C63101A-QC (7C63101G)	2151728	610205913	CML-R	128	45	0	
CY7C63101A-QC (7C63101G)	2151728	610205913M	CML-R	128	45	0	
STRESS: PRESSURE COOKER TEST, 121C, 100%RH, PRE COND 168 HR 85C/85%RH, MSL 1							
CY7C63101A-QC (7C63101G)	2151728	610205913	CML-R	192	45	0	

Reliability Test Data

QTP #: 020705

<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: TC COND. C -65C TO 150C, PRECONDITION 168 HRS 85C/85%RH, MSL1							
CY7C63101A-QC (7C63101G)	2151728	610205913	CML-R	300	50	0	
CY7C63101A-QC (7C63101G)	2151728	610205913	CML-R	500	49	0	
CY7C63101A-QC (7C63101G)	2151728	610205913	CML-R	1000	49	0	
CY7C63101A-QC (7C63101G)	2151728	610205913M	CML-R	300	50	0	
CY7C63101A-QC (7C63101G)	2151728	610205913M	CML-R	500	50	0	
CY7C63101A-QC (7C63101G)	2151728	610205913M	CML-R	1000	50	0	
CY7C63101A-QC (7C63101G)	2151728	610205913M1	CML-R	300	50	0	
CY7C63101A-QC (7C63101G)	2151728	610205913M1	CML-R	500	50	0	