800 W. 6th Street, Austin, TX 78701

PCN-2014-552

Assembly and Test Site Transfer from StatsChipPac Kuala Lumpur, Malaysia (SCM) to ASE-Chung Li (ASE-CL) Taiwan for the CS35L00-CNZ(R) component

Process/Product Change Notification

(Reference Advance PCN-2014-534)

Date: July 2014

Dear Customer:

As a follow up to the PCN-2014-552 Qualification Plan sent in June 2014, Cirrus Logic is pleased to announce that both the Test Equipment Correlation Plan and the Reliability Qualification Stress Testing have been successfully completed.

Reliability Qualification Results:

The Reliability Qualification testing has successfully completed and passed all testing.

Tester Equipment Correlation Results:

As noted, the equipment platform technology, hardware and software remain the same. The visual / mechanical inspection as well as tape and reel operations are compliant to JEDEC industry standards.

In addition, the test equipment correlation plan has successfully passed all of the established criteria for production use. Specifically, all tests fail with an open socket condition, all confirmed fails at the prior test site location were verified at the recently established test site location and a large sample from multiple lots were run at applicable temperatures with the production level test load board, which verified all distributions were in line with expectation as well as met and/or exceeded data sheet specification requirements.

Final Disposition Statement:

Both the Test Equipment Correlation Plan and the Reliability Qualification Stress Testing have been successfully completed. Based on these results, the designated site location has been approved as a manufacturing site for this respective product and delivery of material shipments to customers will commence upon availability.

Sincerely,

PCN Coordinator
Cirrus Logic Corporate Quality
Phone: +1(512) 851-4000

Attachment: 1

Products Affected:

The devices listed on this page are the complete list of affected devices. According to our records, these are the devices that you have purchased within the past twenty-four (24) months. The corresponding customer part number is also listed, if available.

Technical details of this Process / Product Change follow on the next page(s).

PCN Number:	2014-552	**PCN Date:**	June 2014
Title:	Assembly and Test Site Transfer from StatsChipPac Kuala Lumpur, Malaysia to ASE-Chung Li (ASE-CL) Taiwan for the CS35L00-CNZ(R) component		
Customer Contact:	Local Field Sales Representative	**Phone:** (512) 851-4000	**Dept:** Corporate Quality
Proposed 1st Ship Date:	August 2014	**Estimated Sample Availability date:**	May 2014
Change Type:	Assembly and Test Site Transfer to an existing Qualified Cirrus Logic Site Location: Change Type = Major		

☒	**Assembly Site**	☐	**Assembly Process**	☒	**Assembly Materials**
☐	**Design**	☐	**Electrical Specification**	☐	**Mechanical Specification**
☒	**Test Site**	☐	**Packing/Shipping/Labeling**	☐	**Test Process**
☐	**Wafer Bump Site**	☐	**Wafer Bump Material**	☐	**Wafer Bump Process**
☐	**Wafer Fab Site**	☐	**Wafer Fab Materials**	☐	**Wafer Fab Process**

PCN Details

Description of Change:

Cirrus Logic's package Assembly and Test Supplier, StatsChipPac, has announced their site in Kuala Lumpur, Malaysia will close by September 30th, 2014.

Cirrus Logic is qualifying and will move these products to the existing qualified subcontractor (ASE-CL) site location in Chung Li Taiwan.

Below you will find an outline of the described changes for these components:

CS35L00-CNZ(R)

- **Assembly and Test Site Change:**
  From: **StatsChipPac Kuala Lumpur, Malaysia** → To: **ASE-Chung Li (ASE-CL) Taiwan**
- **Mold Compound:**
  From: **Sumitomo EME-G770** → To: **Hitachi CEL-9240HF**
- **DIE Attach:**
  From: **Ablebond 8290** → To: **Henkel ABT125**

Reason for Change:

Cirrus Logic's package Assembly and Test Supplier, StatsChipPac, has announced their site in Kuala Lumpur, Malaysia will close by September 30th, 2014.

Cirrus Logic is qualifying and will move these products to the existing qualified subcontractor (ASE-CL) site location in Chung Li Taiwan.

Special Note:

As a full services supplier and in order to ensure continuity of supply as well as sustain quality an accelerated timeframe has been established for the full transfer of said product no later than September 30th, 2014.

Earlier production level material may be available from the qualified subcontractor (ASE-CL) site location in Chung Li Taiwan, but shipment(s) from Cirrus Logic are contingent on successful completion of the designated site transfer qualification.

Anticipated impact on Form, Fit, Function, Quality or Reliability (positive / negative):

Anticipated No Adverse Impact to the Quality & Reliability of said product; as Transfer Site is an existing Cirrus Logic qualified subcontractor (ASE-Chung Li) site location in Taiwan and considered low risk.

Product Affected:	☐ **Table I**

	Customer Part Number	**Cirrus Logic Part Number**
Device 1:		CS35L00-CNZ(R)

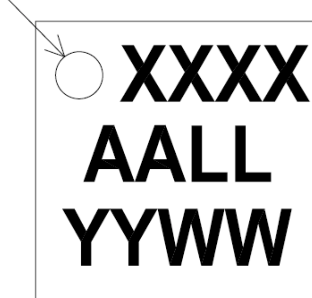
Changes to product identification resulting from this PCN:

The Cirrus Logic component symbolization on the external face of the device reflects the designated Assembly Vendor.

Below you will find a representative example:

Our part: **CS35L00-CNZ(R)**
Mark format: **300**
Mark change:
· Assembly Vendor = AA changing From: **MA** → TO: **AC**
· COO = None (not shown on mark)

Line 1: Part Number (4 spaces max.)
Line 2: Package Mark (4 spaces max.)
Line 3: Date Code (4 spaces max.)



With the Assembly and Test Site Transfer to ASE-Chung Li (ASE-CL) Taiwan, the material will receive the appropriate designation for the Assembly Vendor.

Qualification Data:

This qualification has been specifically developed for the validation of this change. The qualification data validates that the proposed change meets the applicable released technical specifications.			
Qualification Schedule:	**Start:** March 2014	**End:** July 2014	

Qualification Device Construction Details:

	Device 1	**Device 2**
Part Number(s):	CS35L00-CNZ(R)	
Wafer Fab Site:	J5	
Wafer Technology:	0.18 um	
Die Size:	1.56 mm	
Assembly Site:	ASE-Chung Li (ASE-CL) Taiwan	
Package Type/Code:	10DFNZ VQFN 3x3	
Moisture Level:	MSL (Moisture Sensitivity Level) 2	
Package Pins:	10 NL QFN	
Lead Frame Material:	Cu (Copper)	
Mold Compound Supplier:	CEL–9240HF Hitachi	
Lead Finish:	Matte Sn Plate	
Die / Pad	0.308	
Die Attach Material	Henkel ABT125	
Wire Diameter:	0.8 mil	
Wire Base Metal:	PCC	

The Qualification Plans are designed using JEDEC and other applicable industry standards. An overall summary of the Qualification results will be submitted upon completion.

CS35L00-CNZ(R) Qualification

CS35L00-CNZ(R) Qualification: ☐ **Plan** ☒ **Test Results**			
Reliability Test			Sample Size (PASS/FAIL)
Pre-Conditioning	JEDEC J-STD-020A	MSL2 / 260°C (2 Lots)	462 / **0**
BHAST (Biased HAST)	JESD22 A101	130C/85%RH/96 hrs (BHAST) Read Points (96 Hrs) (1 Lot)	77 / **0**
Temperature Cycle	JESD22 A104	-65°C to +150°C for 500 cycles (1 Lot)	77 / **0**
WBS (Wire Bond Shear)	JESD22 B116	Paragraph 4 (Procedure) (1 Lot)	5 / **0**
WBP (Wire Bond Pull)	MIL-STD-883 Method 2011	Paragraph 3 (Procedure) (1 Lot)	5 / **0**
SD (Solderability)	JESD22 B102	93°C / 8 hr steam age before SD (1 Lot)	15 / **0**
PD (Physical Dimensions)	JESD22 B100 + B108	Package outline per JESD95 Cpk > 1.50 per JESD95 (1 Lot)	10 / **0**
HTSL (High Temperature Storage Life)	JESD22 A103	150°C for 1000 hrs (1 Lot)	45 / **0**

Notes:

- Qualification tests "pass" on zero fails for each test

Reliability Qualification Results:

The Reliability Qualification testing has successfully completed and passed all testing.

Test Equipment Correlation Plan

Note:

- The Equipment Platform Technology, Hardware and Software remain the same.
- The Visual / Mechanical inspection and Tape and Reel operations are compliant to JEDEC industry standards

The Test Equipment Correlation plan involves the following:

- Running the new site program with an OPEN Socket (No Unit) to ensure "All" tests fail.

- Serializing Control (Known Good) Units and testing the material on both test platforms (Existing and New Location) at all applicable test temperatures utilizing the same load-board and test site(s). A correlation comparison will be made on "All" individual components. If there is a concern or discrepancy exists, a bench level correlation will be performed to ensure new site meets data sheet requirements.

- Running samples from 2 or more lots at the existing site and at new site location. The results from each site will be compared.

- Running (the same) sample non-continuity failures (different failing tests) and testing them at the existing site and at the new site. All units are expected to fail at the new site location.

- Performing GR&R (Gauge Repeatability & Reproducibility)

Tester Equipment Correlation Results:

As noted, the equipment platform technology, hardware and software remain the same. The visual / mechanical inspection as well as tape and reel operations are compliant to JEDEC industry standards.

In addition, the test equipment correlation plan has successfully passed all of the established criteria for production use. Specifically, all tests fail with an open socket condition, all confirmed fails at the prior test site location were verified at the recently established test site location and a large sample from multiple lots were run at applicable temperatures with the production level test load board, which verified all distributions were in line with expectation as well as met and/or exceeded data sheet specification requirements.

Final Disposition Statement:

Both the Test Equipment Correlation Plan and the Reliability Qualification Stress Testing have been successfully completed. Based on these results, the designated site location has been approved as a manufacturing site for this respective product.