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

Oct 21th, 2015

RE: PCN # ESU270-32 -- SP1006-01UTG Backend Assembly, Test and Packing Location Transfer

To our valued customers,

Littelfuse would like to notify you of an upcoming backend site transfer for SP1006-01UTG TVS Diode Array (SPA® Diodes) product. The backend assembly and packaging operations will begin transitioning from Thailand to China. We reduced height of finished product to align with industry standard profile. Refer to PCN report for details.

Qualification efforts are complete and the new capacity is online for immediate shipments. Please see the attached documentation for change detail 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.

Form, fit, function changes: Reduce height of finished product
Part number changes: None
Effective date: Jan 21th, 2016 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 Tim Micun, Product Manager.

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

Best Regards,

Tim Micun
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800 E. Northwest Highway Des Plaines, IL 60016

Product/Process Change Notice (PCN)

PCN#: ESU270-32 Date: Oct 21, 2015	**Contact Information**
Product Identification:	Name: Tim Micun
SP1006-01UTG of TVS	Title: Product Marketing Manager
Diode Array Products	Phone #: +1 408 409 3657
Implementation Date for Change:	Fax#: N/A
Jan 21, 2016 or sooner	E-mail: tmicun@littelfuse.com

Category of Change:

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

Description of Change:

Transfer backend assembly, test, and packing location for SP1006-01UTG product from current location in Thailand to China.

We reduced height of finished product to align with industry standard profile.

The affected product has been fully qualified in accordance with all established criteria for performance and reliability

All relevant detail is included in the supplemental pages..

Important Dates:

☒ Qualification Samples Available: Oct 21, 2015
☒ Final Qualification Data Available: Oct 21, 2015
☐ Date of Final Product Shipment:
☐ Last Time Buy:

Method of Distinguishing Changed Product

☐ Product Mark,
☐ Date Code,
☒ Other, CAT NO, refer to section 8 in succeeding PCN report

Demonstrated or Anticipated Impact on Form, Fit, Function or Reliability:

None

LF Qualification Plan/Results:

N/A

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.

PCN Report
ETR # 75345

Prepared By : Jordan Hsieh-SPA Product Engineering Manager,
: Ming-Huan Ko-SPA Product Engineer
Date : Oct/15/2015
Device : SP1006-01UTG Product
Revision : C

1.0 Objective:

The purpose of this project is to qualify a new assembly location for SP1006-01UTG product. We will no longer manufacture SP1006-01UTG at the original assembly location; however we will continue to manufacture SP1006-01UTG at the new assembly location. Succeeding pages summarize the physical, electrical and reliability test performed in qualification lot.

2.0 Applicable Devices:

Part Numbers
SP1006-01UTG

3.0 Assembly, Process & Material Differences/Changes:

3.1 Assembly and Process Changes

There are no changes in the assembly and process method.

3.2 Material Changes

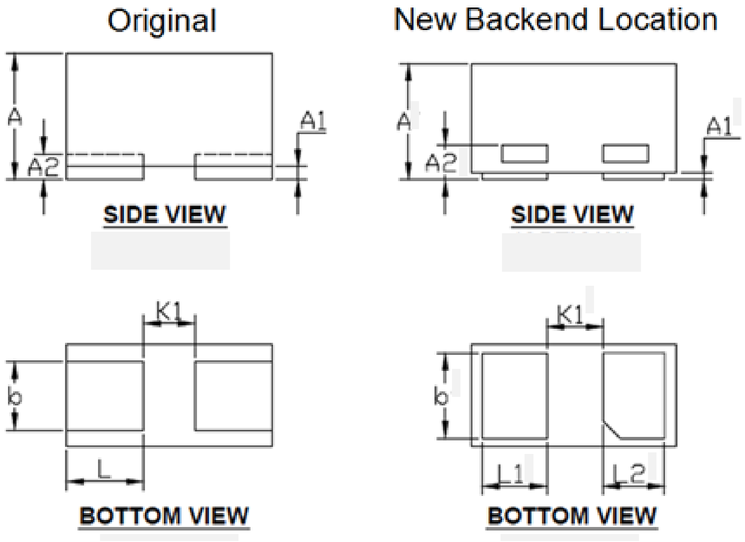
Material	SP1006-01UTG				
	Original		New		Changed?
	Material Name	Supplier	Material Name	Supplier	
Leadframe	EFTECT64T	ASM	EFTECT64T	ASM	No
Die Attach Material	CDF200	HENKEL	8008MD	HENKEL	Yes
Au Wire	20um	TANAKA	20um	KangQiang	Yes
Molding Compound	CELL9220HF13H	Hitachi Chemical	GE-300LCF	SUMITOMO BAKELITE	Yes
Wafer	LFZE105A		LFZE105A		No
Lead Finish	Ni,Pd,Au	ASM	Matte Tin	Tianshui Long Bo	Yes

4.0 Packing Method

There will be no changes in the packing method.

5.0 Physical Differences/Changes:

Unit thickness of new backend location is thinner than original one and pad dimension is different with original. There are no changes in the others mechanical specification or package outline dimension (POD).



Original		New Backend Location	
A	0.37	A	0.30
A1	0.025	A1	0.02
A2	0.075	A2	0.10
b	0.20	b	0.25
K1	0.15	K1	0.165
L	0.225	L1	0.19
--	--	L2	0.18

Unit: mm

6.0 Reliability Test Results Summary:

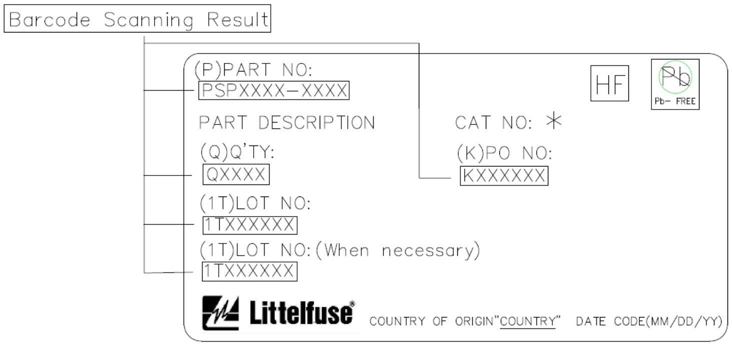
Test Items	Condition	S/S	Results	ETR #
Precondition	Bake 24hr @ 150°C	320	0/311	ETR 75345
DC Blocking(HTRB)	Bias = 5V Ta = 155°C Duration = 1008 Hours	160	0/77	
Temperature Cycle	Ta = -55°C to +150°C Duration = 1000 Cycles	80	0/77	
Temperature/Humidity (H^3TRB)	Bias=5V Ta = 85°C, 85% RH Duration = 1008 Hours	79	0/79	
Autoclave	Ta = 121°C, 100%RH, 15psi Duration = 96 Hours	80	0/78	
Moisture Sensitivity Level(MSL)	Refer to Precondition Test	80	0/311	

7.0 Electrical Characteristic Summary:

There is no change in electrical characteristics. Characterization data is available upon request.

8.0 Changed Part Identification:

To distinguish different manufacturing locations please refer to labeling information as CAT NO:



Original	New Backend location
CAT No : H	CAT No : T

9.0 Recommendations & Conclusions:

Based on the test results, it is determined that the new assembly location is qualified and certified for production of Littelfuse® SP1006-01UTG product.

10.0 Approvals:

Jordan Hsieh
SPA Product Engineering Manager
Littelfuse, Hsinchu