



Product Change Notification - JAON-26AJLN058

Date:

28 Feb 2020

Product Category:

Ethernet Switches

Affected CPNs:**Notification subject:**

CCB 3867.001 Final Notice: Qualification of ASE as a new assembly site for selected Micrel KSZ8893 device family available in 100L LFBGA (9x9x1.38 mm) package.

Notification text:**PCN Status:**

Final notification

PCN Type:

Manufacturing Change

Microchip Parts Affected:

Please open one of the icons found in the Affected CPNs section above.

NOTE: For your convenience Microchip includes identical files in two formats (.pdf and .xls).

Description of Change:

Qualification of ASE as a new assembly site for selected Micrel KSZ8893 device family available in 100L LFBGA (9x9x1.38 mm) package.

Pre Change:

Assembled at OSE assembly site using 2300 die attach and E770 molding compound.

Post Change:

Assembled at ASE assembly site using 2100A die attach and KE-G1250NAS molding compound.

Pre and Post Change Summary:

| | | Pre Change | Post Change |
|---------------------------|-----------------------|---|--|
| Assembly Site | | Orient Semiconductor Electronics, Ltd (OSE) | Advanced Semiconductor Engineering, Inc. (ASE) |
| Wire material | | Au | Au |
| Die attach material | | 2300 | 2100A |
| Molding compound material | | E770 | KE-G1250NAS |
| Substrate material | Core | HL832NX | HL832NX |
| | Solder Mask | AUS308 | AUS308 |
| | Solder Mask Thickness | 25 ± 10µm | 30 ± 10µm |
| Solder Ball | | SAC305 | SAC305 |

Impacts to Data Sheet:

None

Change Impact:

None

Reason for Change:

To improve manufacturability by qualifying ASE as a new assembly site.

Change Implementation Status:

In Progress

Estimated First Ship Date:



April 17, 2020 (date code: 2016)

NOTE: Please be advised that after the estimated first ship date customers may receive pre and post change parts.

Time Table Summary:

| | February 2020 | | | | -> | April 2020 | | | | |
|-------------------------------|---------------|---|---|---|----|------------|----|----|----|----|
| Workweek | 6 | 7 | 8 | 9 | | 14 | 15 | 16 | 17 | 18 |
| Qual Report Availability | | | | X | | | | | | |
| Final PCN Issue Date | | | | X | | | | | | |
| Estimated Implementation Date | | | | | | | | X | | |

Method to Identify Change:

Traceability code

Qualification Report:

Please open the attachments included with this PCN labeled as PCN_#_Qual_Report.

Revision History:

February 28, 2020: Issued final notification. Attached the qualification report. Provided estimated first ship date to be on April 17, 2020.

The change described in this PCN does not alter Microchip's current regulatory compliance regarding the material content of the applicable products.

Attachment(s):

[PCN_JAON-26AJLN058_Qual_Report.pdf](#)

Please contact your local [Microchip sales office](#) with questions or concerns regarding this notification.

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Affected Catalog Part Numbers (CPN)

KSZ8893MBL

KSZ8893MBLI

KSZ8893MBL-TR



QUALIFICATION REPORT SUMMARY

PCN #: JAON-26AJLN058

Date:

January 6, 2020

Qualification of ASE as a new assembly site for selected Micrel KSZ8842 device family available in 100L LFBGA (9x9x1.38 mm) package. The qualification for selected Micrel KSZ8893 device family available in 100L LFBGA (9x9x1.38 mm) package will qualify by similarity (QBS).

Purpose:

Qualification of ASE as a new assembly site for selected Micrel KSZ8842 device family available in 100L LFBGA (9x9x1.38 mm) package. The qualification for selected Micrel KSZ8893 device family available in 100L LFBGA (9x9x1.38 mm) package will qualify by similarity (QBS).

I. Summary:

The purpose of this report is to qualify Mask #TARA1 (KSZ8842PMBL-AM) in LFBGA 9x9x 1.38 mm, 100 pins package at ASE, per CCB# 3867, following AEC-Q100 and guidelines established in Microchip specification QCI-39000, "Worldwide Quality Conformance Requirements".

II. Conclusion:

Based on the results, Mask #TARA1 (KSZ8842PMBL-AM) in LFBGA 9x9x 1.38 mm, 100 pins package at ASE package complies with the reliability guidelines implemented in the qualification plan. Therefore, the LFBGA from ASE qualified for Q100 Grade 3 package for TARA1 product family.

III. Device Description:

| | |
|-------------------------|-------------------|
| Device | KSZ8842PMBL-AM |
| MPC | TARA17ABAA02 |
| Mask | TARA1 |
| Document Control Number | ML012020002O |
| Document Revision | A |
| CCB No. | 3867 and 3867.001 |

IV. Qualification Material:

| Test Lot | Lot 1 | Lot 2 | Lot 3 |
|---------------------|--------------------------------|--------------------------|--------------------------|
| ASSEMBLY LOT | ASE201600282.000 | ASE201600283.000 | ASE201600286.000 |
| PACKAGE | 100L-LFBGA9x9x 1.38mm | 100L-LFBGA9x9x 1.38mm | 100L-LFBGA9x9x 1.38mm |
| ASSEMBLY SITE | ASE, Taiwan | ASE, Taiwan | ASE, Taiwan |
| FINAL TEST LOCATION | OSE, Taiwan | OSE, Taiwan | OSE, Taiwan |
| QUAL TESTS | PRECOND, HTSL, HAST, UHAST, TC | PRECOND, HAST, UHAST, TC | PRECOND, HAST, UHAST, TC |

V. Bill of Materials:

| | | |
|--------------------------|----------------------|------------------|
| <u>Misc.</u> | Assembly site | ASE |
| | BD Number | AAH@A271280002-0 |
| | MP Code (MPC) | TARA17ABAA02 |
| | Part Number (CPN) | KSZ8842-PMBL-AM |
| | MSL information | MSL3 / 260 |
| <u>Substrate</u> | Core Material | HL832NX |
| | Core Thickness | 200um |
| | L1/L2 Thickness | 18um |
| | SM Material | AUS308 |
| | Process | Normal |
| | SM Thickness | 30+/-10 |
| <u>Bond Wire</u> | Material | Au |
| <u>Die Attach</u> | Part Number | 2100A |
| | Conductive | Yes |
| <u>MC</u> | Part Number | KE-G1250NAS |
| <u>PKG</u> | PKG Type | LFBGA |
| | Pin/Ball Count | 100 |
| | PKG width/size | 9x9x1.38mm |
| | Ball Pitch/Size | 0.8mm / 0.45mm |
| | Solder Ball Material | SAC305 |

VI. Qualification Data:

Package Preconditioning

| | |
|-----------------------|--|
| Test Method/Condition | JEDEC J-STD-020D and JESD22-A113F, MSL Level 3 soak and 260°C peak Reflow Temperature |
| Lot # | Results (Fail/Pass) |
| Lot 1 | 0/255 |
| Lot 2 | 0/255 |
| Lot 3 | 0/255 |

HAST (Highly Accelerated Temperature and Humidity Stress Test)

| | |
|-----------------------|--|
| Test Method/Condition | JESD22-A110, Vin = +3.3V, Ta = +130°C/85%RH, 96 HRS Min SS = 77 units |
| Lot # | Results (Fail/Pass) |
| Lot 1 | 0/82 @ 96 hrs |
| Lot 2 | 0/82 @ 96 hrs |
| Lot 3 | 0/82 @ 96 hrs |

Pre and Post testing was conducted at +25°C, +85°C

UNBIASED HAST

| | |
|-----------------------|--|
| Test Method/Condition | JESD22-A118, Ta = +130°C/85%RH, 96HRS Min SS = 77 units |
| Lot # | Results (Fail/Pass) |
| Lot 1 | 0/82 @ 96 hrs |
| Lot 2 | 0/82 @ 96 hrs |
| Lot 3 | 0/82 @ 96 hrs |

Post testing was conducted at +25°C

Temperature Cycling

| | |
|-----------------------|---|
| Test Method/Condition | JESD22-A104, Ta = -55°C/+125 °C, 500 CYC Min SS = 77 units |
| Lot # | Results (Fail/Pass) |
| Lot 1 | 0/82 @ 500 cycles WBP: 0 fails/5 |
| Lot 2 | 0/82 @ 500 cycles |
| Lot 3 | 0/82 @ 500 cycles |

Pre and Post testing was conducted at +85°C

High Temperature Storage Life

| | |
|-----------------------|---|
| Test Method/Condition | JESD22-A103, Ta = +150 °C, 500 HRS Min SS = 45 units |
| Lot # | Results (Fail/Pass) |
| Lot 1 | 0/50 @ 500 hrs |

Pre and Post testing was conducted at +25°C, +85°C

VII. Wire Pull/Ball Shear

Lot #1:

| Test Item | Sample Size/ Unit | Comment |
|-------------------|-------------------|---------|
| Wire Pull | 30 wires | Pass |
| Ball Shear | 40 balls | Pass |
| Solder Ball Shear | 60 balls | Pass |

Lot #2

| Test Item | Sample Size/ Unit | Comment |
|-------------------|-------------------|---------|
| Wire Pull | 30 wires | Pass |
| Ball Shear | 40 balls | Pass |
| Solder Ball Shear | 60 balls | Pass |

Lot #3

| Test Item | Sample Size/ Unit | Comment |
|-------------------|-------------------|---------|
| Wire Pull | 30 wires | Pass |
| Ball Shear | 40 balls | Pass |
| Solder Ball Shear | 60 balls | Pass |

VIII. Physical Dimension:

| Test Method/Condition | JESD22 -B100 and B108, Min SS = 10 units/lot |
|-----------------------|--|
| Lot # | Results (Fail/Pass) |
| Lot 1 | 0/10 PASS |
| Lot 2 | 0/10 PASS |
| Lot 3 | 0/10 PASS |