6133 North River Road
Suite 500
Rosemont, IL 60018 Chicago

Feb 21st, 2025

RE: PCN # ESU270-102- New Wafer Foundry approval for SP3401-02UTG & SP3401-02UTG-ER & SP3401-02UTG-L & SP4322-01ETG

To our valued customer,

Littelfuse would like to notify you that we are going to add a new alternative wafer foundry location for following TVS Diode Array (SPA® Diodes) products. The target foundry site is an existing supplier to Littelfuse, and the affected products are incremental to other Littelfuse products at the site. There are no changes to fit, form, and function of finished products.

The affected products will be fully qualified in accordance with established performance and reliability criteria. Samples would be provided upon your request.

Products Affected:

Product list
SP3401-02UTG
SP3401-02UTG-ER
SP3401-02UTG-L
SP4322-01ETG

Form, fit, function changes: None
Part number changes: None
Effective date: May 21st, 2025 or sooner
Replacement products: N/A
Last time buy: N/A

This PCN is for your information and acknowledgement. If you have any other questions or concerns, please contact your local sales team or product team below for further assistance.

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

6133 North River Road, Suite 500, Rosemont, IL 60018 Chicago

Product/Process Change Notice (PCN)

PCN# :

ESU270-102 Date: Feb 21st, 2025

Product Identification:

A new Wafer Foundry approval for SP3401-02UTG & SP3401-02UTG-ER & SP3401-02UTG-L & SP4322-01ETG

Implementation Date for Change:

May 21st, 2025 or sooner

Contact Information

Name : Sophia Hu

Title : Assistant Product Marketing Manager

Phone # : +86 13771377277

Fax# : N/A

E-mail : shu@littelfuse.com

Category of Change:

☐ Assembly Process
☐ Data Sheet
☐ Technology
☐ Discontinuance/Obsolescence
☐ Equipment
☒ Manufacturing Site
☒ Raw Material
☐ Testing
☐ Fabrication Process
☐ Other: ____________________

Description of Change:

A new Wafer Foundry approval for SP3401-02UTG & SP3401-02UTG-ER & SP3401-02UTG-L & SP4322-01ETG SPA™ TVS Diode Arrays products. There are no changes to fit, form, function of the finished product.

Important Dates:

☒ Qualification Samples Available: Upon request

☐ Last Time Buy:

☒ Final Qualification Data Available: Upon request

☐ Date of Final Product Shipment:

Method of Distinguishing Changed Product

☐ Product Mark,

☒ Date Code,

☒ Other, Littelfuse internal work order documentation

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 : Wayne Wang-Sr. Product Engineering,
Emily Chen-Product Engineer, Sophia Hu-Associate Product Manager
Date : 2025/02/19
Device : Please refer to 2.1.
Revision : A

1.0 Objective:

The purpose of this project is to qualify alternative wafer foundry for TVS Diode Array products. Following pages summarize the physical, electrical and reliability test performed in qualification lots.

2.0 Applicable Devices:

2.1 Product name:

Product list
SP3401-02UTG
SP3401-02UTG-ER
SP3401-02UTG-L
SP4322-01ETG

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.

3.2 Material Change:

Wafer change.

4.0 Packing Method

No change of packing method.

5.0 Physical Differences/Changes:

No change of physical.

6.0 Reliability Test Results Summary:

6.1 **Reliability summary report:**

Test Items	Condition	S/S	Results	ETR #
Pre-conditioning (PC)	JESD22-A113	241 each lot	0/723	TR25-02-014311 TR25-02-014312
DC Blocking (HTRB)	Bias = VRWM, Ta = 150°C, Duration = 1008 Hours	77 each lot	0/231	
Temperature Cycle (TC)	Ta = -55°C to 150°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	
Unbiased HAST (UHAST)	Ta = 130°C, 85%RH, 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	241 each lot	0/723	
Solderability (SD)	J-STD-002	10 each lot	0/30	

7.0 Electrical Characteristic Summary:

Electrical performances were comparable, and characterization data is available upon request.

8.0 Changed Part Identification:

Will control by Littelfuse internal work order documentation and provide to customer once customer requested.

9.0 Approvals:

Sophia Hu
SPA Assistant Product Manager
Littelfuse, Wuxi

Wayne Wang
Sr. SPA Product Engineer
Littelfuse, Wuxi

Emily Chen
SPA Product Engineer
Littelfuse, HsinChu