



Expertise Applied | Answers Delivered

Mar, 31<sup>st</sup> , 2015

RE: LFPCN41222

To: Our Valued Customers.

From: Littelfuse Product Management Team

Subject: A-rated DO-214AA SIDACtor<sup>®</sup> Devices Optimization

Littelfuse would like to implement die optimization on DO -214AA package A-rated SIDACtor<sup>®</sup> to achieve lower capacitance, while continuing supports good margin to meet the min lpp spec across all the various waveform defined in the datasheet spec

Please refer to next pages for optimized parameter and to attachment for affected Part number list

There are slight changes on capacitance ,no change on reliability, also there is no change to fit, form, and function of the finished product and electrical parameter.

Form, Fit, Function Changes: None

Part Number Changes: None

Effective Date: July, 1<sup>st</sup> , 2015

Migration Period: July 1<sup>st</sup> 2015 to Sep 1<sup>st</sup> 2015

Replacement Products: N/A

Last Time Buy: N/A

If you have any other question or concerns, please contact Littelfuse<sup>®</sup> local sales representative, or Meng Wang, Assistant Product Manager for further assistance.

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

Best Regards,

Meng Wang

Assistant Product Manager

Commodity TVS and SIDACtor

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## Product/Process Change Notice (PCN)

**PCN#:** LFPCN41222 **Date:** Mar 31st 2015

**Product Identification:**

DO-214AA SIDACtor®

A-rating Products

**Implementation Date for Change:**

July 1<sup>st</sup> 2015

### Contact Information

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**Title:** Assistant Product Manager

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### Category of Change:

- Assembly Process
- Data Sheet
- Technology
- Discontinuance/Obsolescence
- Equipment
- Manufacturing Site
- Raw Material
- Testing
- Fabrication Process
- Other: \_\_\_\_\_

### Description of Change:

Littelfuse would like to implement die optimization on DO214AA package A-rated SIDACtor® to achieve lower capacitance, while continuing supports good margin to meet the min Ipp spec across all the various waveform defined in the datasheet spec , there is no change to Fit, Form and function

This PCN is to seek customer approval to implement this optimization

### Important Dates:

- Qualification Samples Available: Mar 31<sup>st</sup> 2015  Last Time Buy: N/A
- Final Qualification Data Available: Mar 31<sup>st</sup> 2015
- Date of Final Product Shipment: N/A

### Method of Distinguishing Changed Product

- Product Mark, N/A
- Date Code, 5Gxxx
- Other,

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

N/A

### LF Qualification Plan/Results:

available , see attached next page

**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.

## Datasheet change Summary

Change	Capacitance				ITSM	
	before		after		before	after
Part Number	pF min	pF max	pF min	pF max	A min	A min
P0080SALRP	25	35	20	40	20	25
P0220SALRP	25	150	20	40	20	25
P0300SALRP	15	140	20	40	20	25
P0640SALRP	40	60	15	40	20	25
P0720SALRP	35	60	15	40	20	25
P0900SALRP	25	55	15	40	20	25
P1100SALRP	30	50	15	40	20	25
P1300SALRP	25	45	15	40	20	25
P2100SALRP	20	35	15	40	20	25
P2500SALRP	20	35	15	40	20	25
P1200SALRP	30	45	15	40	20	25
P1500SALRP	25	40	15	40	20	25
P1800SALRP	25	35	15	40	20	25
P2000SALRP	25	35	15	40	20	25
P2300SALRP	25	35	15	40	20	25
P2600SALRP	20	35	15	40	20	25
P3100SALRP	15	50	15	40	20	25
P3500SALRP	15	50	15	40	20	25
P0080SAMCLRP	25	55	10	35	20	25
P0220SAMCLRP	25	50	10	35	20	25
P0300SAMCLRP	15	35	10	35	20	25
P566P0300SALRP	n/a	n/a	20	40	n/a	25
P651P3100SARP	n/a	n/a	15	40	n/a	25
P658P0300SARP	n/a	n/a	20	40	n/a	25
P659P0640SARP	n/a	n/a	15	40	n/a	25
P675P1100SARP	n/a	n/a	15	40	n/a	25
P688P1100SARP	n/a	n/a	15	40	n/a	25
P695P0300SARP	n/a	n/a	20	40	n/a	25
P697P1300SARP	n/a	n/a	15	40	n/a	25
P707P3100SARP	n/a	n/a	15	40	n/a	25
P712P0640SARP	n/a	n/a	15	40	n/a	25
P716P3500SARP	n/a	n/a	15	40	n/a	25
P776P2000SALRP	n/a	n/a	15	40	n/a	25
P779P1800SALRP	n/a	n/a	15	40	n/a	25
P807P0080SAMCLRP	n/a	n/a	10	35	n/a	25
P811P1200SALRP	n/a	n/a	15	40	n/a	25
P817P0080SALRP	n/a	n/a	20	40	n/a	25
P818P0220SALRP	n/a	n/a	20	40	n/a	25

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 Jiangsu, China

## Memorandum

To: Those who may concern  
 From: Gimmy Shi, Senior Product Engineer, Littelfuse.  
 Date: Feb 28<sup>th</sup>, 2015  
 Subject: **Qualification test result for All DO-214AA A rated SIDACtor<sup>®</sup> optimization**

This report is to summarize the qualification result of P0080SALRP; P3100SALRP; P3500SALRP..  
 This test result covers all SMB A rating series and their special devices.

### 1. Qualification sample

Product Series	Part Number	Assy Lot	Remark
SMB series	P0080SALRP P3500SALRP	CONTROL LOT	DC/AC Blocking/TC/PCT/H3TRB/RSH
SMB series	P0080SALRP	TEST LOT	DC/AC Blocking/TC/PCT/H3TRB/RSH
	P3100SALRP	TEST LOT	DC/AC Blocking/TC/PCT/H3TRB/RSH
	P3500SALRP	TEST LOT	DC/AC Blocking/TC/PCT/H3TRB/RSH
	P3500SALRP	TEST LOT	DC/AC Blocking/TC/PCT/H3TRB/RSH
	P3500SALRP	TEST LOT	DC/AC Blocking/TC/PCT/H3TRB/RSH

### 2. Reliability test items and result summary

Reliability Part Number: P0080SALRP; P3100SALRP; P3500SALRP

Test Category	Description	Contents	Part number	Lot type	SS/Lot	Lot Quantity	Result	ETR
Reliability	Pre-condition	JESD22-A113 Sensitivity Level 1	P0080SALRP	CONTROL LOT	120	1 lot	Passed	
			P3500SALRP	CONTROL LOT		1 lot		
			P0080SALRP	TEST LOT		1 lot		
			P3100SALRP	TEST LOT		1 lot		
			P3500SALRP	TEST LOT		3 lot		
	DC - AC Blocking (HTRB)	125C, DC/AC bias(peak) = 80% rated VDRM,1008hrsc	P0080SALRP	CONTROL LOT	77	1 lot	Passed	
			P3500SALRP	CONTROL LOT		1 lot		
			P0080SALRP	TEST LOT		1 lot		
			P3100SALRP	TEST LOT		1 lot		
			P3500SALRP	TEST LOT		3 lot		
	Temp Cycle	-65C --- +150C,100 cycle time	P0080SALRP	CONTROL LOT	40	1 lot	Passed	
			P3500SALRP	CONTROL LOT		1 lot		
			P0080SALRP	TEST LOT		1 lot		
	H3RTB	85C/85%RH,80% Vdrm, 1008hs	P3100SALRP	TEST LOT	40	1 lot	Passed	
			P3500SALRP	TEST LOT		1 lot		
P3500SALRP			TEST LOT	3 lot				
Autoclave	121C, 100%RH,96hrs	P0080SALRP	CONTROL LOT	40	1 lot	Passed		
		P3500SALRP	CONTROL LOT		1 lot			
		P0080SALRP	TEST LOT		1 lot			
RSH	260C x 30sec	P3100SALRP	TEST LOT	30	1 lot	Passed		
		P3500SALRP	CONTROL LOT		1 lot			
		P3500SALRP	TEST LOT		3 lot			

Test Category	Description	Contents	Part number	Lot type	SS/Lot	Lot Quantity	Result	ETR
Parametric	ITSM		P0080SALRP P3500SALRP P0080SALRP P3100SALRP P3500SALRP	CONTROL LOT CONTROL LOT TEST LOT TEST LOT TEST LOT	10	1 lot 1 lot 1 lot 1 lot 3 lot	Passed	ETR#65444 ETR#66140 ETR#53429 ETR#54332 ETR#55477
	Surge out 2x10us	+/- 1 hit, 10% IFF per step	P0080SALRP P3500SALRP P0080SALRP P3100SALRP P3500SALRP	CONTROL LOT CONTROL LOT TEST LOT TEST LOT TEST LOT	10	1 lot 1 lot 1 lot 1 lot 3 lot	Passed	
	Surge out 8x20us	+/- 1 hit, 10% IFF per step	P0080SALRP P3500SALRP P0080SALRP P3100SALRP P3500SALRP	CONTROL LOT CONTROL LOT TEST LOT TEST LOT TEST LOT	10	1 lot 1 lot 1 lot 1 lot 3 lot	Passed	
	Surge out 10x700us	+/- 1 hit, 10% IFF per step	P0080SALRP P3500SALRP P0080SALRP P3100SALRP P3500SALRP	CONTROL LOT CONTROL LOT TEST LOT TEST LOT TEST LOT	10	1 lot 1 lot 1 lot 1 lot 3 lot	Passed	
	Surge out 10x1000us	+/- 1 hit, 10% IFF per step	P0080SALRP P3500SALRP P0080SALRP P3100SALRP P3500SALRP	CONTROL LOT CONTROL LOT TEST LOT TEST LOT TEST LOT	10	1 lot 1 lot 1 lot 1 lot 3 lot	Passed	
	Capacitance	Bias 2V, 1MHZ	P0080SALRP P3500SALRP P0080SALRP P3100SALRP P3500SALRP	CONTROL LOT CONTROL LOT TEST LOT TEST LOT TEST LOT	10	1 lot 1 lot 1 lot 1 lot 3 lot	Passed	
	IS measurement	Keytek	P0080SALRP P3500SALRP P0080SALRP P3100SALRP P3500SALRP	CONTROL LOT CONTROL LOT TEST LOT TEST LOT TEST LOT	10	1 lot 1 lot 1 lot 1 lot 3 lot	Passed	
	VS measurement	Keytek	P0080SALRP P3500SALRP P0080SALRP P3100SALRP P3500SALRP	CONTROL LOT CONTROL LOT TEST LOT TEST LOT TEST LOT	10	1 lot 1 lot 1 lot 1 lot 3 lot	Passed	

Notes: All of qualification test were passed qualified LF critical standard.

### 3. FAB Process & Material Differences/Changes:

#### 3.1 Wafer and Process Changes

There are die optimization in the FAB.

### 4. Assembly, Process & Material Differences/Changes:

#### 4.1 Assembly and Process Changes

There are no significant changes in the assembly and process method.

### 5. Packaging Method

There will be no changes in the packing method.

### 6. Marking Method

There will be no changes in the marking method.

### 7. Physical Differences/Changes

There is no change in mechanical specification or package outline dimension (POD).

### 8. Electrical Characteristic Summary:

There is slight capacitance change in electrical characteristics. Characterization data is available upon request.



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**9. Changed Part Identification**

There is no change in Part Identification.

**10. Recommendations & Conclusions:**

Based on the test results, it was determined that the redesign chips for DO-214AA A-rated SIDACTor were qualified and certified for mass productions, please refer to attachment for affected part list