Cypress Semiconductor
Mold Compound Qualification Report

QTP# 002403 VERSION 1.0
January, 2001

Sumitomo EME 7320 Mold Compound
Thin Quad Flat Pack, (TQFP), MSL3
ASE Taiwan

CYPRESS TECHNICAL CONTACT FOR QUALIFICATION DATA:

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PRODUCT QUALIFICATION HISTORY

Qual Report		Description of Qualification Purpose		Date Comp.
000303		Qualify EME 7320 Molding Compound, 160-lead TQFP Package, ASE Taiwan (TAIWN-G)		Feb 00
002403		Qualify EME 7320 Molding Compound, 100-lead TQFP (14 x 14 x 1.4mm), 144-lead (20 x 20 x x1.4mm) and 128-lead (14 x x20 x 1.4mm) Package, ASE Taiwan (TAIWN-G)		Nov 00

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:	Sumitomo EME 7320
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
Die Backside Preparation Method/Metallization:	N/A
Die Separation Method:	Wafer Saw
Die Attach Supplier:	Ablestik
Die Attach Material:	Ablestik 8361
Bond Diagram Designation	10-03379
Wire Bond Method:	Thermosonic
Wire Material/Size:	Gold/ 1.3mil
Thermal Resistance Theta JA °C/W:	60°C/W
Package Cross Section Yes/No:	N/A
Assembly Process Flow:	49-41006
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.

MAJOR PACKAGE INFORMATION USED IN THIS QUALIFICATION	
Package Designation:	A128
Package Outline, Type, or Name:	128-pin Thin Quad Flat Pack (TQFP)
Mold Compound Name/Manufacturer:	Sumitomo EME 7320
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
Die Backside Preparation Method/Metallization:	N/A
Die Separation Method:	Wafer Saw
Die Attach Supplier:	Ablestik
Die Attach Material:	Ablestik 8361
Bond Diagram Designation	10-03587
Wire Bond Method:	Thermosonic
Wire Material/Size:	Gold/ 1.0mil
Thermal Resistance Theta JA °C/W:	45°C/W
Package Cross Section Yes/No:	N/A
Assembly Process Flow:	49-41006
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.

MAJOR PACKAGE INFORMATION USED IN THIS QUALIFICATION	
Package Designation:	A144
Package Outline, Type, or Name:	144-pin Thin Quad Flat Pack (TQFP)
Mold Compound Name/Manufacturer:	Sumitomo EME 7320
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
Die Backside Preparation Method/Metallization:	N/A
Die Separation Method:	Wafer Saw
Die Attach Supplier:	Ablestik
Die Attach Material:	Ablestik 8361
Bond Diagram Designation	10-03561
Wire Bond Method:	Thermosonic
Wire Material/Size:	Gold/ 1.3mil
Thermal Resistance Theta JA °C/W:	42°C/W
Package Cross Section Yes/No:	N/A
Assembly Process Flow:	49-41006
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 REQUIREMENT

Stress/Test	Test Condition (Temp/Bias)	Result P/F
High Accelerated Saturation Test	1) QTP #002403, QTP #000303 Bias : 5.5V, 130°C, 85%RH Precondition: JESD22 Moisture Sensitivity Level 3 192 Hrs., 30°C/60%RH	P
Temperature Cycle	1) QTP #002403, QTP #000303 MIL-STD-883C, Method 1010, Condition C, -65°C to 150°C Precondition: JESD22 Moisture Sensitivity Level 3 192 Hrs., 85°C/85%RH	P
High Temperature Storage	1) QTP #000303 165C, no bias	P
Thermal Shock	1) QTP #000303 Cypress Spec 25-00014	P
Acoustic Microscopy, Level 3	1) QTP #002403, QTP #000303 Cypress Spec. 25-00104	P
X-Ray	1) QTP #000303 Cypress Spec 12-00292	P

Reliability Test Data

QTP #: 002403

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
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							
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	

Reliability Test Data

QTP #: 000303

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: ACOUSTIC							
CY7C375I-AC	2901582	*619909347*	TAIWN-G	COMP	15	0	
CY7C375I-AC	2902720	*619909600*	TAIWN-G	COMP	15	0	
CY7C375I-AC	2902720	*619909601*	TAIWN-G	COMP	15	0	
STRESS: HI-ACCEL SATURATION TEST (130C, 85%RH, 5.5V)PRE COND 192 HR 30C/60%RH							
CY7C375I-AC	2902720	*619909600*	TAIWN-G	128	24	0	
STRESS: HIGH TEMP STORAGE, PLASTIC, 165C							
CY7C375I-AC	2901582	*619909347*	TAIWN-G	336	50	0	
STRESS: TC CONDITION C, -65C TO 150C, PRE COND. 192 HRS 30C/60% RH (MSL3)							
CY7C375I-AC	2901582	*619909347*	TAIWN-G	300	50	0	
CY7C375I-AC	2901582	*619909347*	TAIWN-G	500	48	0	
CY7C375I-AC	2901582	*619909347*	TAIWN-G	1000	48	0	
CY7C375I-AC	2902720	*619909600*	TAIWN-G	300	50	0	
CY7C375I-AC	2902720	*619909600*	TAIWN-G	500	50	0	
CY7C375I-AC	2902720	*619909600*	TAIWN-G	1000	49	0	
CY7C375I-AC	2902720	*619909601*	TAIWN-G	300	50	0	
CY7C375I-AC	2902720	*619909601*	TAIWN-G	500	50	0	
CY7C375I-AC	2902720	*619909601*	TAIWN-G	1000	50	0	
STRESS: THERMAL SHOCK, CONDITION B (150C, -55C)							
CY7C375I-AC	2901582	*619909347*	TAIWN-G	100	50	0	
CY7C375I-AC	2901582	*619909347*	TAIWN-G	200	50	0	
STRESS: X-RAY (EXAMPLE: LOOKING FOR WIRE-SWEEP)							
CY7C375I-AC	2901582	*619909347*	TAIWN-G	COMP	15	0	