



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

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Dec 25<sup>th</sup>, 2020

RE: PCN # ESU270-55 – Approval of wafer foundry location & wafer size change for productivity improvement

To our valued customers,

Littelfuse would like to notify you that we are going to change foundry location and change wafer size from 5-inch to 6-inch of below SPA™ TVS Diode Arrays products for productivity improvement. There are no changes to fit, form, function of the finished product.

Qualification efforts are complete. Please see the attached documentation for change details and affected part numbers.

All affected products have been fully qualified in accordance with established performance and reliability criteria. The attached pages summarize the qualification results. Full qualification data and/or samples will be available upon request.

Affected Part Numbers		
AQ2555NUTG	SP2555NUTG	SP4042-02UTG
AQ4020-01FTG	SP3304NUTG	SP4042-02UTG-ER
AQ4020-01FTG-C	SP3304NUTG-ER	SP4042-02UTG-ER1
SLVU2.8-4BTG	SP3312TUTG	SP4044-04ATG
SLVU2.8-8BTG	SP3374NUTG	SP4045-04ATG
SLVU2.8HTG	SP4020-01FTG	SP4050-12UTG-IMP
SP2504NUTG	SP4020-01FTG-C	SP4065-08ATG
SP2504NUTG-C	SP4031-02BTG	SRDA3.3-4BTG
SP2504NUTG-N		

Foundry location	
Current Fab location	New Fab location
150 Kinoko-cho, Ibara-shi, Okayama, Japan	6833 Kinoko-cho, Ibara-shi, Okayama, Japan
Wafer Size	
Current Wafer Size	New Wafer Size
5-inch	6-inch

**Form, fit, function changes: NA**

**Part number changes: None**

**Effective date: Dec 25<sup>th</sup>, 2020**

**Replacement products: N/A**

**Last time buy: NA**

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](mailto:Shu@littelfuse.com)



800 E. Northwest Highway Des Plaines, IL 60016

## Product/Process Change Notice (PCN)

**PCN# :**

ESU270-55 Date: Dec 25<sup>th</sup>, 2020

**Product Identification:**

Littelfuse is going to change foundry location and change wafer size from 5-inch to 6-inch for productivity improvement purpose.

**Implementation Date for Change:**

Mar 25<sup>th</sup>, 2021 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: \_\_\_\_\_ Wafer size \_\_\_\_\_

**Description of Change:**

Littelfuse is going to change foundry location and change wafer size from 5-inch to 6-inch of SPA™ TVS Diode Arrays products for productivity improvement. 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: Dec 25<sup>th</sup>, 2020
- Date of Final Product Shipment:

**Method of Distinguishing Changed Product**

- Product Mark,
- 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** : Sophia Hu-SPA Assistant Product Manager, Jordan Hsieh-SPA Product Engineering Manager,  
Light Hsieh-SPA Product Engineer,  
**Date** : 12/21<sup>th</sup>/2020  
**Device** : All SPA products involved, list in 2.0  
**Revision** : A

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**1.0 Objective:**

The purpose of this project is to qualify wafer size change from 5 inch to 6 inch for all affected SPA products. Succeeding pages summarize the physical, electrical and reliability test performed in qualification lots.

**2.0 Applicable Devices:**

Affected Part Numbers		
AQ2555NUTG	SP2555NUTG	SP4042-02UTG
AQ4020-01FTG	SP3304NUTG	SP4042-02UTG-ER
AQ4020-01FTG-C	SP3304NUTG-ER	SP4042-02UTG-ER1
SLVU2.8-4BTG	SP3312TUTG	SP4044-04ATG
SLVU2.8-8BTG	SP3374NUTG	SP4045-04ATG
SLVU2.8HTG	SP4020-01FTG	SP4050-12UTG-IMP
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SP2504NUTG-C	SP4031-02BTG	SRDA3.3-4BTG
SP2504NUTG-N		

**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

No change of BOM

**4.0 Packing Method**

No change of packing method.

**5.0 Physical Differences/Changes:**

No change in mechanical specification or package outline dimension (POD).

## 6.0 Reliability Test Results Summary:

Test Items	Condition	s/s	Results Defects/Sample Size	ETR#
Pre-conditioning(PC)	24hrs 150°C soak, 168hrs 85°C/85%RH, 3 Reflows of peak temperature 260°C	308 each lot	0 fail of each lot	ETR147602,147605,147606 ETR148942 ETR148948
High Temperature DC Blocking(HTRB)	Bias=VRWM, Ta=150 C, Duration=1008Hours	77 each lot	0 fail of each lot	
Temperature Cycle(TC)	Ta=-55 C to +150 C, 15minutes dwell, Duration=1000 cycle	77 each lot	0 fail of each lot	
Temperature/Humidity(H3TRB)	Ta=85 C, 85%RH, Bias=VRWM, Duration=1008 Hours	77 each lot	0 fail of each lot	
Autoclave(AC)	Ta=121 C, 100%RH, 2 atm, Duration=96 Hours	77 each lot	0 fail of each lot	
Resistance to Soler Heat(RSH)	260 C, 10sec	30 each lot	0 fail of each lot	
Moisture Sensitivity Level(MSL)	Per J-STD-020E Level 1	22 each lot	0 fail of each lot	
Solerability(SD)	Reflow	10 each lot	0 fail of each lot	

## 7.0 Electrical Characteristic Summary:

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

## 8.0 Changed Part Identification:

No change

## 9.0 Recommendations & Conclusions:

Based on the qual test results, it is determined that new wafer foundry location was qualified and certified for production of Littelfuse's datasheet.

## 10.0 Approvals:

Sophia Hu  
SPA Assistant Product Manager  
Littelfuse, Wuxi

Jordan Hsieh  
SPA Product Engineering Manager  
Littelfuse, HsinChu

Light Hsieh  
SPA Product Engineer  
Littelfuse, HsinChu