



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

Nov 18<sup>th</sup>, 2021

RE: PCN # ESU270-75 – DFN0603 additional backend location approval

To our valued customers,

Littelfuse would like to notify you of an additional approved backend location for DFN0603 TVS Diode Array (SPA® Diodes) products. This 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 products.

Qualification efforts are complete, and the new factory is ramping for shipments.

**Products Affected:**

Affected Part Numbers		
SP1006-01UTG	SP0201U-ULC-01UTG	SP1333-01UTG
SP1026-01UTG	SP0201U-ELC-01UTG	SP3213-01UTG
SP3522-01UTG	SP0201B-ULC-01UTG	
SP3530-01UTG	SP0201B-ELC-01UTG	

The 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.

**Form, fit, function changes: None**  
**Part number changes: None**  
**Effective date: Jan 18<sup>th</sup>, 2022 or sooner**  
**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](mailto:shu@littelfuse.com)

<b>PCN# :</b> ESU270-75    Date:    Nov 18 <sup>th</sup> , 2021  Product Identification : DFN0603 additional backend location approval  Implementation Date for Change: Jan 18 <sup>th</sup> , 2022 or sooner	<b>Contact Information</b> Name: Sophia Hu Title: Assistant Product Manager Phone # : +86 13771377277 Fax# : N/A E-mail : shu@littelfuse.com
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<b>Category of Change:</b> <input type="checkbox"/> Assembly Process <input type="checkbox"/> Data Sheet <input type="checkbox"/> Technology <input type="checkbox"/> Discontinuance/Obsolescence <input type="checkbox"/> Equipment <input checked="" type="checkbox"/> Manufacturing Site <input checked="" type="checkbox"/> Raw Material <input type="checkbox"/> Testing <input type="checkbox"/> Fabrication Process <input type="checkbox"/> Other: _____	<b>Description of Change:</b> Approve additional backend assembly, test, and packing location for DFN0603. There are no changes to fit, form & function of the finished products.
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<b>Important Dates:</b> <input checked="" type="checkbox"/> Qualification Samples Available: Upon request <input type="checkbox"/> Last Time Buy: <input checked="" type="checkbox"/> Final Qualification Data Available: Upon request <input type="checkbox"/> Date of Final Product Shipment:	
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<b>Method of Distinguishing Changed Product</b> <input checked="" type="checkbox"/> Product Mark, See (8.0) in the succeeding PCN report for details <input type="checkbox"/> Date Code, <input type="checkbox"/> Other,
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<b>Demonstrated or Anticipated Impact on Form, Fit, Function or Reliability:</b> N/A
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<b>LF Qualification Plan/Results:</b> Yes
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**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-Associate Product Manager  
**Date** : 2021/11/15  
**Device** : Please refer to 2.1 table.  
**Revision** : A

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### 1.0 Objective:

Qualified an additional assembly supplier for DFN0603 products.  
Summarize the physical items, electrical characteristics, and reliability result in qualification lots.

### 2.0 Applicable Devices:

#### 2.1 Product name:

Affected Part Numbers		
SP1006-01UTG	SP0201U-ULC-01UTG	SP1333-01UTG
SP1026-01UTG	SP0201U-ELC-01UTG	SP3213-01UTG
SP3522-01UTG	SP0201B-ULC-01UTG	
SP3530-01UTG	SP0201B-ELC-01UTG	

### 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

DFN0603			
Item	Original	New	Change or not
Lead frame	EFTECT64	MAXELL	Yes
Die Attach Material	Henkel 8008CSM	Hitachi 84-1LMISR4	Yes
Wire	Au	Au	No
Mold Compound	Hitachi GE-300	Sumitomo EME-G750	Yes
Plating	PPF	EF2	Yes

### 4.0 Packing Method

No change of packing method.

### 5.0 Physical Differences/Changes:

No change of this item.

**6.0 Reliability Test Results Summary:**

**6.1 DFN0603 summary report:**

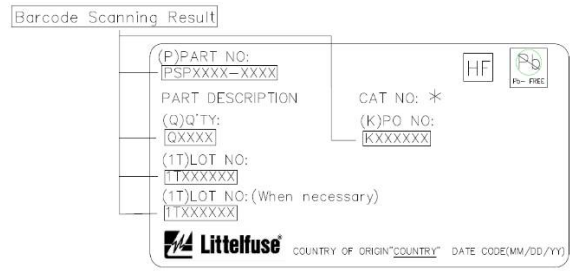
Test Items	Condition	S/S	Results	ETR #
Pre-conditioning (PC)	JESD22-A113	308 each lot	0/924	#162394 #162374 #165494
DC Blocking (HTRB)	Bias = VRWM, Ta = 150°C, Duration = 1008 Hours	77 each lot	0/231	
Temperature Cycle (TC)	Ta = -55°C to 150°C, Duration = 1000 Cycles	77 each lot	0/231	
Temperature/Humidity (H3TRB)	Ta = 85°C, 85% RH, Bias = VRWM, Duration = 1008 Hours	77 each lot	0/231	
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:**

Electrical performance were comparable and characterization data is available upon request.

**8.0 Changed Part Identification:**

All were qualified suppliers and it can be identified by CAT NO on the label.



**9.0 Approvals:**

**Sophia Hu**  
 SPA Assistant Product Manager  
 Littelfuse, Wuxi

**Jordan Hsieh**  
 SPA Product Manager  
 Littelfuse, HsinChu

**Raider Chen**  
 SPA Product Engineer  
 Littelfuse, HsinChu