

# **Cypress Semiconductor Package Qualification Report**

**QTP# 013206 VERSION 1.0  
February, 2002**

**Assembly site OSE Philippines for  
28-lead SOIC Package**

**CYPRESS TECHNICAL CONTACT FOR QUALIFICATION DATA:**

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**PACKAGE QUALIFICATION HISTORY**

<b>QUAL REPORT</b>	<b>DESCRIPTION OF QUALIFICATION PURPOSE</b>	<b>DATE COMP.</b>
013206	Assembly site OSE Philippines for 28-lead (300mil) SOIC package with die size $\leq 98.6 \times 90.0$ mil, MSL1	Jan 02

<b>MAJOR PACKAGE INFORMATION USED IN THIS QUALIFICATION</b>	
<b>Package Designation:</b>	S283
<b>Package Outline, Type, or Name:</b>	28-lead Small Outline IC package (SOIC)
<b>Mold Compound Name/Manufacturer:</b>	Sumitomo EME6300H
<b>Mold Compound Flammability Rating:</b>	V-O per UL94
<b>Oxygen Rating Index:</b>	> 28%
<b>Lead Frame Material:</b>	Copper
<b>Lead Finish, Composition / Thickness:</b>	Solder Plate, 85%Pb, 15%Sn
<b>Die Backside Preparation Method/Metallization:</b>	N/A
<b>Die Separation Method:</b>	Wafer Saw
<b>Die Attach Supplier:</b>	Ablestik
<b>Die Attach Material:</b>	84-1LMISR4
<b>Die Attach Method:</b>	Silver Epoxy
<b>Bond Diagram Designation</b>	10-02900
<b>Wire Bond Method:</b>	Thermosonic
<b>Wire Material/Size:</b>	Gold, 1.0mil
<b>Thermal Resistance Theta JA °C/W:</b>	60.78°C/W
<b>Package Cross Section Yes/No:</b>	N/A
<b>Assembly Process Flow:</b>	49-65999
<b>Name/Location of Assembly (prime) facility:</b>	OSE Philippines PHIL-OP)

<b>ELECTRICAL TEST / FINISH DESCRIPTION</b>	
<b>Test Location:</b>	OSE Philippines PHIL-OP)
<b>Fault Coverage:</b>	100%

**Note:** Please contact a Cypress Representative for other packages availability

**RELIABILITY TESTS PERFORMED PER SPECIFICATION REQUIREMENT**

<b>Stress/Test</b>	<b>Test Condition (Temp/Bias)</b>	<b>Result P/F</b>
Temperature Cycle	MIL-STD-883C, Method 1010, Condition C, -65°C to 150°C Precondition: JESD22 Moisture Sensitivity MSL1 168 Hrs., 85°C/85%RH+ 3IR-Reflow, 220°C+ 5, -0°C	P
High Accelerated Saturation Test	130°C, 85%RH, 5.5V Precondition: JESD22 Moisture Sensitivity MSL1 168 Hrs., 85°C/85%RH+ 3IR-Reflow, 220°C+ 5, -0°C	P
Pressure Cooker Test	No bias, 121°C, 100%, Precondition: JESD22 Moisture Sensitivity MSL1 168 Hrs., 85°C/85%RH+ 3IR-Reflow, 220°C+ 5, -0°C	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
Internal Visual	Cypress Spec 12-00292	P
External Visual	Cypress Spec 12-00292	P
Ball Shear	Cypress Spec 12-00292	P
Bond Pull	Cypress Spec 12-00292	P
Die Shear	Cypress Spec 12-00292	P
High Temperature Storage	150°C, no bias	P
Thermal Shock	125C, -55C	P
Physical Dimensions	Cypress Spec 25-00031	P
Solderability	Cypress Spec 25-00018	P
X-Ray	MIL-STD-883C, Method 2012, Cypress Spec 12-00292	P
Acoustic MSL1	Cypress Spec 25-00104	P

## Reliability Test Data

QTP #: 013206

<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>
<b>STRESS: ACOUSTIC - MICROSCOPE MSL1</b>							
CY7C185-SC (7C185N)	2049089	610132120	PHIL-OP	COMP	20	0	
CY7C185-SC (7C185N)	2049089	610132120M	PHIL-OP	COMP	20	0	
CY7C185-SC (7C185N)	2049089	610132120M1	PHIL-OP	COMP	20	0	
<b>STRESS: INTERNAL VISUAL</b>							
CY7C185-SC (7C185N)	2049089	610132120	PHIL-OP	COMP	5	0	
<b>STRESS: EXTERNAL VISUAL</b>							
CY7C185-SC (7C185N)	2049089	610132120	PHIL-OP	COMP	15	0	
<b>STRESS: PHYSICAL DIMENSIONS</b>							
CY7C185-SC (7C185N)	2049089	610132120	PHIL-OP	COMP	5	0	
<b>STRESS: SOLERABILITY</b>							
CY7C185-SC (7C185N)	2049089	610132120	PHIL-OP	COMP	5	0	
<b>STRESS: THERMAL SHOCK, 125C, -55C</b>							
CY7C185-SC (7C185N)	2049089	610132120	PHIL-OP	100	47	0	
CY7C185-SC (7C185N)	2049089	610132120	PHIL-OP	200	47	0	
<b>STRESS: HIGH TEMPERATURE STORAGE, 150C</b>							
CY7C185-SC (7C185N)	2049089	610132120	PHIL-OP	500	50	0	
<b>STRESS: BALL SHEAR</b>							
CY7C185-SC (7C185N)	2049089	610132120	PHIL-OP	COMP	100	0	
<b>STRESS: BOND PULL</b>							
CY7C185-SC (7C185N)	2049089	610132120	PHIL-OP	COMP	100	0	
<b>STRESS: DIE SHEAR</b>							
CY7C185-SC (7C185N)	2049089	610132120	PHIL-OP	COMP	15	0	

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<b>STRESS: X-RAY</b>							
CY7C185-SC (7C185N)	2049089	610132120	PHIL-OP	COMP	15	0	
<b>STRESS: ESD-HBM DONE, 2,200V</b>							
CY7C185-SC (7C185N)	2049089	610132120	PHIL-OP	COMP	9	0	
<b>STRESS: ESD-CDM DONE, 500V</b>							
CY7C185-SC (7C185N)	2049089	610132120	PHIL-OP	COMP	9	0	
<b>STRESS: HI-ACCEL SATURATION TEST. 130C, 5.5V, 85%RH, PRE COND 168 HR 85C/85%RH, MSL 1</b>							
CY7C185-SC (7C185N)	2049089	610132120	PHIL-OP	128	47	0	
<b>STRESS: STRESS: PRESSURE COOKER TEST, 121C, 100%RH, PRE COND 168 HR 85C/85%RH</b>							
CY7C185-SC (7C185N)	2049089	610132120	PHIL-OP	168	50	0	
CY7C185-SC (7C185N)	2049089	610132120M	PHIL-OP	168	49	0	
CY7C185-SC (7C185N)	2049089	610132120M1	PHIL-OP	COMP	50	0	
<b>STRESS: TC COND. C -65C TO 150C, PRECONDITION 168 HRS 85C/85%RH, MSL</b>							
CY7C185-SC (7C185N)	2049089	610132120	PHIL-OP	300	49	0	
CY7C185-SC (7C185N)	2049089	610132120M	PHIL-OP	300	50	0	
CY7C185-SC (7C185N)	2049089	610132120M1	PHIL-OP	300	50	0	