

Cypress Semiconductor Package Qualification Report

**QTP# 014002 VERSION 1.0
April, 2002**

**44-lead Plastic Leaded Chip Carrier (PLCC)
OSE Philippines Assembly**

CYPRESS TECHNICAL CONTACT FOR QUALIFICATION DATA:

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PACKAGE QUALIFICATION HISTORY

QUAL REPORT	DESCRIPTION OF QUALIFICATION PURPOSE	DATE COMP.
014002	Transfer 44-lead Plastic Leaded Chip Carrier (PLCC) package from Alphatec to OSE Philippines with die size $\leq 326.9 \times 192.8$ mils.	Jan 02

MAJOR PACKAGE INFORMATION USED IN THIS QUALIFICATION	
Package Designation:	J44
Package Outline, Type, or Name:	44-lead Plastic Leaded Chip Carrier (PLCC)
Mold Compound Name/Manufacturer:	Sumitomo EME6300H
Mold Compound Flammability Rating:	V-O per UL 94
Oxygen Rating Index:	>28%
Lead Frame Material:	Copper
Lead Finish, Composition / Thickness:	Solder Plated 85%Sn - 15% Pb
Die Backside Preparation Method/Metallization:	N/A
Die Separation Method:	Wafer Saw
Die Attach Supplier:	Ablestik
Die Attach Material:	84-1 LMISR4
Bond Diagram Designation	10-02814
Wire Bond Method:	Thermosonic
Wire Material/Size:	Gold, 1.3mil
Thermal Resistance Theta JA °C/W:	52° C/W
Package Cross Section Yes/No:	N/A
Assembly Process Flow:	49-65002
Name/Location of Assembly (prime) facility:	OSE Philippines

ELECTRICAL TEST / FINISH DESCRIPTION	
Test Location:	Cypress CSPI
Fault Coverage:	100%

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, 220°C+ 5, -0°C	P
High Accelerated Saturation Test	130°C, 85%RH, 5.5V Precondition: JESD22 Moisture Sensitivity MSL 3 192 Hrs., 30°C/60%RH+ 3IR-Reflow, 220°C+ 5, -0°C	P
Pressure Cooker Test	No bias, 121°C, 100%, Precondition: JESD22 Moisture Sensitivity MSL 3 192 Hrs., 30°C/60%RH+ 3IR-Reflow, 220°C+ 5, -0°C	P
Internal Visual	Cypress Spec 25-00017	P
External Visual	Cypress Spec 12-00292	P
Ball Shear	Cypress Spec 24-00018	P
High Temperature Storage	150°C, no bias	P
Physical Dimensions	Cypress Spec 25-00031	P
Bond Pull	Cypress Spec 24-00002	P
Die Shear	Cypress Spec 12-00292	P
Ball Shear	Cypress Spec 12-00292	P
Solderability, Steam Aged	Cypress Spec. 25-00018	P
Thermal Shock	125C, -55C Cypress Spec 25-00014	P
Electrostatic Discharge Human Body Model (ESD-HBM)	2,200V MIL-STD-883, Method 3015.7	P
Electrostatic Discharge Charge Device Model (ESD-CDM)	500V Cypress Spec 25-00020	P
X-Ray	MIL-STD-883-2012	P
Acoustic Microscopy Test C-SAM)	Cypress Spec 25-00104	P

Reliability Test Data

QTP #: 014002

<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							
CY7C372I-JC (7C372D)	2110583	610133785	PHIL-OP	COMP	20	0	
CY37064VP44 (7C37620B)	9106602	610133784	PHIL-OP	COMP	20	0	
CY37064VP44 (7C37620B)	9106602	610133784	PHIL-OP	COMP	20	0	
STRESS: HI-ACCEL SATURATION TEST, 130C, 85%RH, 5.5V)PRE COND 192 HR 30C/60%RH, MSL3							
CY7C372I-JC (7C372D)	2110583	610133785	PHIL-OP	128	50	0	
STRESS: HIGH TEMP STORGAGE, PLASTIC, 150C							
CY7C372I-JC (7C372D)	2110583	610133785	PHIL-OP	500	50	0	
STRESS: PRESSURE COOKER TEST, 121C, 100%RH), PRE COND 192HRS 30C/60%RH, MSL3							
CY7C372I-JC (7C372D)	2110583	610133785	PHIL-OP	168	50	0	
CY37064VP44 (7C37620B)	9106602	610133784	PHIL-OP	168	50	0	
STRESS: THERMAL SHOCK, CONDITION 125C/-55C							
CY7C372I-JC (7C372D)	2110583	610133785	PHIL-OP	100	50	0	
CY7C372I-JC (7C372D)	2110583	610133785	PHIL-OP	200	50	0	
STRESS: PHYSICAL DIMENSIONS							
CY7C372I-JC (7C372D)	2110583	610133785	PHIL-OP	COMP	10	0	
STRESS: SOLDERABILITY							
CY7C372I-JC (7C372D)	2110583	610133785	PHIL-OP	COMP	3	0	
STRESS: X-RAY							
CY7C372I-JC (7C372D)	2110583	610133785	PHIL-OP	COMP	15	0	
STRESS: DIE SHEAR							
CY7C372I-JC (7C372D)	2110583	610133785	PHIL-OP	COMP	30	0	
STRESS: BOND PULL							
CY7C372I-JC (7C372D)	2110583	610133785	PHIL-OP	COMP	10	0	

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STRESS: BALL SHEAR							
CY7C372I-JC (7C372D)	2110583	610133785	PHIL-OP	COMP	10	0	
STRESS: INTERNAL VISUAL							
CY7C372I-JC (7C372D)	2110583	610133785	PHIL-OP	COMP	5	0	
STRESS: EXTERNAL VISUAL							
CY7C372I-JC (7C372D)	2110583	610133785	PHIL-OP	COMP	15	0	
STRESS: ESD-CHARGE DEVICE MODEL, 500V							
CY7C372I-JC (7C372D)	2110583	610133785	PHIL-OP	COMP	9	0	
STRESS: ESD-HUMAN BODY CIRCUIT PER MIL STD 883, METHOD 3015, 2,200V							
CY7C372I-JC (7C372D)	2110583	610133785	PHIL-OP	COMP	9	0	
STRESS: TC CONDITION C, -65C TO 150C, PRE COND. 192 HRS 30C/60% RH, MSL3							
CY7C372I-JC (7C372D)	2110583	610133785	PHIL-OP	300	50	0	
CY7C372I-JC (7C372D)	2110583	610133785	PHIL-OP	500	50	0	
CY7C372I-JC (7C372D)	2110583	610133785	PHIL-OP	1000	50	0	
CY37064VP44 (7C37620B)	9106602	610133784	PHIL-OP	300	50	0	
CY37064VP44 (7C37620B)	9106602	610133784	PHIL-OP	500	50	0	
CY37064VP44 (7C37620B)	9106602	610133784	PHIL-OP	1000	50	0	
CY37064VP44 (7C37620B)	9106602	610133784	PHIL-OP	300	50	0	
CY37064VP44 (7C37620B)	9106602	610133784	PHIL-OP	500	50	0	
CY37064VP44 (7C37620B)	9106602	610133784	PHIL-OP	1000	50	0	