



Cypress Semiconductor Corporation, 198 Champion Court, San Jose, CA 95134. Tel: (408) 943-2600

## PRODUCT CHANGE NOTIFICATION

**PCN:** PCN182401

**Date:** June 13, 2018

**Subject:** Qualification of OSE-T as an Additional Assembly Site for Select Automotive Products

**To:** FUTURE ELECTRONICS  
 FUTURE ELE  
 pcn.system@futureelectronics.com

**Change Type:** Major

### Description of Change:

Cypress announces the qualification of Orient Semiconductor Electronics, Taiwan (OSE-T) as an additional assembly site for select automotive products. These products are RoHS and REACH compliant. These products are assembled in the following package configurations.

The 28-Lead TSOP I (8x13.4x1.2mm) Pb-Free packages are assembled at OSE-T using the following Bill of Materials:

| Material            | OSE-T Bill of Materials | JCET Bill of Materials |
|---------------------|-------------------------|------------------------|
| Mold Compound       | Sumitomo EMEG631SH      | Kyocera G6000DA        |
| Leadfinish          | Pure Sn                 | NiPdAu                 |
| Die Attach Material | Sumitomo CRM-1076WA     | Henkel QMI-509         |
| Bond Wire           | 0.8 mil Au              | 1.0 mil Au             |

The 32-Lead TSOP I (8x13.4x1.2mm) Pb-Free packages are assembled at OSE-T using the following Bill of Materials:

| Material         | OSE-T Bill of Materials | JCET Bill of Materials |
|------------------|-------------------------|------------------------|
| Mold Compound    | Sumitomo EMEG631SH      | Kyocera G6000DA        |
| Leadfinish       | Pure Sn                 | NiPdAu                 |
| Die Attach Epoxy | Sumitomo CRM-1076WA     | Henkel QMI-509         |
| Bond Wire        | 0.8 mil Au              | 1.0 mil Au             |

The 44-Lead TSOP II (11x18.5x1.2mm) Pb-Free packages are assembled at OSE-T using the following Bill of Materials:

| Material         | OSE-T Bill of Materials | JCET Bill of Materials |
|------------------|-------------------------|------------------------|
| Mold Compound    | Sumitomo EMEG631SH      | Kyocera KEG6000DA      |
| Leadfinish       | Pure Sn                 | NiPdAu PPF             |
| Die Attach Epoxy | Sumitomo CRM1076WA      | Henkel QMI509          |
| Bond Wire        | 0.8 mil Au              | 0.8 / 0.9 / 1.0 mil Au |

The 48-Lead SSOP (7.50x15.87x2.60mm) Pb-Free packages are assembled at OSE-T using the following Bill of Materials:

| Material         | OSE-T Bill of Materials | JCET Bill of Materials |
|------------------|-------------------------|------------------------|
| Mold Compound    | Sumitomo EMEG700SLA     | Kyocera KEG6000DA      |
| Leadfinish       | Pure Sn                 | NiPdAu                 |
| Die Attach Epoxy | Sumitomo CRM1076WA      | Henkel QMI509          |
| Bond Wire        | 0.8 mil Au              | 1.0 mil Au             |

The 32-Lead SOIC (11.30x20.45x3.00mm) Pb-Free packages are assembled at OSE-T using the following Bill of Materials:

| Material         | OSE-T Bill of Materials | JCET Bill of Materials |
|------------------|-------------------------|------------------------|
| Mold Compound    | Sumitomo EMEG631SH      | Kyocera KEG6000DA      |
| Leadfinish       | Pure Sn                 | NiPdAu                 |
| Die Attach Epoxy | Sumitomo CRM1076WA      | Henkel QMI509          |
| Bond Wire        | 0.8 mil Au              | 1.0 mil Au             |

**Benefit of Change:**

Qualification of alternate manufacturing sites is part of the ongoing flexible manufacturing initiative announced by Cypress. The goal of the flexible manufacturing initiative is to provide the means for Cypress to continue to meet delivery commitments through dynamic, changing market conditions.

**Part Numbers Affected: 118**

See the attached 'Affected Parts List' file for a list of all part numbers affected by this change. Note that any new parts that are introduced after the publication of this PCN will include all changes outlined in this PCN.

**Qualification Status:**

These assembly sites have been qualified through a series of tests documented in the Qualification Test Plans summarized in the table below. These qualification reports can be found as attachments to this PCN or by visiting [www.cypress.com](http://www.cypress.com) and typing the QTP number in the keyword search window.

| QTP Number | Qualification Reports                               |
|------------|---|
| 180411     | OSE Taiwan as Additional Assembly Site 28-Lead TSOP |
| 180418     | OSE Taiwan as Additional Assembly Site 32-Lead TSOP |
| 175106     | OSE Taiwan as Additional Assembly Site 44-Lead TSOP |
| 175107     | OSE Taiwan as Additional Assembly Site 44-Lead TSOP |
| 180301     | OSE Taiwan as Additional Assembly Site 48-Lead SSOP |
| 180705     | OSE Taiwan as Additional Assembly Site 32-Lead SOIC |

**Sample Status:**

Qualification samples may not be built ahead of time for all part numbers affected by this change. Please review the attached 'Affected Parts List' file for a list of affected part numbers with their associated OSE sample ordering part numbers. Samples are available now unless there is an indication that the sample ordering part numbers are subject to lead times. If you require qualification samples, please contact your local Cypress sales representative as soon as possible, preferably within 30 days of the date of this PCN, to place any sample orders.

**Approximate Implementation Date:**

Effective 90 days from the date of this notification or upon customer approval, whichever comes first, all shipments of Automotive non-PPAP part numbers in the attached file will be assembled at OSE-T or other approved assembly sites.

For Automotive PPAP part numbers this change will be effective upon customer approval.

**Anticipated Impact:**

Products assembled at the new site are completely compatible with existing products from form, fit, functional, parametric and quality performance perspectives.

Cypress also recommends that customers take this opportunity to review these changes against current application notes, system design considerations and customer environment conditions to assess impact (if any) to their application.

**Method of Identification:**

Cypress maintains traceability of product to wafer level, including wafer fabrication location, through the lot number marked on the package.

**Response Required:**

No response is required.

For additional information regarding this change, contact your local sales representative or contact the PCN Administrator at [pcn\\_adm@cypress.com](mailto:pcn_adm@cypress.com).

Sincerely,

Cypress PCN Administration

# Cypress Semiconductor Automotive Package Qualification Report

**QTP# 180301 VERSION \*\*  
May 2018**

**48-lead SSOP (300mils)  
Matte Sn leadfinish, Au Wire  
MSL3, 260C Reflow  
OSE-Taiwan (T)**

**FOR ANY QUESTIONS ON THIS REPORT, PLEASE CONTACT  
[reliability@cypress.com](mailto:reliability@cypress.com) or via a CYLINK CRM CASE**

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Reliability Director

**PACKAGE QUALIFICATION HISTORY**

| <b>QTP Number</b> | <b>Description of Qualification Purpose</b>  | <b>Date</b> |
|-------------------|--|-------------|
| 180301            | Qualification of Automotive 48-lead SSOP (300mils) Package in OSE-Taiwan (T) using 0.8mil Au wire with G700SLA mold compound, CRM-1076WA die attach material, Copper leadframe and Matte Sn leadfinish at MSL3, 260C Reflow Temperature. | May 2018    |

| <b>MAJOR PACKAGE INFORMATION USED IN THIS QUALIFICATION</b> |  |
|---|--|
| Package Designation:  | SP48                                   |
| Package Outline, Type, or Name:                             | 48-lead SSOP (300mils)                 |
| Mold Compound Name/Manufacturer:                            | EME-G700SLA / Sumitomo                 |
| Mold Compound Flammability Rating:                          | V-0 / UL-94                            |
| Mold Compound Alpha Emission Rate:                          | 0.001CPH/cm2 (low alpha mold compound) |
| Oxygen Rating Index: 28                                     | 54                                     |
| Lead Frame Designation:                                     | RMP                                    |
| Lead Frame Material:  | Copper                                 |
| Substrate Material:   | N/A                                    |
| Lead Finish, Composition / Thickness:                       | Matte Sn                               |
| Die Backside Preparation Method/Metallization:              | Backgrind                              |
| Die Separation Method:                                      | Wafer Saw                              |
| Die Attach Supplier:  | Sumitomo                               |
| Die Attach Material:  | CRM-1076WA                             |
| Bond Diagram Designation                                    | 002-21879 / 002-21878                  |
| Wire Bond Method:   | Thermosonic                            |
| Wire Material/Size:   | Au / 0.8mil (20um)                     |
| Thermal Resistance Theta JA °C/W:                           | 34 C/W                                 |
| Package Cross Section Yes/No:                               | No                                     |
| Assembly Process Flow:                                      | 49-35999M                              |
| Name/Location of Assembly (prime) facility:                 | OSE-Taiwan (T)                         |
| MSL LEVEL   | 3                                      |
| REFLOW PROFILE  | 260C                                   |

| <b>ELECTRICAL TEST / FINISH DESCRIPTION</b> |       |
|---|-------|
| Test Location:                              | CML-R |

**Note:** Please contact a Cypress Representative for other package availability.

## RELIABILITY TESTS PERFORMED PER SPECIFICATION REQUIREMENTS

| Stress/Test  | Test Condition<br>(Temp/Bias)  | Result<br>P/F |
|--|--|---------------|
| High Temperature Operating Life<br>Early Failure Rate    | AEC-Q100-008 and JESD22-A108, 125 C<br>Dynamic Operating Condition, Vcc Max 5.5V   | P             |
| High Temperature Operating Life<br>Latent Failure Rate   | JESD22-A108, 125 C<br>Dynamic Operating Condition, Vcc Max 5.5V  | P             |
| High Accelerated Saturation Test<br>(HAST)               | JESD22-A110, 130C, 5.5V, 85 RH<br>Precondition: JESD22-A113 Moisture Sensitivity MSL 3<br>192 Hrs, 30C/60 RH 3IR-Reflow, 260°C 0, -5°C     | P             |
| Temperature Cycle  | JESD22-A104, -65°C to 150°C<br>Precondition: JESD22-A113 Moisture Sensitivity MSL 3<br>192 Hrs, 30C/60 RH 3IR-Reflow, 260°C 0, -5°C        | P             |
| Pressure Cooker  | JESD22-A102, 121C, 100 RH, 15 Psig<br>Precondition: JESD22-A113 Moisture Sensitivity MSL 3<br>192 Hrs, 30C/60 RH 3IR-Reflow, 260°C 0, -5°C | P             |
| Acoustic   | J-STD-020<br>Precondition: JESD22-A113 Moisture Sensitivity MSL 3<br>192 Hrs, 30C/60 RH 3IR-Reflow, 260C 0, -5C                            | P             |
| Wire Bond Pull   | Mil-Std 883, Method 2011   | P             |
| Post Temperature Cycle Wire<br>Bond Pull                 | Mil-Std 883, Method 2011   | P             |
| Dye Penetrant Test                                       | Criteria: No Package Crack   | P             |
| Electrostatic Discharge Charge<br>Device Model (ESD-CDM) | AEC-Q100-011<br>250V/500V/ 750V / 1000V / 1250V (corner pins)  | P             |
| Electrostatic Discharge<br>Human Body Model (ESD-HBM)    | AEC-Q100-002<br>500V/1000V/2000V / 4000V   | P             |
| Electrical Distribution                                  | AEC-Q100-009   | P             |
| Wire Ball Shear  | AEC-Q100-001   | P             |
| Final Visual   | JESD22-B101B   | P             |
| Physical Dimensions                                      | JESD22B100 and B108  | P             |
| Constructional Analysis                                  | Criteria: Meet external and internal characteristics of Cypress package  | P             |
| Solderability  | JESD22-B102  | P             |



## Reliability Test Data

**QTP #: 180301**

| <i>Device</i>  | <i>Package</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, MSL3</b>  |                |                  |                   |                 |                 |             |            |                          |
| CY8C21645 (8A21645AK)  | SP483          | 4729900          | 611747855         | OSE-T           | COMP            | 22          | 0          |                          |
| CY8C29666 (8A29666AC)  | SP483          | 4722082          | 611747853         | OSE-T           | COMP            | 22          | 0          |                          |
| CY8C29666 (8A29666AC)  | SP483          | 4722082          | 611747854         | OSE-T           | COMP            | 22          | 0          |                          |
| <b>STRESS: BALL SHEAR</b>  |                |                  |                   |                 |                 |             |            |                          |
| CY8C21645 (8A21645AK)  | SP483          | 4729900          | 611747855         | OSE-T           | COMP            | 30          | 0          |                          |
| CY8C29666 (8A29666AC)  | SP483          | 4722082          | 611747853         | OSE-T           | COMP            | 30          | 0          |                          |
| CY8C29666 (8A29666AC)  | SP483          | 4722082          | 611747854         | OSE-T           | COMP            | 30          | 0          |                          |
| <b>STRESS: BOND PULL</b>   |                |                  |                   |                 |                 |             |            |                          |
| CY8C21645 (8A21645AK)  | SP483          | 4729900          | 611747855         | OSE-T           | COMP            | 30          | 0          |                          |
| CY8C29666 (8A29666AC)  | SP483          | 4722082          | 611747853         | OSE-T           | COMP            | 30          | 0          |                          |
| CY8C29666 (8A29666AC)  | SP483          | 4722082          | 611747854         | OSE-T           | COMP            | 30          | 0          |                          |
| <b>STRESS: CONSTRUCTIONAL ANALYSIS</b>   |                |                  |                   |                 |                 |             |            |                          |
| CY8C21645 (8A21645AK)  | SP483          | 4729900          | 611747855         | OSE-T           | COMP            | 5           | 0          |                          |
| CY8C29666 (8A29666AC)  | SP483          | 4722082          | 611747853         | OSE-T           | COMP            | 5           | 0          |                          |
| CY8C29666 (8A29666AC)  | SP483          | 4722082          | 611747854         | OSE-T           | COMP            | 5           | 0          |                          |
| <b>STRESS: DIE SHEAR</b>   |                |                  |                   |                 |                 |             |            |                          |
| CY8C21645 (8A21645AK)  | SP483          | 4729900          | 611747855         | OSE-T           | COMP            | 10          | 0          |                          |
| CY8C29666 (8A29666AC)  | SP483          | 4722082          | 611747853         | OSE-T           | COMP            | 10          | 0          |                          |
| CY8C29666 (8A29666AC)  | SP483          | 4722082          | 611747854         | OSE-T           | COMP            | 10          | 0          |                          |
| <b>STRESS: DYE PENETRANT</b>   |                |                  |                   |                 |                 |             |            |                          |
| CY8C21645 (8A21645AK)  | SP483          | 4729900          | 611747855         | OSE-T           | COMP            | 15          | 0          |                          |
| CY8C29666 (8A29666AC)  | SP483          | 4722082          | 611747853         | OSE-T           | COMP            | 15          | 0          |                          |
| CY8C29666 (8A29666AC)  | SP483          | 4722082          | 611747854         | OSE-T           | COMP            | 15          | 0          |                          |
| <b>STRESS: HIGH TEMP DYNAMIC OPERATING LIFE-EARLY FAILURE RATE, 125C, 2.07V, Vcc Max</b> |                |                  |                   |                 |                 |             |            |                          |
| CY8C21645 (8A21645AK)  | SP483          | 4729900          | 611747855         | OSE-T           | 96              | 800         | 0          |                          |
| CY8C29666 (8A29666AC)  | SP483          | 4722082          | 611747853         | OSE-T           | 96              | 800         | 0          |                          |
| CY8C29666 (8A29666AC)  | SP483          | 4722082          | 611747854         | OSE-T           | 96              | 800         | 0          |                          |





## Reliability Test Data

**QTP #: 180301**

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

**STRESS: ELECTRICAL DISTRIBUTION**

|                       |       |         |           |       |      |    |   |
|-----------------------|-------|---------|-----------|-------|------|----|---|
| CY8C21645 (8A21645AK) | SP483 | 4729900 | 611747855 | OSE-T | COMP | 30 | 0 |
| CY8C29666 (8A29666AC) | SP483 | 4722082 | 611747853 | OSE-T | COMP | 30 | 0 |
| CY8C29666 (8A29666AC) | SP483 | 4722082 | 611747854 | OSE-T | COMP | 30 | 0 |

**STRESS: ESD-CHARGE DEVICE MODEL**

|                       |       |         |           |       |     |   |   |
|-----------------------|-------|---------|-----------|-------|-----|---|---|
| CY8C21645 (8A21645AK) | SP483 | 4729900 | 611747855 | OSE-T | 250 | 3 | 0 |
| CY8C21645 (8A21645AK) | SP483 | 4729900 | 611747855 | OSE-T | 500 | 3 | 0 |
| CY8C21645 (8A21645AK) | SP483 | 4729900 | 611747855 | OSE-T | 750 | 3 | 0 |

**STRESS: ESD-HUMAN BODY CIRCUIT PER JESD22-A114-B**

|                       |       |         |           |       |      |   |   |
|-----------------------|-------|---------|-----------|-------|------|---|---|
| CY8C21645 (8A21645AK) | SP483 | 4729900 | 611747855 | OSE-T | 500  | 3 | 0 |
| CY8C21645 (8A21645AK) | SP483 | 4729900 | 611747855 | OSE-T | 1000 | 3 | 0 |
| CY8C21645 (8A21645AK) | SP483 | 4729900 | 611747855 | OSE-T | 2000 | 3 | 0 |

**STRESS: FINAL VISUAL INSPECTION**

|                       |       |         |           |       |      |      |   |
|-----------------------|-------|---------|-----------|-------|------|------|---|
| CY8C21645 (8A21645AK) | SP483 | 4729900 | 611747855 | OSE-T | COMP | 2049 | 0 |
| CY8C29666 (8A29666AC) | SP483 | 4722082 | 611747853 | OSE-T | COMP | 1519 | 0 |
| CY8C29666 (8A29666AC) | SP483 | 4722082 | 611747854 | OSE-T | COMP | 1446 | 0 |

**STRESS: HI-ACCEL SATURATION TEST, 130C, 5.5V, 85%RH, PRE COND 192 HR 30C/60%RH, MSL3**

|                       |       |         |           |       |    |    |   |
|-----------------------|-------|---------|-----------|-------|----|----|---|
| CY8C21645 (8A21645AK) | SP483 | 4729900 | 611747855 | OSE-T | 96 | 78 | 0 |
| CY8C29666 (8A29666AC) | SP483 | 4722082 | 611747853 | OSE-T | 96 | 80 | 0 |
| CY8C29666 (8A29666AC) | SP483 | 4722082 | 611747854 | OSE-T | 96 | 80 | 0 |

**STRESS: HIGH TEMP DYNAMIC OPERATING LIFE-LATENT FAILURE RATE, 125C, 5.5V, Vcc Max**

|                       |       |         |           |       |      |    |   |
|-----------------------|-------|---------|-----------|-------|------|----|---|
| CY8C21645 (8A21645AK) | SP483 | 4729900 | 611747855 | OSE-T | 1000 | 80 | 0 |
| CY8C29666 (8A29666AC) | SP483 | 4722082 | 611747853 | OSE-T | 1000 | 80 | 0 |
| CY8C29666 (8A29666AC) | SP483 | 4722082 | 611747854 | OSE-T | 1000 | 80 | 0 |

**STRESS: PRESSURE COOKER TEST**

|                       |       |         |           |       |    |    |   |
|-----------------------|-------|---------|-----------|-------|----|----|---|
| CY8C21645 (8A21645AK) | SP483 | 4729900 | 611747855 | OSE-T | 96 | 80 | 0 |
| CY8C29666 (8A29666AC) | SP483 | 4722082 | 611747853 | OSE-T | 96 | 80 | 0 |
| CY8C29666 (8A29666AC) | SP483 | 4722082 | 611747854 | OSE-T | 96 | 80 | 0 |



## Reliability Test Data

**QTP #: 180301**

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

**STRESS: PHYSICAL DIMENSION**

|                       |       |         |           |       |      |    |   |
|-----------------------|-------|---------|-----------|-------|------|----|---|
| CY8C21645 (8A21645AK) | SP483 | 4729900 | 611747855 | OSE-T | COMP | 10 | 0 |
| CY8C29666 (8A29666AC) | SP483 | 4722082 | 611747853 | OSE-T | COMP | 10 | 0 |
| CY8C29666 (8A29666AC) | SP483 | 4722082 | 611747854 | OSE-T | COMP | 10 | 0 |

**STRESS: POST TCT BOND PULL**

|                       |       |         |           |       |     |   |   |
|-----------------------|-------|---------|-----------|-------|-----|---|---|
| CY8C21645 (8A21645AK) | SP483 | 4729900 | 611747855 | OSE-T | 500 | 5 | 0 |
|-----------------------|-------|---------|-----------|-------|-----|---|---|

**STRESS: TC COND. C -65C TO 150C, PRECONDITION 192 HRS 30C/60%RH**

|                       |       |         |           |       |     |    |   |
|-----------------------|-------|---------|-----------|-------|-----|----|---|
| CY8C21645 (8A21645AK) | SP483 | 4729900 | 611747855 | OSE-T | 500 | 85 | 0 |
| CY8C29666 (8A29666AC) | SP483 | 4722082 | 611747853 | OSE-T | 500 | 80 | 0 |
| CY8C29666 (8A29666AC) | SP483 | 4722082 | 611747854 | OSE-T | 500 | 80 | 0 |

**STRESS: X-RAY**

|                       |       |         |           |       |      |    |   |
|-----------------------|-------|---------|-----------|-------|------|----|---|
| CY8C21645 (8A21645AK) | SP483 | 4729900 | 611747855 | OSE-T | COMP | 15 | 0 |
| CY8C29666 (8A29666AC) | SP483 | 4722082 | 611747853 | OSE-T | COMP | 15 | 0 |
| CY8C29666 (8A29666AC) | SP483 | 4722082 | 611747854 | OSE-T | COMP | 15 | 0 |



## Document History Page

Document Title: QTP 180301: AUTOMOTIVE 48-LEAD SSOP (300mils) MATTE SN LEADFINISH, AU WIRE  
MSL3, 260C REFLOW OSE-TAIWAN (T)  
Document Number: 002-24066

| Rev. | ECN No. | Orig. of Change | Description of Change |
|------|---------|-----------------|-----------------------|
| **   | 6188062 | HSTO            | Initial spec release  |

# Cypress Semiconductor Automotive Package Qualification Report

**QTP# 175106 VERSION \*\*  
May 2018**

**44-lead TSOP II (18.4x10.2mm)  
Pure Sn leadfinish, Au Wire  
MSL3, 260C Reflow  
OSE-Taiwan (T)**

**FOR ANY QUESTIONS ON THIS REPORT, PLEASE CONTACT  
[reliability@cypress.com](mailto:reliability@cypress.com) or via a CYLINK CRM CASE**

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**Approved By:**  
David Hoffman  
Reliability Director

**PACKAGE QUALIFICATION HISTORY**

| <b>QTP Number</b> | <b>Description of Qualification Purpose</b>  | <b>Date</b> |
|-------------------|--|-------------|
| 175107            | Qualification of Automotive 44-lead TSOP II (18.4x10.2mm) Package in OSE-Taiwan (T) using 0.8mil Au wire with EME-G631SH mold compound, CRM-1076WA die attach material, Copper leadframe and Pure Sn leadfinish at MSL3, 260C Reflow Temperature | April 2018  |
| 175106            | Qualification of Automotive 44-lead TSOP II (18.4x10.2mm) Package in OSE-Taiwan (T) using 0.8mil Au wire with EME-G631SH mold compound, CRM-1076WA die attach material, Copper leadframe and Pure Sn leadfinish at MSL3, 260C Reflow Temperature | May 2018    |

| <b>MAJOR PACKAGE INFORMATION USED IN THIS QUALIFICATION</b> |   |
|---|---|
| Package Designation:  | ZW44A                                   |
| Package Outline, Type, or Name:                             | 44-lead TSOP II (18.4x10.2mm)           |
| Mold Compound Name/Manufacturer:                            | EME-G631SH / Sumitomo                   |
| Mold Compound Flammability Rating:                          | V-0 / UL94                              |
| Mold Compound Alpha Emission Rate:                          | 0.001 CPH/cm2 (low alpha mold compound) |
| Oxygen Rating Index: 28                                     | 54                                      |
| Lead Frame Designation:                                     | Full Metal Pad                          |
| Lead Frame Material:  | Copper                                  |
| Substrate Material:   | N/A                                     |
| Lead Finish, Composition / Thickness:                       | Pure Sn                                 |
| Die Backside Preparation Method/Metallization:              | Backgrind                               |
| Die Separation Method:                                      | Laser Groove Mechanical Saw             |
| Die Attach Supplier:  | Sumitomo                                |
| Die Attach Material:  | CRM-1076WA                              |
| Bond Diagram Designation                                    | 002-21666                               |
| Wire Bond Method:   | Thermosonic bonding                     |
| Wire Material/Size:   | Au / 0.8mil (20um)                      |
| Thermal Resistance Theta JA °C/W:                           | 67.94                                   |
| Package Cross Section Yes/No:                               | Y                                       |
| Assembly Process Flow:                                      | 002-23794                               |
| Name/Location of Assembly (prime) facility:                 | OSE-Taiwan (T)                          |
| MSL LEVEL   | 3                                       |
| REFLOW PROFILE  | 260C                                    |

| <b>ELECTRICAL TEST / FINISH DESCRIPTION</b> |                 |
|---|-----------------|
| Test Location:                              | Chipmos, Taiwan |

**Note:** Please contact a Cypress Representative for other package availability.

| <b>MAJOR PACKAGE INFORMATION USED IN THIS QUALIFICATION</b> |   |
|---|---|
| Package Designation:  | ZW44A   |
| Package Outline, Type, or Name:                             | 44-lead TSOP II (18.4x10.2mm)                         |
| Mold Compound Name/Manufacturer:                            | EME-G631SH / Sumitomo                                 |
| Mold Compound Flammability Rating:                          | V-0 / UL94  |
| Mold Compound Alpha Emission Rate:                          | 0.001 CPH/cm2 (low alpha mold compound)               |
| Oxygen Rating Index: 28                                     | 54  |
| Lead Frame Designation:                                     | Full Metal Pad  |
| Lead Frame Material:  | Copper  |
| Substrate Material:   | N/A   |
| Lead Finish, Composition / Thickness:                       | Pure Sn   |
| Die Backside Preparation Method/Metallization:              | Backgrind   |
| Die Separation Method:                                      | Mechanical Saw  |
| Die Attach Supplier:  | Sumitomo  |
| Die Attach Material:  | CRM-1076WA  |
| Bond Diagram Designation                                    | 002-21665, 002-21866, 002-21663, 002-21864, 002-21865 |
| Wire Bond Method:   | Thermosonic bonding                                   |
| Wire Material/Size:   | Au / 0.8mil (20um)                                    |
| Thermal Resistance Theta JA °C/W:                           | 67.94   |
| Package Cross Section Yes/No:                               | Y   |
| Assembly Process Flow:                                      | 002-23794   |
| Name/Location of Assembly (prime) facility:                 | OSE-Taiwan (T)  |
| MSL LEVEL   | 3   |
| REFLOW PROFILE  | 260C  |

| <b>ELECTRICAL TEST / FINISH DESCRIPTION</b> |                     |
|---|---------------------|
| Test Location:                              | Cypress Philippines |

**Note:** Please contact a Cypress Representative for other package availability.

## RELIABILITY TESTS PERFORMED PER SPECIFICATION REQUIREMENTS

| Stress/Test   | Test Condition<br>(Temp/Bias)  | Result<br>P/F |
|---|--|---------------|
| UnBiased High Accelerated Saturation Test (UHAST)     | JESD22-A118:130 C /85 RH<br>Precondition: JESD22-A113 Moisture Sensitivity MSL 3<br>192 Hrs, 30C/60 RH 3IR-Reflow, 260°C 0, -5°C       | P             |
| High Accelerated Saturation Test (HAST)               | JESD22-A110, 130C, 3.6V, 85 RH<br>Precondition: JESD22-A113 Moisture Sensitivity MSL 3<br>192 Hrs, 30C/60 RH 3IR-Reflow, 260°C 0, -5°C | P             |
| Temperature Cycle                                     | JESD22-A104, -65°C to 150°C<br>Precondition: JESD22-A113 Moisture Sensitivity MSL 3<br>192 Hrs, 30C/60 RH 3IR-Reflow, 260°C 0, -5°C    | P             |
| Acoustic  | J-STD-020<br>Precondition: JESD22-A113 Moisture Sensitivity MSL 3<br>192 Hrs, 30C/60 RH 3IR-Reflow, 260C 0, -5C                        | P             |
| High Temp Storage                                     | JESD22-A103: 150C, no bias   | P             |
| Wire Bond Pull  | Mil-Std 883, Method 2011   | P             |
| Soft Error (Alpha Particle)                           | JESD89   | P             |
| Post Temperature Cycle Wire Bond Pull                 | Mil-Std 883, Method 2011   | P             |
| Dye Penetrant Test                                    | Criteria: No Package Crack   | P             |
| Electrostatic Discharge Charge Device Model (ESD-CDM) | AEC-Q100-011<br>250V/500V/ 750V (corner pins)  | P             |
| Electrostatic Discharge Human Body Model (ESD-HBM)    | AEC-Q100-002<br>500V/1000V/2000V   | P             |
| Electrical Distribution                               | AEC-Q100-009   | P             |
| Wire Ball Shear                                       | AEC-Q100-001   | P             |
| Final Visual  | JESD22-B101B   | P             |
| Physical Dimensions                                   | JESD22B100 and B108  | P             |
| Constructional Analysis                               | Criteria: Meet external and internal characteristics of Cypress package  | P             |
| Solderability   | JESD22-B102  | P             |



## Reliability Test Data

**QTP #: 175107**

| <i>Device</i>   | <i>Package</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, MSL3</b>                           |                |                  |                   |                 |                 |             |            |                          |
| CY7C1051H30 (7A171051AO)                                | ZW44A          | 9521001          | 611745452         | OSE-T           | COMP            | 22          | 0          |                          |
| CY7C1051H30 (7A171051AO)                                | ZW44A          | 9521001          | 611745453         | OSE-T           | COMP            | 22          | 0          |                          |
| CY7C1051H30 (7A171051AO)                                | ZW44A          | 9521001          | 611745454         | OSE-T           | COMP            | 22          | 0          |                          |
| <b>STRESS: BALL SHEAR</b>                               |                |                  |                   |                 |                 |             |            |                          |
| CY7C1051H30 (7A171051AO)                                | ZW44A          | 9521001          | 611745452         | OSE-T           | COMP            | 30          | 0          |                          |
| CY7C1051H30 (7A171051AO)                                | ZW44A          | 9521001          | 611745453         | OSE-T           | COMP            | 30          | 0          |                          |
| CY7C1051H30 (7A171051AO)                                | ZW44A          | 9521001          | 611745454         | OSE-T           | COMP            | 30          | 0          |                          |
| <b>STRESS: BOND PULL</b>                                |                |                  |                   |                 |                 |             |            |                          |
| CY7C1051H30 (7A171051AO)                                | ZW44A          | 9521001          | 611745452         | OSE-T           | COMP            | 30          | 0          |                          |
| CY7C1051H30 (7A171051AO)                                | ZW44A          | 9521001          | 611745453         | OSE-T           | COMP            | 30          | 0          |                          |
| CY7C1051H30 (7A171051AO)                                | ZW44A          | 9521001          | 611745454         | OSE-T           | COMP            | 30          | 0          |                          |
| <b>STRESS: CONSTRUCTIONAL ANALYSIS</b>                  |                |                  |                   |                 |                 |             |            |                          |
| CY7C1051H30 (7A171051AO)                                | ZW44A          | 9521001          | 611745452         | OSE-T           | COMP            | 5           | 0          |                          |
| <b>STRESS: DIE SHEAR</b>                                |                |                  |                   |                 |                 |             |            |                          |
| CY7C1051H30 (7A171051AO)                                | ZW44A          | 9521001          | 611745452         | OSE-T           | COMP            | 10          | 0          |                          |
| CY7C1051H30 (7A171051AO)                                | ZW44A          | 9521001          | 611745453         | OSE-T           | COMP            | 10          | 0          |                          |
| CY7C1051H30 (7A171051AO)                                | ZW44A          | 9521001          | 611745454         | OSE-T           | COMP            | 10          | 0          |                          |
| <b>STRESS: DYE PENETRANT</b>                            |                |                  |                   |                 |                 |             |            |                          |
| CY7C1051H30 (7A171051AO)                                | ZW44A          | 9521001          | 611745452         | OSE-T           | COMP            | 15          | 0          |                          |
| <b>STRESS: ELECTRICAL DISTRIBUTION</b>                  |                |                  |                   |                 |                 |             |            |                          |
| CY7C1051H30 (7A171051AO)                                | ZW44A          | 9521001          | 611745452         | OSE-T           | COMP            | 30          | 0          |                          |
| <b>STRESS: ESD-CHARGE DEVICE MODEL</b>                  |                |                  |                   |                 |                 |             |            |                          |
| CY7C1051H30 (7A171051AO)                                | ZW44A          | 9521001          | 611745452         | OSE-T           | 250             | 3           | 0          |                          |
| CY7C1051H30 (7A171051AO)                                | ZW44A          | 9521001          | 611745452         | OSE-T           | 500             | 3           | 0          |                          |
| CY7C1051H30 (7A171051AO)                                | ZW44A          | 9521001          | 611745452         | OSE-T           | 750             | 3           | 0          |                          |
| <b>STRESS: ESD-HUMAN BODY CIRCUIT PER JESD22-A114-B</b> |                |                  |                   |                 |                 |             |            |                          |
| CY7C1051H30 (7A171051AO)                                | ZW44A          | 9521001          | 611745452         | OSE-T           | 500             | 3           | 0          |                          |
| CY7C1051H30 (7A171051AO)                                | ZW44A          | 9521001          | 611745452         | OSE-T           | 1000            | 3           | 0          |                          |
| CY7C1051H30 (7A171051AO)                                | ZW44A          | 9521001          | 611745452         | OSE-T           | 2000            | 3           | 0          |                          |



## Reliability Test Data

**QTP #: 175107**

| <i>Device</i>  | <i>Package</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: FINAL VISUAL INSPECTION</b>   |                |                  |                   |                 |                 |             |            |                          |
| CY7C1051H30 (7A171051AO)   | ZW44A          | 9521001          | 611745452         | OSE-T           | COMP            | 1489        | 0          |                          |
| CY7C1051H30 (7A171051AO)   | ZW44A          | 9521001          | 611745453         | OSE-T           | COMP            | 944         | 0          |                          |
| CY7C1051H30 (7A171051AO)   | ZW44A          | 9521001          | 611745454         | OSE-T           | COMP            | 945         | 0          |                          |
| <b>STRESS: UNBIASED - HI-ACCEL SATURATION TEST, 130C, 85%RH, PRE COND 192 HR 30C/60%RH, MSL3</b> |                |                  |                   |                 |                 |             |            |                          |
| CY7C1051H30 (7A171051AO)   | ZW44A          | 9521001          | 611745452         | OSE-T           | 96              | 80          | 0          |                          |
| CY7C1051H30 (7A171051AO)   | ZW44A          | 9521001          | 611745452         | OSE-T           | 192             | 80          | 0          |                          |
| CY7C1051H30 (7A171051AO)   | ZW44A          | 9521001          | 611745453         | OSE-T           | 96              | 75          | 0          |                          |
| CY7C1051H30 (7A171051AO)   | ZW44A          | 9521001          | 611745453         | OSE-T           | 192             | 75          | 0          |                          |
| CY7C1051H30 (7A171051AO)   | ZW44A          | 9521001          | 611745454         | OSE-T           | 96              | 77          | 0          |                          |
| CY7C1051H30 (7A171051AO)   | ZW44A          | 9521001          | 611745454         | OSE-T           | 192             | 77          | 0          |                          |
| <b>STRESS: HI-ACCEL SATURATION TEST, 130C, 85%RH 3.65V, PRE COND 192 HR 30C/60%RH, MSL3</b>      |                |                  |                   |                 |                 |             |            |                          |
| CY7C1051H30 (7A171051AO)   | ZW44A          | 9521001          | 611745452         | OSE-T           | 96              | 80          | 0          |                          |
| CY7C1051H30 (7A171051AO)   | ZW44A          | 9521001          | 611745453         | OSE-T           | 96              | 77          | 0          |                          |
| CY7C1051H30 (7A171051AO)   | ZW44A          | 9521001          | 611745454         | OSE-T           | 96              | 76          | 0          |                          |
| <b>STRESS: HIGH TEMPERATURE STORAGE (150C)</b>   |                |                  |                   |                 |                 |             |            |                          |
| CY7C1051H30 (7A171051AO)   | ZW44A          | 9521001          | 611745452         | OSE-T           | 1000            | 80          | 0          |                          |
| <b>STRESS: PHYSICAL DIMENSION</b>  |                |                  |                   |                 |                 |             |            |                          |
| CY7C1051H30 (7A171051AO)   | ZW44A          | 9521001          | 611745452         | OSE-T           | COMP            | 10          | 0          |                          |
| <b>STRESS: POST TCT BOND PULL</b>  |                |                  |                   |                 |                 |             |            |                          |
| CY7C1051H30 (7A171051AO)   | ZW44A          | 9521001          | 611745452         | OSE-T           | 500             | 5           | 0          |                          |
| <b>STRESS: SER</b>   |                |                  |                   |                 |                 |             |            |                          |
| CY7C1051H30 (7A171051AO)   | ZW44A          | 9521001          | 611745452         | OSE-T           | COMP            | 3           | 0          |                          |
| <b>STRESS: SOLDERABILITY</b>   |                |                  |                   |                 |                 |             |            |                          |
| CY7C1051H30 (7A171051AO)   | ZW44A          | 9521001          | 611745452         | OSE-T           | COMP            | 15          | 0          |                          |



## Reliability Test Data

**QTP #: 175107**

| <i>Device</i> | <i>Package</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: TC COND. C -65C TO 150C, PRECONDITION 192 HRS 30C/60%RH**

|                          |       |         |           |       |     |    |   |  |
|--------------------------|-------|---------|-----------|-------|-----|----|---|--|
| CY7C1051H30 (7A171051AO) | ZW44A | 9521001 | 611745452 | OSE-T | 500 | 85 | 0 |  |
|--------------------------|-------|---------|-----------|-------|-----|----|---|--|

|                          |       |         |           |       |     |    |   |  |
|--------------------------|-------|---------|-----------|-------|-----|----|---|--|
| CY7C1051H30 (7A171051AO) | ZW44A | 9521001 | 611745453 | OSE-T | 500 | 76 | 0 |  |
|--------------------------|-------|---------|-----------|-------|-----|----|---|--|

|                          |       |         |           |       |     |    |   |  |
|--------------------------|-------|---------|-----------|-------|-----|----|---|--|
| CY7C1051H30 (7A171051AO) | ZW44A | 9521001 | 611745454 | OSE-T | 500 | 76 | 0 |  |
|--------------------------|-------|---------|-----------|-------|-----|----|---|--|

**STRESS: XRAY**

|                          |       |         |           |       |      |    |   |  |
|--------------------------|-------|---------|-----------|-------|------|----|---|--|
| CY7C1051H30 (7A171051AO) | ZW44A | 9521001 | 611745452 | OSE-T | COMP | 15 | 0 |  |
|--------------------------|-------|---------|-----------|-------|------|----|---|--|

|                          |       |         |           |       |      |    |   |  |
|--------------------------|-------|---------|-----------|-------|------|----|---|--|
| CY7C1051H30 (7A171051AO) | ZW44A | 9521001 | 611745453 | OSE-T | COMP | 15 | 0 |  |
|--------------------------|-------|---------|-----------|-------|------|----|---|--|

|                          |       |         |           |       |      |    |   |  |
|--------------------------|-------|---------|-----------|-------|------|----|---|--|
| CY7C1051H30 (7A171051AO) | ZW44A | 9521001 | 611745454 | OSE-T | COMP | 15 | 0 |  |
|--------------------------|-------|---------|-----------|-------|------|----|---|--|



## Reliability Test Data

**QTP #: 175106**

| <i>Device</i>                          | <i>Package</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, MSL3</b>          |                |                  |                   |                 |                 |             |            |                          |
| CY14B104NA (7A1404B6CC)                | ZW44A          | 4725833          | 611745014         | OSE-T           | COMP            | 22          | 0          |                          |
| CY62157EV30LL (7A62157FC)              | ZW44A          | 4730563          | 611745199         | OSE-T           | COMP            | 22          | 0          |                          |
| CY7C1041CV33 (7A134101FC)              | ZW44A          | 4725686          | 611801524         | OSE-T           | COMP            | 22          | 0          |                          |
| CY7C1021D (7A1021NC)                   | ZW44A          | 4226591          | 611747584         | OSE-T           | COMP            | 22          | 0          |                          |
| CY7C1021BN (7A1021SFC)                 | ZW44A          | 4729010          | 611744908         | OSE-T           | COMP            | 22          | 0          |                          |
| <b>STRESS: BALL SHEAR</b>              |                |                  |                   |                 |                 |             |            |                          |
| CY14B104NA (7A1404B6CC)                | ZW44A          | 4725833          | 611745014         | OSE-T           | COMP            | 30          | 0          |                          |
| CY62157EV30LL (7A62157FC)              | ZW44A          | 4730563          | 611745199         | OSE-T           | COMP            | 30          | 0          |                          |
| CY7C1041CV33 (7A134101FC)              | ZW44A          | 4725686          | 611801524         | OSE-T           | COMP            | 30          | 0          |                          |
| CY7C1021D (7A1021NC)                   | ZW44A          | 4226591          | 611747584         | OSE-T           | COMP            | 30          | 0          |                          |
| CY7C1021BN (7A1021SFC)                 | ZW44A          | 4729010          | 611744908         | OSE-T           | COMP            | 30          | 0          |                          |
| <b>STRESS: BOND PULL</b>               |                |                  |                   |                 |                 |             |            |                          |
| CY14B104NA (7A1404B6CC)                | ZW44A          | 4725833          | 611745014         | OSE-T           | COMP            | 30          | 0          |                          |
| CY62157EV30LL (7A62157FC)              | ZW44A          | 4730563          | 611745199         | OSE-T           | COMP            | 30          | 0          |                          |
| CY7C1041CV33 (7A134101FC)              | ZW44A          | 4725686          | 611801524         | OSE-T           | COMP            | 30          | 0          |                          |
| CY7C1021D (7A1021NC)                   | ZW44A          | 4226591          | 611747584         | OSE-T           | COMP            | 30          | 0          |                          |
| CY7C1021BN (7A1021SFC)                 | ZW44A          | 4729010          | 611744908         | OSE-T           | COMP            | 30          | 0          |                          |
| <b>STRESS: CONSTRUCTIONAL ANALYSIS</b> |                |                  |                   |                 |                 |             |            |                          |
| CY14B104NA (7A1404B6CC)                | ZW44A          | 4725833          | 611745014         | OSE-T           | COMP            | 5           | 0          |                          |
| <b>STRESS: DIE SHEAR</b>               |                |                  |                   |                 |                 |             |            |                          |
| CY14B104NA (7A1404B6CC)                | ZW44A          | 4725833          | 611745014         | OSE-T           | COMP            | 10          | 0          |                          |
| CY62157EV30LL (7A62157FC)              | ZW44A          | 4730563          | 611745199         | OSE-T           | COMP            | 10          | 0          |                          |
| CY7C1041CV33 (7A134101FC)              | ZW44A          | 4725686          | 611801524         | OSE-T           | COMP            | 10          | 0          |                          |
| CY7C1021D (7A1021NC)                   | ZW44A          | 4226591          | 611747584         | OSE-T           | COMP            | 10          | 0          |                          |
| CY7C1021BN (7A1021SFC)                 | ZW44A          | 4729010          | 611744908         | OSE-T           | COMP            | 10          | 0          |                          |
| <b>STRESS: DYE PENETRANT</b>           |                |                  |                   |                 |                 |             |            |                          |
| CY14B104NA (7A1404B6CC)                | ZW44A          | 4725833          | 611745014         | OSE-T           | COMP            | 15          | 0          |                          |



## Reliability Test Data

**QTP #: 175106**

| <i>Device</i>   | <i>Package</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: ELECTRICAL DISTRIBUTION</b>                  |                |                  |                   |                 |                 |             |            |                          |
| CY7C1041CV33 (7A134101FC)                               | ZW44A          | 4725686          | 611801524         | OSE-T           | COMP            | 30          | 0          |                          |
| CY7C1021D (7A1021NC)                                    | ZW44A          | 4226591          | 611747584         | OSE-T           | COMP            | 30          | 0          |                          |
| <b>STRESS: ESD-CHARGE DEVICE MODEL</b>                  |                |                  |                   |                 |                 |             |            |                          |
| CY14B104NA (7A1404B6CC)                                 | ZW44A          | 4725833          | 611745014         | OSE-T           | 250             | 3           | 0          |                          |
| CY62157EV30LL (7A62157FC)                               | ZW44A          | 4730563          | 611745199         | OSE-T           | 250             | 3           | 0          |                          |
| CY7C1041CV33 (7A134101FC)                               | ZW44A          | 4725686          | 611801524         | OSE-T           | 250             | 3           | 0          |                          |
| CY7C1021D (7A1021NC)                                    | ZW44A          | 4226591          | 611747584         | OSE-T           | 250             | 3           | 0          |                          |
| CY7C1021BN (7A1021SFC)                                  | ZW44A          | 4729010          | 611744908         | OSE-T           | 250             | 3           | 0          |                          |
| CY14B104NA (7A1404B6CC)                                 | ZW44A          | 4725833          | 611745014         | OSE-T           | 500             | 3           | 0          |                          |
| CY62157EV30LL (7A62157FC)                               | ZW44A          | 4730563          | 611745199         | OSE-T           | 500             | 3           | 0          |                          |
| CY7C1041CV33 (7A134101FC)                               | ZW44A          | 4725686          | 611801524         | OSE-T           | 500             | 3           | 0          |                          |
| CY7C1021D (7A1021NC)                                    | ZW44A          | 4226591          | 611747584         | OSE-T           | 500             | 3           | 0          |                          |
| CY7C1021BN (7A1021SFC)                                  | ZW44A          | 4729010          | 611744908         | OSE-T           | 500             | 3           | 0          |                          |
| CY14B104NA (7A1404B6CC)                                 | ZW44A          | 4725833          | 611745014         | OSE-T           | 750             | 3           | 0          |                          |
| CY62157EV30LL (7A62157FC)                               | ZW44A          | 4730563          | 611745199         | OSE-T           | 750             | 3           | 0          |                          |
| CY7C1041CV33 (7A134101FC)                               | ZW44A          | 4725686          | 611801524         | OSE-T           | 750             | 3           | 0          |                          |
| CY7C1021D (7A1021NC)                                    | ZW44A          | 4226591          | 611747584         | OSE-T           | 750             | 3           | 0          |                          |
| CY7C1021BN (7A1021SFC)                                  | ZW44A          | 4729010          | 611744908         | OSE-T           | 750             | 3           | 0          |                          |
| <b>STRESS: ESD-HUMAN BODY CIRCUIT PER JESD22-A114-B</b> |                |                  |                   |                 |                 |             |            |                          |
| CY14B104NA (7A1404B6CC)                                 | ZW44A          | 4725833          | 611745014         | OSE-T           | 500             | 3           | 0          |                          |
| CY14B104NA (7A1404B6CC)                                 | ZW44A          | 4725833          | 611745014         | OSE-T           | 1000            | 3           | 0          |                          |
| CY14B104NA (7A1404B6CC)                                 | ZW44A          | 4725833          | 611745014         | OSE-T           | 2000            | 3           | 0          |                          |
| <b>STRESS: FINAL VISUAL INSPECTION</b>                  |                |                  |                   |                 |                 |             |            |                          |
| CY14B104NA (7A1404B6CC)                                 | ZW44A          | 4725833          | 611745014         | OSE-T           | COMP            | 1483        | 0          |                          |
| CY62157EV30LL (7A62157FC)                               | ZW44A          | 4730563          | 611745199         | OSE-T           | COMP            | 1000        | 0          |                          |
| CY7C1041CV33 (7A134101FC)                               | ZW44A          | 4725686          | 611801524         | OSE-T           | COMP            | 806         | 0          |                          |
| CY7C1021D (7A1021NC)                                    | ZW44A          | 4226591          | 611747584         | OSE-T           | COMP            | 1000        | 0          |                          |
| CY7C1021BN (7A1021SFC)                                  | ZW44A          | 4729010          | 611744908         | OSE-T           | COMP            | 699         | 0          |                          |



## Reliability Test Data

**QTP #: 175106**

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

**STRESS: UNBIASED - HI-ACCEL SATURATION TEST, 130C, 85%RH, PRE COND 192 HR 30C/60%RH, MSL3**

| Device                    | Package | Fab Lot # | Assy Lot # | Assy Loc | Duration | Samp | Rej | Failure Mechanism |
|---------------------------|---------|-----------|------------|----------|----------|------|-----|-------------------|
| CY14B104NA (7A1404B6CC)   | ZW44A   | 4725833   | 611745014  | OSE-T    | 96       | 80   | 0   |                   |
| CY14B104NA (7A1404B6CC)   | ZW44A   | 4725833   | 611745014  | OSE-T    | 192      | 80   | 0   |                   |
| CY62157EV30LL (7A62157FC) | ZW44A   | 4730563   | 611745199  | OSE-T    | 96       | 78   | 0   |                   |
| CY62157EV30LL (7A62157FC) | ZW44A   | 4730563   | 611745199  | OSE-T    | 192      | 77   | 0   |                   |
| CY7C1021D (7A1021NC)      | ZW44A   | 4226591   | 611747584  | OSE-T    | 96       | 79   | 0   |                   |
| CY7C1021D (7A1021NC)      | ZW44A   | 4226591   | 611747584  | OSE-T    | 192      | 79   | 0   |                   |

**STRESS: HI-ACCEL SATURATION TEST, 130C, 85%RH 3.65V, PRE COND 192 HR 30C/60%RH, MSL3**

| Device                    | Package | Fab Lot # | Assy Lot # | Assy Loc | Duration | Samp | Rej | Failure Mechanism |
|---------------------------|---------|-----------|------------|----------|----------|------|-----|-------------------|
| CY14B104NA (7A1404B6CC)   | ZW44A   | 4725833   | 611745014  | OSE-T    | 96       | 80   | 0   |                   |
| CY14B104NA (7A1404B6CC)   | ZW44A   | 4725833   | 611745014  | OSE-T    | 128      | 80   | 0   |                   |
| CY62157EV30LL (7A62157FC) | ZW44A   | 4730563   | 611745199  | OSE-T    | 96       | 79   | 0   |                   |
| CY7C1021D (7A1021NC)      | ZW44A   | 4226591   | 611747584  | OSE-T    | 96       | 80   | 0   |                   |
| CY7C1021D (7A1021NC)      | ZW44A   | 4226591   | 611747584  | OSE-T    | 128      | 80   | 0   |                   |

**STRESS: HIGH TEMPERATURE STORAGE (150C)**

| Device                  | Package | Fab Lot # | Assy Lot # | Assy Loc | Duration | Samp | Rej | Failure Mechanism |
|-------------------------|---------|-----------|------------|----------|----------|------|-----|-------------------|
| CY14B104NA (7A1404B6CC) | ZW44A   | 4725833   | 611745014  | OSE-T    | 1000     | 80   | 0   |                   |

**STRESS: PHYSICAL DIMENSION**

| Device                    | Package | Fab Lot # | Assy Lot # | Assy Loc | Duration | Samp | Rej | Failure Mechanism |
|---------------------------|---------|-----------|------------|----------|----------|------|-----|-------------------|
| CY14B104NA (7A1404B6CC)   | ZW44A   | 4725833   | 611745014  | OSE-T    | COMP     | 10   | 0   |                   |
| CY62157EV30LL (7A62157FC) | ZW44A   | 4730563   | 611745199  | OSE-T    | COMP     | 10   | 0   |                   |
| CY7C1041CV33 (7A134101FC) | ZW44A   | 4725686   | 611801524  | OSE-T    | COMP     | 10   | 0   |                   |
| CY7C1021D (7A1021NC)      | ZW44A   | 4226591   | 611747584  | OSE-T    | COMP     | 10   | 0   |                   |
| CY7C1021BN (7A1021SFC)    | ZW44A   | 4729010   | 611744908  | OSE-T    | COMP     | 10   | 0   |                   |

**STRESS: POST TCT BOND PULL**

| Device                  | Package | Fab Lot # | Assy Lot # | Assy Loc | Duration | Samp | Rej | Failure Mechanism |
|-------------------------|---------|-----------|------------|----------|----------|------|-----|-------------------|
| CY14B104NA (7A1404B6CC) | ZW44A   | 4725833   | 611745014  | OSE-T    | 500      | 5    | 0   |                   |

**STRESS: SER**

| Device                  | Package | Fab Lot # | Assy Lot # | Assy Loc | Duration | Samp | Rej | Failure Mechanism |
|-------------------------|---------|-----------|------------|----------|----------|------|-----|-------------------|
| CY14B104NA (7A1404B6CC) | ZW44A   | 4725833   | 611745014  | OSE-T    | COMP     | 3    | 0   |                   |

**STRESS: SOLDERABILITY**

| Device                  | Package | Fab Lot # | Assy Lot # | Assy Loc | Duration | Samp | Rej | Failure Mechanism |
|-------------------------|---------|-----------|------------|----------|----------|------|-----|-------------------|
| CY14B104NA (7A1404B6CC) | ZW44A   | 4725833   | 611745014  | OSE-T    | COMP     | 15   | 0   |                   |



## Reliability Test Data

**QTP #: 175106**

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

**STRESS: TC COND. C -65C TO 150C, PRECONDITION 192 HRS 30C/60%RH**

|                           |       |         |           |       |      |    |   |
|---------------------------|-------|---------|-----------|-------|------|----|---|
| CY14B104NA (7A1404B6CC)   | ZW44A | 4725833 | 611745014 | OSE-T | 500  | 85 | 0 |
| CY62157EV30LL (7A62157FC) | ZW44A | 4730563 | 611745199 | OSE-T | 500  | 80 | 0 |
| CY62157EV30LL (7A62157FC) | ZW44A | 4730563 | 611745199 | OSE-T | 1000 | 80 | 0 |
| CY7C1041CV33 (7A134101FC) | ZW44A | 4725686 | 611801524 | OSE-T | 500  | 80 | 0 |
| CY7C1021D (7A1021NC)      | ZW44A | 4226591 | 611747584 | OSE-T | 500  | 80 | 0 |
| CY7C1021BN (7A1021SFC)    | ZW44A | 4729010 | 611744908 | OSE-T | 500  | 80 | 0 |
| CY7C1021BN (7A1021SFC)    | ZW44A | 4729010 | 611744908 | OSE-T | 1000 | 80 | 0 |

**STRESS: TIN WHISKER**

|                         |       |         |           |       |      |    |   |
|-------------------------|-------|---------|-----------|-------|------|----|---|
| CY14B104NA (7A1404B6CC) | ZW44A | 4725833 | 611745014 | OSE-T | COMP | 15 | 0 |
|-------------------------|-------|---------|-----------|-------|------|----|---|

**STRESS: XRAY**

|                           |       |         |           |       |      |    |   |
|---------------------------|-------|---------|-----------|-------|------|----|---|
| CY14B104NA (7A1404B6CC)   | ZW44A | 4725833 | 611745014 | OSE-T | COMP | 15 | 0 |
| CY62157EV30LL (7A62157FC) | ZW44A | 4730563 | 611745199 | OSE-T | COMP | 15 | 0 |
| CY7C1041CV33 (7A134101FC) | ZW44A | 4725686 | 611801524 | OSE-T | COMP | 15 | 0 |
| CY7C1021D (7A1021NC)      | ZW44A | 4226591 | 611747584 | OSE-T | COMP | 15 | 0 |
| CY7C1021BN (7A1021SFC)    | ZW44A | 4729010 | 611744908 | OSE-T | COMP | 15 | 0 |



## Document History Page

Document Title: QTP 175106: AUTOMOTIVE 44-LEAD TSOP II (18.4x10.2mm) PURE SN LEADFINISH, AU  
WIRE MSL3, 260C REFLOW OSE-TAIWAN (T)  
Document Number: 002-24019

| Rev. | ECN No. | Orig. of Change | Description of Change |
|------|---------|-----------------|-----------------------|
| **   | 6182545 | HSTO            | Initial spec release  |