

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

Nov 18th, 2019

RE: PCN # ESU270-46 - SOD882 alternative backend location approval

To our valued customers,

Littelfuse would like to notify you another newly approved backend location for SOD882 TVS Diode Array (SPA® Diodes) product. This new 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 completed, and the new factory is online for immediate shipments. Please see the documentation in the following pages for change details.

Products Affected:

	SOD882 Part Numbers	
SP1003-01ETG	SPHV12-01ETG	SP0402B-ULC-01ETG
SP1233-01ETG	SPHV15-01ETG	SP0402U-ULC-01ETG
SP3030-01ETG	SPHV24-01ETG	SP0402B-ELC-01ETG
SP3031-01ETG	SPHV36-01ETG	SP0402U-ELC-01ETG
SP3522-01ETG	SPHV12-01ETG-C	
SP3530-01ETG	SPHV15-01ETG-C	
SP3031-01ETG-R	SPHV24-01ETG-C	
	SPHV36-01ETG-C	

The affected product has 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: Feb 18th, 2020 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 Jia Zhu, Product Manager.

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

Best Regards,

Jia Zhu
TVS Diode Array Product Manager
Semiconductor Business Unit, Wuxi, China
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800 E. Northwest Highway Des Plaines, IL 60016

Product/Process Change Notice (PCN)

PCN#:	Contact Information					
ESU270-46 Date: Nov 18, 2019	Name: Jia Zhu					
Product Identification :	Title: Product Marketing Manager					
SOD882 TVS Diode Array Product	Phone #: +86 13913131571					
alternative backend location approval	Fax#: N/A					
Implementation Date for Change:	E-mail: jzhu3@littelfuse.com					
Feb 18, 2020 or sooner						
Category of Change:	Description of Change:					
☐ Assembly Process	Approve another alternated backend assembly, test, and packing					
☐ Data Sheet	locations for SOD882. There are no changes to fit, form & function					
☐ Technology	of the finished product. The affected product has been fully qualified in accordance with all established criteria for performance					
☐ Discontinuance/Obsolescence	and reliability.					
☐ Equipment	All relevant details are included in the supplemental pages.					
☑ Raw Material						
☐ Testing						
☐ Fabrication Process						
☐ Other:						
Important Dates:						
Qualification Samples Available: Available	Last Time Buy:					
☐ Final Qualification Data Available: Available						
☐ Date of Final Product Shipment:						
Method of Distinguishing Changed Product						
igorplus Product Mark, See (8.0) in the succeeding PCN repo	ort 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 as	sume 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.						



PCN Report

ETR # Various

Prepared By : Jia Zhu-SPA Product Manager, Jordan Hsieh-SPA Product Engineering Manager,

Raider Chen-SPA Product Engineer,

Date : 11/15/2019 **Device** : SOD882 products

Revision : A

1.0 Objective:

The purpose of this project is to qualify an alternative assembly supplier for SOD882 products. Succeeding pages summarize the physical, electrical and reliability test performed in qualification lots.

2.0 Applicable Devices:

2.1 Affected Part Numbers

	rs	
SP1003-01ETG	SPHV12-01ETG	SP0402B-ULC-01ETG
SP1233-01ETG	SPHV15-01ETG	SP0402U-ULC-01ETG
SP3030-01ETG	SPHV24-01ETG	SP0402B-ELC-01ETG
SP3031-01ETG	SPHV36-01ETG	SP0402U-ELC-01ETG
SP3522-01ETG	SPHV12-01ETG-C	
SP3530-01ETG	SPHV15-01ETG-C	
SP3031-01ETG-R	SPHV24-01ETG-C	
	SPHV36-01ETG-C	

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

SOD882					
Item	Original	New	Change or not		
Lead frame	Eftect64T	A194	Yes		
Die Attach Material	QMI519	S220	Yes		
Wire	Gold	Gold	No		
Mold Compound	G770HCD	CEL-9240HF	Yes		
Plating	PPF	Tin	Yes		

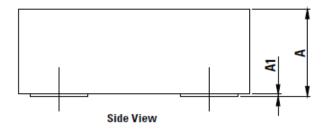
4.0 Packing Method

No change of packing method.

5.0 Physical Differences/Changes:

Only package height of SP3522-01ETG and SP3530-01ETG were changed as below

	Unit: mm						
Symbol	Original			New			
Symbol	MIN	TYP	MAX	MIN	TYP	MAX	
Α	0.4	0.45	0.5	0.45	0.5	0.55	



6.0 Reliability Test Results Summary:

6.1 **SOD882 products summary report:**

Test Items	Condition	S/S	Results	ETR#
Pre-conditioning (PC)	JESD22-A113	JESD22-A113 308 each lot		
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 ea		0/231	ETR129848 ETR129855
Autoclave (AC)	Ta = 121°C, 100%RH, 2ATM, Duration = 96 Hours 77 each lot		0/231	ETR132242
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:

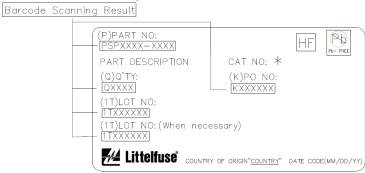
No change in electrical characteristics. Characterization data is available upon request.

8.0 Changed Part Identification:

There are suppliers qualified, detail please refer to below table

Package Type	Pa	rt Number	Original	New
SOD882	R	efer to 2.1	H, S, G, C, M, T	F, H, S, G, C,
				M, T

And it can be identified by code of CAT NO on the label.



9.0 Approvals:

<u>Jia Zhu</u> SPA Product Manager Littelfuse, Wuxi Jordan Hsieh SPA Product Engineering Manager Littelfuse, HsinChu Raider Chen SPA Product Engineer Littelfuse, Hsin, HsinChu