

Cypress Semiconductor Package Qualification Report

**QTP# 052802 VERSION 1.0
September 2005**

**≤56-Lead TSSOP Package
NiPdAu, MSL1, 260°C Reflow
Cypress Philippines (CML-R)**

CYPRESS TECHNICAL CONTACT FOR QUALIFICATION DATA:

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PACKAGE QUALIFICATION HISTORY

| QUAL REPORT | DESCRIPTION OF QUALIFICATION PURPOSE | DATE COMP. |
|--------------------|---|-------------------|
| 021501 | 260C Solder reflow peak for all 16/48/56-Lead TSSOP package, MSL1, using Hitachi CEL9200CYR/IV77 M/C and Cu Lead frame assembled at CML-R | May 02 |
| 052802 | 56-Lead TSSOP using Modified Bottom Tool Cavity Chase, NiPdAu Pre-Plated Frame, MSL1, 260C Reflow at CML Conventional Line, No Dry Bake Process | Jul 05 |

| MAJOR PACKAGE INFORMATION USED IN THIS QUALIFICATION | |
|---|---|
| Package Designation: | ZZ56 |
| Package Outline, Type, or Name: | 56-Lead Thin Small Shrunken Outline Package (TSSOP) |
| Mold Compound Name/Manufacturer: | Hitachi CEL9200CYR |
| Mold Compound Flammability Rating: | V-O |
| Oxygen Rating Index: | N/A |
| Lead Frame Material: | Copper |
| Lead Finish, Composition / Thickness: | Ni/Pd/Au |
| Die Backside Preparation Method/Metallization: | Backgrind |
| Die Separation Method: | Sawing |
| Die Attach Supplier: | Dexter |
| Die Attach Material: | QMI 509 |
| Die Attach Method: | Dispensing |
| Bond Diagram Designation | 10-05928 |
| Wire Bond Method: | Thermosonic |
| Wire Material/Size: | Au. 0.8mil |
| Thermal Resistance Theta JA °C/W: | 53°C/W |
| Package Cross Section Yes/No: | N/A |
| Assembly Process Flow: | 11-20047 |
| Name/Location of Assembly (prime) facility: | Cypress Philippines (CML-R) |

| ELECTRICAL TEST / FINISH DESCRIPTION | |
|---|-----------------------------|
| Test Location: | Cypress Philippines (CML-R) |
| 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 |
|---|---|---------------|
| Pressure Cooker Test | 121°C, 100% RH Precondition: JESD22 Moisture Sensitivity Level 1 168 Hrs, 85°C/85%RH+3IR-Reflow, 220°C+0, -5°C 168 Hrs, 85°C/85%RH+3IR-Reflow, 260°C+0, -5°C | P |
| High Accelerated Saturation Test (HAST) | 130°C, 3.3V, 85%RH Precondition: JESD22 Moisture Sensitivity MSL 1 168 Hrs, 85°C/85%RH+3IR-Reflow, 220°C+0, -5°C 168 Hrs, 85°C/85%RH+3IR-Reflow, 260°C+0, -5°C | P |
| Temperature Cycle | 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, 220°C+0, -5°C 168 Hrs, 85°C/85%RH+3IR-Reflow, 260°C+0, -5°C | P |
| Acoustic Microscopy Test | Cypress Spec. 25-00104 | P |

Reliability Test Data

QTP #: 021501

| Device | Fab Lot # | Assy Lot # | Assy Loc | Duration | Samp | Rej | Failure Mechanism |
|--|------------------|-------------------|-----------------|-----------------|-------------|------------|--------------------------|
| STRESS: ACOUSTIC, MSL1 | | | | | | | |
| IMIC9870LZC (7C8C9870L) | 9202717 | 610204205 | CML-R | COMP | 15 | 0 | |
| IMIC9870LZC (7C8C9870L) | 9202717 | 610204205M | CML-R | COMP | 15 | 0 | |
| IMIC9870LZC (7C8C9870L) | 9202717 | 610204205M1 | CML-R | COMP | 15 | 0 | |
| STRESS: HI-ACCEL SATURATION TEST. 130C, 3.3V, 85%RH, PRE COND 168 HR 85C/85%RH, MSL 1 | | | | | | | |
| IMIC9870LZC (7C8C9870L) | 9202717 | 610204205 | CML-R | 128 | 47 | 0 | |
| STRESS: STRESS: PRESSURE COOKER TEST, 121C, 100%RH, PRE COND 168 HR 85C/85%RH, MSL 1 | | | | | | | |
| IMIC9870LZC (7C8C9870L) | 9202717 | 610204205 | CML-R | 192 | 43 | 0 | |
| STRESS: TC COND. C -65C TO 150C, PRE COND 168 HR 85C/85%RH, MSL 1 | | | | | | | |
| IMIC9870LZC (7C8C9870L) | 9202717 | 610204205 | CML-R | 300 | 47 | 0 | |
| IMIC9870LZC (7C8C9870L) | 9202717 | 610204205 | CML-R | 500 | 47 | 0 | |
| IMIC9870LZC (7C8C9870L) | 9202717 | 610204205M | CML-R | 300 | 50 | 0 | |
| IMIC9870LZC (7C8C9870L) | 9202717 | 610204205M | CML-R | 500 | 50 | 0 | |
| IMIC9870LZC (7C8C9870L) | 9202717 | 610204205M1 | CML-R | 300 | 50 | 0 | |
| IMIC9870LZC (7C8C9870L) | 9202717 | 610204205M1 | CML-R | 500 | 50 | 0 | |

Reliability Test Data

QTP #: 052802

| Device | Fab Lot # | Assy Lot # | Assy Loc | Duration | Samp | Rej | Failure Mechanism |
|---|------------------|-------------------|-----------------|-----------------|-------------|------------|--------------------------|
| STRESS: ACOUSTIC - MICROSCOPE, MSL1 | | | | | | | |
| CY28411ZXCT (7C828411D) | 4453460 | 610511659 | CML-R | COMP | 15 | 0 | |
| CY28411ZXCT (7C828411D) | 4453460 | 610511713 | CML-R | COMP | 15 | 0 | |
| CY28411ZXCT (7C828411D) | 4453460 | 610511484 | CML-R | COMP | 15 | 0 | |
| STRESS: PRESSURE COOKER TEST, 121C, 100%RH, PRE COND 168HRS, 85C/85%RH, MSL1 | | | | | | | |
| CY28411ZXCT (7C828411D) | 4453460 | 610511659 | CML-R | 168 | 49 | 0 | |
| STRESS: TC COND. C -65C TO 150C, PRE COND 168 HR, 85C/85%RH, MSL1 | | | | | | | |
| CY28411ZXCT (7C828411D) | 4453460 | 610511659 | CML-R | 300 | 46 | 0 | |
| CY28411ZXCT (7C828411D) | 4453460 | 610511659 | CML-R | 500 | 46 | 0 | |
| CY28411ZXCT (7C828411D) | 4453460 | 610511713 | CML-R | 300 | 47 | 0 | |
| CY28411ZXCT (7C828411D) | 4453460 | 610511713 | CML-R | 500 | 47 | 0 | |
| CY28411ZXCT (7C828411D) | 4453460 | 610511484 | CML-R | 300 | 45 | 0 | |
| CY28411ZXCT (7C828411D) | 4453460 | 610511484 | CML-R | 500 | 45 | 0 | |