

Cypress Semiconductor Package Qualification Report

**QTP# 030101 VERSION 1.0
July, 2003**

**100-Lead Thin Quad Flat Pack 14 x 20 x 1.4mm
(TQFP Larger Die)
ASE Taiwan (G)**

CYPRESS TECHNICAL CONTACT FOR QUALIFICATION DATA:

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PACKAGE QUALIFICATION HISTORY

QUAL REPORT	DESCRIPTION OF QUALIFICATION PURPOSE	DATE COMP.
030101	Larger die Qualification using 18M TSMC 100-lead TQFP (14 x 20 x 1.4mm) with die size 388 x 482mils.	July 03

MAJOR PACKAGE INFORMATION USED IN THIS QUALIFICATION	
Package Designation:	A100
Package Outline, Type, or Name:	100-pin Thin Quad Flat Pack (TQFP)
Mold Compound Name/Manufacturer:	Hitachi CEL-9200THF
Mold Compound Flammability Rating:	V-O per UL94
Oxygen Rating Index:	>53%
Lead Frame Material:	Copper
Lead Finish, Composition / Thickness:	Solder Plate, 85%Sn, 15%Pb
Die Backside Preparation Method/Metallization:	Backgrind
Die Separation Method:	Sawing
Die Attach Supplier:	Ablestik
Die Attach Material:	Ablestik 8361
Bond Diagram Designation	10-04115
Wire Bond Method:	Thermosonic
Wire Material/Size:	1.2mil
Thermal Resistance Theta JA °C/W:	46.7°C/W
Package Cross Section Yes/No:	N/A
Assembly Process Flow:	49-41999
Name/Location of Assembly (prime) facility:	ASE Taiwan (TAIWN-G)

ELECTRICAL TEST / FINISH DESCRIPTION	
Test Location:	ASE Taiwan (TAIWN-G)
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, 220°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, 220°C+5, 0°C	P
Pressure Cooker	121°C, 100%RH Precondition: JESD22 Moisture Sensitivity MSL 3 192 Hrs, 30C/60%RH+3IR-Reflow, 220°C+5, 0°C	P
X-Ray	MIL-STD-883, Method 32012, Cypress Spec. 12-00292	P
High Temperature Storage	150C, no bias	P
Ball Shear	Cypress Spec 12-00292	P
Bond Pull	Cypress Spec 12-00292	P
Die Shear	Cypress Spec 12-00292	P
Thermal Shock	125C, -55C Cypress Spec 25-00014	P
Internal Visual	Cypress Spec 12-00292	P
Acoustic Microscopy, MSL 3	Cypress Spec. 25-00104	P

Reliability Test Data

QTP #: 030101

<i>Device</i>	<i>Fab Lot #</i>	<i>Assy Lot #</i>	<i>Ass Loc</i>	<i>Duration</i>	<i>Samp</i>	<i>Rej</i>	<i>Failure Mechanism</i>
STRESS: ACOUSTIC, MSL3							
CY7C1372B-AC (7C1372B)	9239721	610253764	TAIWN-G	COMP	15	0	
CY7C1372B-AC (7C1372B)	9239721	610253763	TAIWN-G	COMP	15	0	
CY7C1372B-AC (7C1372B)	9239721	610253765	TAIWN-G	COMP	15	0	
STRESS: HIGH TEMPERATURE STORAGE, 150C							
CY7C1372B-AC (7C1372B)	9239721	610253763	TAIWN-G	500	50	0	
CY7C1372B-AC (7C1372B)	9239721	610253763	TAIWN-G	1000	50	0	
STRESS: INTERNAL VISUAL							
CY7C1372B-AC (7C1372B)	9239721	610253764	TAIWN-G	COMP	5	0	
STRESS: X-RAY							
CY7C1372B-AC (7C1372B)	9239721	610253764	TAIWN-G	COMP	15	0	
CY7C1372B-AC (7C1372B)	9239721	610253763	TAIWN-G	COMP	15	0	
CY7C1372B-AC (7C1372B)	9239721	610253765	TAIWN-G	COMP	15	0	
STRESS: BALL SHEAR							
CY7C1372B-AC (7C1372B)	9239721	610253764	TAIWN-G	COMP	5	0	
STRESS: DIE SHEAR							
CY7C1372B-AC (7C1372B)	9239721	610253764	TAIWN-G	COMP	15	0	
STRESS: BOND PULL							
CY7C1372B-AC (7C1372B)	9239721	610253764	TAIWN-G	COMP	5	0	
STRESS: THERMAL SHOCK							
CY7C1372B-AC (7C1372B)	9239721	610253763	TAIWN-G	100	50	0	
CY7C1372B-AC (7C1372B)	9239721	610253763	TAIWN-G	200	50	0	
STRESS: HI-ACCEL SATURATION TEST, 130C, 85%RH, 3.63V, PRE COND 192 HR 30C/60%RH, MSL3							
CY7C1372B-AC (7C1372B)	9239721	610253764	TAIWN-G	128	50	0	
STRESS: PRESSURE COOKER TEST, 121C, 100%RH, PRE COND 192 HR 30C/60%RH							
CY7C1372B-AC (7C1372B)	9239721	610253764	TAIWN-G	168	50	0	

Reliability Test Data

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Device	Fab Lot #	Assy Lot #	Ass Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: TC COND. C -65C TO 150C, PRECONDITION 192 HRS 30C/60%RH, MSL3							
CY7C1372B-AC (7C1372B)	9239721	610253764	TAIWN-G	300	49	0	
CY7C1372B-AC (7C1372B)	9239721	610253764	TAIWN-G	500	49	0	
CY7C1372B-AC (7C1372B)	9239721	610253764	TAIWN-G	1000	49	0	
CY7C1372B-AC (7C1372B)	9239721	610253763	TAIWN-G	300	49	0	
CY7C1372B-AC (7C1372B)	9239721	610253763	TAIWN-G	500	49	0	
CY7C1372B-AC (7C1372B)	9239721	610253763	TAIWN-G	1000	49	0	
CY7C1372B-AC (7C1372B)	9239721	610253765	TAIWN-G	300	50	0	
CY7C1372B-AC (7C1372B)	9239721	610253765	TAIWN-G	500	50	0	
CY7C1372B-AC (7C1372B)	9239721	610253765	TAIWN-G	1000	50	0	