

8755 W. Higgins Road Suite 500 Chicago, Illinois USA 60631

Feb 10th, 2021

RE: PCN # ESU270-60 - AQ3118-01ETG additional backend location approval

To our valued customers,

Littelfuse would like to notify you of an additional approved backend location for AQ3118-01ETG TVS Diode Array (SPA® Diodes) product. This new additional backend factory in China is fully approved for all assembly, test, and packing operations. There are no changes to fit, form, and function of the finished product.

Qualification efforts are complete, and the new factory is ramping for shipments. Please see the documentation in the following pages for change details.

The affected product has been fully qualified in accordance with established performance and reliability criteria. Full qualification data and/or samples will be available upon request.

Form, fit, function changes: None Part number changes: None Effective date: Feb 15th, 2021 Replacement products: N/A Last time buy: N/A

This notification is for your information and acknowledgement. If you have any other questions or concerns, please contact Sophia Hu, Assistant Product Manager.

We value your business and look forward to assisting you whenever possible.

Best Regards,

Sophia Hu TVS Diode Array Assistant Product Manager Semiconductor Business Unit, Wuxi, China +86 510 85277701 - 7653 shu@littelfuse.com

| PCN# : | Contact Information | | | |
|--|---|--|--|--|
| ESU270-60 Date: Feb 10 th , 2021 | Name: Sophia Hu | | | |
| Product Identification : | Title: Assistant Product Manager | | | |
| AQ3118-01ETG TVS Diode Array Product | Phone # : +86 13771377277 | | | |
| additional backend location approval | Fax# : N/A | | | |
| Implementation Date for Change: | E-mail : shu@littelfuse.com | | | |
| Feb 15 th , 2021 | | | | |
| Category of Change: De | escription of Change: | | | |
| | pprove additional backend assembly, test, and packing locations for | | | |
| | Q3118-01ETG. There are no changes to fit, form & function of the finished | | | |
| Technology pr | product. | | | |
| Discontinuance/Obsolescence | | | | |
| Equipment | | | | |
| Manufacturing Site | | | | |
| 🖾 Raw Material | | | | |
| Testing | | | | |
| Fabrication Process | | | | |
| □ Other: | | | | |
| Important Dates: | | | | |
| Qualification Samples Available: Availa | ble 🗌 Last Time Buy: | | | |
| Final Qualification Data Available: Avai | lable | | | |
| Date of Final Product Shipment: | | | | |
| Method of Distinguishing Changed Product | | | | |
| Product Mark, See (8.0) in the succeeding PCN report for details | | | | |
| Date Code, | | | | |
| ☐ Other, | | | | |
| Demonstrated or Anticipated Impact on Form, Fit, Function or Reliability: | | | | |
| N/A | | | | |
| LF Qualification Plan/Results: | | | | |
| Yes | | | | |
| Customer Acknowledgement of Receipt: Littelfuse requests you acknowledge receipt of this PCN. In your acknowledgement, you can | | | | |
| grant approval or request additional information. Littelfuse will assume the change is acceptable if no acknowledgement is received within 30 days | | | | |
| of this notice. Lack of any additional response within 90 days of PCN issuance further constitutes acceptance of the change. | | | | |



Prepared By: Jordan Hsieh-Product Engineering Manager, Raider Chen-Product Engineer, Sophia Hu-Assistant Product ManagerDate: 2021/2/5Device: AQ3118-01ETG

Revision : A

1.0 **Objective:**

The purpose of this document is to qualify an additional assembly supplier for AQ3118-01ETG. Summarize the physical, electrical and reliability test performed in qualification lots.

2.0 Applicable Devices:

2.1 Product name: AQ3118-01ETG

3.0 Assembly, Process & Material Differences/Changes:

3.1 Assembly Changes

No change of assemble process.

3.2 Process Changes

No change of process method.

3.3 Material Change

4.0 Packing Method

No change of packing method.

5.0 Physical Differences/Changes:

| AQ3118-01ETG | | | | | |
|---------------------|--------------|---------|---------------|--|--|
| Item | Original | New | Change or not | | |
| Die Attach Material | 8006NS | 8006NS | No | | |
| Wire | Gold | Gold | No | | |
| Mold Compound | CEL-9220HF10 | G770HCD | Yes | | |
| Plating | PPF | PPF | No | | |

6.0 Reliability Test Results Summary:

6.1 AQ3118-01ETG summary report:

| Test Items | Condition | S/S | Results | ETR # |
|----------------------------------|---|--------------|---------|-------------------------|
| Pre-conditioning (PC) | JESD22-A113 | 308 each lot | 0/924 | 79803 76955 78492 |
| DC Blocking (HTRB) | Bias = VRWM, Ta = 150° C, Duration = 1008 Hours | 77 each lot | 0/231 | |
| Temperature Cycle (TC) | $Ta = -55^{\circ}C$ to $+150^{\circ}C$, Duration = 1000 Cycles | 77 each lot | 0/231 | |
| Temperature/Humidity (H3TRB) | Ta = 85°C, 85% RH, Bias = VRWM, Duration = 1008 Hours | 77 each lot | 0/231 | |
| Autoclave (AC) | Ta = 121° C, 100%RH, 2ATM, Duration = 96 Hours | 77 each lot | 0/231 | |
| Resistance to Solder Heat (RSH) | 260°C, 10 sec, M-2031 | 10 each lot | 0/30 | |
| Moisture Sensitivity Level (MSL) | Per Jedec J-STD-020D Level 1 | 308 each lot | 0/924 | |
| Solderability (SD) | ANSI-J-STD-002 | 10 each lot | 0/30 | |

7.0 Electrical Characteristic Summary:

No change in electrical characteristics. Characterization data is available upon request.

8.0 <u>Changed Part Identification:</u>

Both were qualified suppliers and it can be identified by code of CAT NO on the label.

Barcode Scanning Result



9.0 Approvals:

Sophia Hu SPA Assistant Product Manager Littelfuse, Wuxi Jordan Hsieh SPA Product Manager Littelfuse, HsinChu <u>Raider Chen</u> SPA Product Engineer Littelfuse, HsinChu