

Cypress Semiconductor Package Qualification Report

**QTP# 014602 VERSION 1.0
April, 2002**

**120-lead Thin Quad Flat Pack (TQFP)
14 x 14 x 1.4mm, MSL3
ASE Taiwan**

CYPRESS TECHNICAL CONTACT FOR QUALIFICATION DATA:

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PACKAGE QUALIFICATION HISTORY

QUAL REPORT	DESCRIPTION OF QUALIFICATION PURPOSE	DATE COMP.
002403	Qualify EME 7320 Molding Compound, 100-lead TQFP (14 x 14 x 1.4mm), 144-lead (20 x 20 x 1.4mm) and 128-lead (14 x 20 x 1.4mm) Package, ASE Taiwan (TAIWN-G)	Nov 00
014602	Larger die size 271.2 x 415.5 mils	Apr 02

MAJOR PACKAGE INFORMATION USED IN THIS QUALIFICATION	
Package Designation:	A120
Package Outline, Type, or Name:	120-pin Thin Quad Flat Pack (TQFP)
Mold Compound Name/Manufacturer:	Sumitomo EME 7320A
Mold Compound Flammability Rating:	V-O per UL94
Oxygen Rating Index:	> 28%
Lead Frame Material:	Copper
Lead Finish, Composition / Thickness:	Solder Plate, 85%Sn, 15%Pb, 200um min
Die Backside Preparation Method/Metallization:	Backgrind
Die Separation Method:	Wafer Saw
Die Attach Supplier:	Ablestik
Die Attach Material:	Ablestik 8361J
Bond Diagram Designation	10-04268
Wire Bond Method:	Thermosonic
Wire Material/Size:	Gold/ 1.2mil
Thermal Resistance Theta JA °C/W:	30°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
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, 235°C+ 5, -0°C	P
Pressure Cooker	121°C, 100%RH Precondition: JESD22 Moisture Sensitivity MSL 3 192 Hrs, 30C/60%RH+ 3IR-Reflow, 235°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
Internal Visual	Cypress Spec 12-00292	P
Thermal Shock	-55C to + 125C Cypress Spec. 25-00014	P
Acoustic Microscopy, MSL 3	Cypress Spec. 25-00104	P

Reliability Test Data

QTP #: 014602

<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							
CY7C0832V-AC (7C08323A)	4133371	610137696	TAIWN-G	COMP	15	0	
CY7C0832V-AC (7C08323A)	4132093	610138256	TAIWN-G	COMP	15	0	
CY7C0832V-AC (7C08323A)	4133371	610138822	TAIWN-G	COMP	15	0	
STRESS: THERMAL SHOCK, +125C/-55C							
CY7C0832V-AC (7C08323A)	4133371	610137696	TAIWN-G	100	48	0	
CY7C0832V-AC (7C08323A)	4133371	610137696	TAIWN-G	200	48	0	
STRESS: HIGH TEMPERATURE STORAGE, 150C							
CY7C0832V-AC (7C08323A)	4133371	610137696	TAIWN-G	500	45	0	
CY7C0832V-AC (7C08323A)	4133371	610137696	TAIWN-G	1000	45	0	
STRESS: BALL SHEAR							
CY7C0832V-AC (7C08323A)	4131841	610137125	TAIWN-G	COMP	10	0	
STRESS: BOND PULL							
CY7C0832V-AC (7C08323A)	4131841	610137125	TAIWN-G	COMP	10	0	
STRESS: DIE SHEAR							
CY7C0832V-AC (7C08323A)	4131841	610137125	TAIWN-G	COMP	15	0	
STRESS: INTERNAL VISUAL							
CY7C0832V-AC (7C08323A)	4132093	610138256	TAIWN-G	COMP	5	0	
CY7C0832V-AC (7C08323A)	4131841	610137125	TAIWN-G	COMP	5	0	
STRESS: X-RAY							
CY7C0832V-AC (7C08323A)	4131841	610137125	TAIWN-G	COMP	15	0	
STRESS: PRESSURE COOKER TEST, 121C, 100%RH, PRE COND 192 HR 30C/60%RH							
CY7C0832V-AC (7C08323A)	4133371	610137696	TAIWN-G	168	47	0	
STRESS: TC COND. C -65C TO 150C, PRECONDITION 192 HRS 30C/60%RH, MSL3							
CY7C0832V-AC (7C08323A)	4133371	610137696	TAIWN-G	300	46	0	
CY7C0832V-AC (7C08323A)	4133371	610137696	TAIWN-G	500	46	0	
CY7C0832V-AC (7C08323A)	4132093	610138256	TAIWN-G	300	48	0	
CY7C0832V-AC (7C08323A)	4133371	610138822L2	TAIWN-G	300	47	0	
CY7C0832V-AC (7C08323A)	4133371	610138822L2	TAIWN-G	500	47	0	

Reliability Test Data

QTP #: 002403

<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							
CY7C09579V-AC	4003220	610019982	TAIWN-G	COMP	15	0	
CY7C09379-AC	4004331	610019671	TAIWN-G	COMP	15	0	
CY7C43684-AC	4946059	610019983	TAIWN-G	COMP	15	0	
STRESS: HI-ACCEL SATURATION TEST, 130C, 85%RH, 5.5V, PRE COND 192 HR 30C/60%RH, MSL3							
CY7C09579V-AC	4003220	610019982	TAIWN-G	128H	48	0	
CY7C09379-AC	4004331	610019671	TAIWN-G	128H	45	0	
CY7C43684-AC	4946059	610019983	TAIWN-G	128H	48	0	
STRESS: TC CONDITION C, -65C TO 150C, PRE COND. 192 HRS 30C/60% RH, MSL3							
CY7C09579V-AC	4003220	610019982	TAIWN-G	300	50	0	
CY7C09579V-AC	4003220	610019982	TAIWN-G	500	50	0	
CY7C09579V-AC	4003220	610019982	TAIWN-G	1000	50	0	
CY7C09379-AC	4004331	610019671	TAIWN-G	300	50	0	
CY7C09379-AC	4004331	610019671	TAIWN-G	500	50	0	
CY7C09379-AC	4004331	610019671	TAIWN-G	1000	50	0	
CY7C43684-AC	4946059	610019983	TAIWN-G	300	49	0	
CY7C43684-AC	4946059	610019983	TAIWN-G	500	49	0	
CY7C43684-AC	4946059	610019983	TAIWN-G	1000	49	0	