Cypress Semiconductor
Package Qualification Report

QTP# 022504 VERSION 1.0
November, 2002

16-lead TSSOP package using
SHINETSU KMC-184-3 Mold Compound, MSL1
Signetics Korea (KOREA-SI)

CYPRESS TECHNICAL CONTACT FOR QUALIFICATION DATA:

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PRODUCT QUALIFICATION HISTORY

Qual Report		Description of Qualification Purpose		Date Comp
I000001		20-lead TSSOP package (173ml) with die size ≤ 120 x 131mls, MSL1 assembled at Signetics Korea (Korea-SI)		Apr 98
022504		16-lead (173ml) TSSOP with die size ≤ 71.9 x 95.9mls		Oct 02

MAJOR PACKAGE INFORMATION USED IN THIS QUALIFICATION	
Package Designation:	Z1617
Package Outline, Type, or Name:	16-lead Thin Small Outline Package (TSSOP)
Mold Compound Name/Manufacturer:	SHINETSU KMC - 184-3
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:	8390
Die Attach Method:	Epoxy
Bond Diagram Designation	10-03613
Wire Bond Method:	Thermosonic
Wire Material/Size:	Au, 1.0 Mil
Thermal Resistance Theta JA °C/W:	116.8°C/W
Package Cross Section Yes/No:	N/A
Assembly Process Flow:	49-79003
Name/Location of Assembly (prime) facility:	Signetice Korea (KOREA-SI)

ELECTRICAL TEST / FINISH DESCRIPTION	
Test Location:	Signetice Korea (KOREA-SI)
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	1) QTP #022504, QTP #I000001 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, 235°C+5, -0°C	P
Pressure Cooker	1) QTP #022504, QTP #I000001 121°C, 100%RH Precondition: JESD22 Moisture Sensitivity MSL 1 168 Hrs., 85°C/85%RH+3IR-Reflow, 235°C+5, -0°C	P
Physical Dimensions	1) QTP #I000001 Cypress Spec. 25-00031	P
Resistance to Solvents	1) QTP #I000001 MIL STD-883C, Method 2015	P
Solderability	1) QTP #I000001 Cypress Spec. 25-00018	P
Coplanarity	1) QTP #I000001 JEDEC Spec. Max = 4 mils	P
High Temperature Storage	1) QTP #022504 150C, no bias	P
Internal Visual	1) QTP #022504 Cypress Spec. 12-00292	P
Internal Visual	1) QTP #022504 Cypress Spec. 12-00292	P
Die Shear	1) QTP #022504 Cypress Spec. 12-00292	P
Bond Pull	1) QTP #022504 Cypress Spec. 12-00292	P
Ball Shear	1) QTP #022504 Cypress Spec. 12-00292	P
Acoustic Microscopy, MSL1	1) QTP #022504 Cypress Spec. 25-00104	P
X-Ray	1) QTP #022504 MIL-STD-883C, Method 2012 / Cypress Spec 12-00292	P

Reliability Test Data

QTP #: 022504

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: ACOUSTIC, MSL1							
CY7C2250ZC (7C841400A)		*IMIC16890.1*	KOREA-SI	COMP	15	0	
CY7C2250ZC (7C841400A)		*IMIC16891.1*	KOREA-SI	COMP	15	0	
CY7C2250ZC (7C841400A)		*IMIC16892.1*	KOREA-SI	COMP	15	0	
STRESS: HIGH TEMPERATURE STORAGE, 150C							
CY7C2250ZC (7C841400A)		*IMIC16890.1*	KOREA-SI	500	45	0	
CY7C2250ZC (7C841400A)		*IMIC16890.1*	KOREA-SI	1000	45	0	
STRESS: BALL SHEAR							
CY7C2250ZC (7C841400A)		*IMIC16890.1*	KOREA-SI	COMP	30	0	
STRESS: BOND PULL							
CY7C2250ZC (7C841400A)		*IMIC16890.1*	KOREA-SI	COMP	30	0	
STRESS: PHYSICAL DIMENSION							
CY7C2250ZC (7C841400A)		*IMIC16890.1*	KOREA-SI	COMP	5	0	
CY7C2250ZC (7C841400A)		*IMIC16891.1*	KOREA-SI	COMP	5	0	
CY7C2250ZC (7C841400A)		*IMIC16892.1*	KOREA-SI	COMP	5	0	
STRESS: DIE SHEAR							
CY7C2250ZC (7C841400A)		*IMIC16890.1*	KOREA-SI	COMP	10	0	
STRESS: INTERNAL VISUAL							
CY7C2250ZC (7C841400A)		*IMIC16890.1*	KOREA-SI	COMP	5	0	
CY7C2250ZC (7C841400A)		*IMIC16891.1*	KOREA-SI	COMP	5	0	
CY7C2250ZC (7C841400A)		*IMIC16892.1*	KOREA-SI	COMP	5	0	
STRESS: EXTERNAL VISUAL							
CY7C2250ZC (7C841400A)		*IMIC16890.1*	KOREA-SI	COMP	200	0	

Reliability Test Data

QTP #: 022504

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: X-RAY							
CY7C2250ZC (7C841400A)		*IMIC16890.1*	KOREA-SI	COMP	15	0	
STRESS PRESSURE COOKER TEST, 121C, 100%RH, PRE COND 168 HR 85C/85%RH, MSL1							
CY7C2250ZC (7C841400A)		*IMIC16890.1*	KOREA-SI	168	45	0	
CY7C2250ZC (7C841400A)		*IMIC16891.1*	KOREA-SI	168	45	0	
STRESS: TC CONDITION C, -65C TO 150C, PRE COND. 168 HRS., 85C/85%RH, MSL1							
CY7C2250ZC (7C841400A)		*IMIC16890.1*	KOREA-SI	300	45	0	
CY7C2250ZC (7C841400A)		*IMIC16890.1*	KOREA-SI	500	45	0	
CY7C2250ZC (7C841400A)		*IMIC16890.1*	KOREA-SI	1000	45	0	
CY7C2250ZC (7C841400A)		*IMIC16891.1*	KOREA-SI	300	45	0	
CY7C2250ZC (7C841400A)		*IMIC16891.1*	KOREA-SI	500	45	0	
CY7C2250ZC (7C841400A)		*IMIC16891.1*	KOREA-SI	1000	45	0	
CY7C2250ZC (7C841400A)		*IMIC16892.1*	KOREA-SI	300	45	0	
CY7C2250ZC (7C841400A)		*IMIC16892.1*	KOREA-SI	500	45	0	
CY7C2250ZC (7C841400A)		*IMIC16892.1*	KOREA-SI	1000	45	0	

Reliability Test Data

QTP #: I000001

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: SOLDERABILITY							
IMISM530ZC (7C8SM530B)	F4461	F4461	KOREA-SI	COMP	5	0	
STRESS: COPLANARITY							
IMISM530ZC (7C8SM530B)	F4461	F4461	KOREA-SI	COMP	20	0	
STRESS: RESISTANCE TO SOLVENTS							
IMISM530ZC (7C8SM530B)	F4461	F4461	KOREA-SI	COMP	12	0	
STRESS: PHYSICAL DIMENSION							
IMISM530ZC (7C8SM530B)	F4461	F4461	KOREA-SI	COMP	12	0	
STRESS: STRESS: PRESSURE COOKER TEST, 121C, 100%RH, , PRE COND 168 HR 85C/85%RH, MSL 1							
IMISM530ZC (7C8SM530B)	F4461	F4461	KOREA-SI	168	45	0	
STRESS: TC COND. C -65C TO 150C, , PRE COND 168 HR 85C/85%RH, MSL 1							
IMISM530ZC (7C8SM530B)	F4461	F4461	KOREA-SI	500	76	0	