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Chicago, Illinois USA 60631

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August 15, 2024

**PCN # ESW490-59 – Alternate Backend Location Approval of TO-92 Package Low Power Thyristor**

To our valued customers,

Littelfuse would like to notify you of a newly approved backend location for TO-92 Low Power Thyristor products with BCP consideration. The factory is fully approved for all assembly, test and packing operations.

Qualification efforts are complete. Please see the attached pages for change details, qualification results and affected part numbers. Full qualification data and/or samples will be available upon request.

**Form, fit, function changes:** N/A  
**Part number changes:** None  
**Effective date:** November 13, 2024  
**Replacement products:** N/A  
**Last time buy:** N/A

This notification is for your information and acknowledgement. If you require specific data or product samples to certify this change, please contact Littelfuse within 90 days of the notification date.

If you have any other questions or concerns, please contact me or your local sales team.

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

Best Regards,

Maggie Xu  
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## Product/Process Change Notice (PCN)

**PCN#:** ESW490-59    **Date:** August 15, 2024

**Product Identification:**

TO-92 Package Low Power Thyristor

**Implementation Date for Change:**

November 13, 2024

### Contact Information

**Name:** Maggie Xu

**Title:** Technical Support 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:

Approve an alternate backend assembly, test and packing location for TO-92 package Low Power Thyristor products with BCP consideration.

There are no changes in fit, form, function of the finished products. The affected products have been fully qualified in accordance with established performance and reliability.

### Important Dates:

- Qualification Samples Available: 8/15/2024                       Last Time Buy:
- Final Qualification Data Available: 8/15/2024
- Date of Final Product Shipment:

### Method of Distinguishing Changed Product

- Product Mark,
- Date Code, Traceability data available upon request
- Other,

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

N/A

### LF Qualification Plan/Results:

All affected products have been fully qualified in accordance with established performance and reliability criteria.

**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

**Prepared By** : Maggie XU, Technical Support Manager  
**Date** : August 15, 2024  
**Products** : TO-92 Package Low Power Thyristor  
**Revision** : A

## 1.0 Objective:

This PCN is to qualify an alternate backend manufacturing site for TO-92 package low power Thyristor products' assembly, test, and packing operations. There is no change in the die / wafer.



## 2.0 Applicable Products:

TO-92 Package Low Power Thyristor Products.  
Please see the attachments for a full list of affected part numbers.

## 3.0 Physical Differences/Changes:

There is no form, fit, function changes related to this PCN.  
All dimensions are the same without any change of datasheet specification.

There are slight differences in reel pack appearance and inner box dimension.

Item	Current	New Alternate
Reel pack appearance		
Inner box dimension	395mm x 375mm x 56mm	370mm x 370mm x 50mm



#### 4.0 Qualification Test Result

All samples passed parametric and reliability test standard by Littelfuse.

Test Item	Sample P/N	Sample QTY	Littelfuse test Ref#	Contents/Conditions	Duration	Result Summary
ACBV (HTRB)	S8X5ECS	77 x 1	TR23-03-00163 TR23-03-00104 TR23-03-00331 TR23-03-00333	At T <sub>J</sub> max, Reverse biased at 100%V <sub>DRM</sub>	1,008hrs	PASS
	S6002ES	77 x 1				
	L0103NERP	77 x 1				
	L0103MEAP	77 x 1				
H3TRB	S8X5ECS	77 x 1		T <sub>A</sub> =85°C, RH=85%, Reverse biased at 160/320V <sub>DC</sub>	1,008hrs	PASS
	S6002ES	77 x 1				
	L0103NERP	77 x 1				
	L0103MEAP	77 x 1				
Temperature Cycling	S8X5ECS	77 x 1		-55°C & 150°C (air to air), Dwell time 15mins	1,000 cycles	PASS
	S6002ES	77 x 1				
	L0103NERP	77 x 1				
	L0103MEAP	77 x 1				
UHASt	S8X5ECS	77 x 1		T <sub>A</sub> =130°C, RH=85%	96hrs	PASS
	S6002ES	77 x 1				
	L0103NERP	77 x 1				
	L0103MEAP	77 x 1				
IOL	S8X5ECS	77 x 1		T <sub>A</sub> =25°C, ΔT <sub>J</sub> =100°C	1,008hrs	PASS
	S6002ES	77 x 1				
	L0103NERP	77 x 1				
	L0103MEAP	77 x 1				
ESD	S8X5ECS	30 x 1		HBM 30KV		PASS
	S6002ES	30 x 1				
	L0103NERP	30 x 1				
	L0103MEAP	30 x 1				
RSH	S8X5ECS	10 x 1		260°C	10 secs	PASS
	S6002ES	10 x 1				
	L0103NERP	10 x 1				
	L0103MEAP	10 x 1				
Solderability	S8X5ECS	10 x 1	245°C	10 secs	PASS	
	S6002ES	10 x 1				
	L0103NERP	10 x 1				
	L0103MEAP	10 x 1				

#### 5.0 Recommendations & Conclusions:

Based on the above qualification test results, Littelfuse concluded new alternate backend location can pass the release criterion and ready to start mass production for affected products.



**Appendix A: Affected Part Number List**

LX803DERP	S8X5ECSR	S402ES1RP
LX803DEAP	S8X5ESAP	S602ES1
LX803ME	S4X8ES	S602ES1RP
LX803MERP	S4X8ESRP	S602ES1AP
LX803MEAP	S4X8ESAP	S602ECS
LX807DE	S6X8ES	S602ECSR
LX807DERP	S6X8ESRP	S602ECSAP
LX807DEAP	S6X8ESAP	MCR100-6
LX807ME	S8X8ES	MCR100-6RP
LX807MERP	S8X8ESRP	MCR100-8
LX807MEAP	S8X8ESAP	MCR100-8RP
L0103DE	S4X8ES1	S6002ES
L0103DERP	S4X8ES1RP	S6002ESRP
L0103DEAP	S4X8ES1AP	S6002ESAP
L0103ME	S6X8ES1	S802ECS
L0103MERP	S6X8ES1RP	S802ECSR
L0103MEAP	S6X8ES1AP	S802ECSAP
L0103NE	S8X8ES1	S887S6X8ESRP
L0103NERP	S8X8ES1RP	S987S602ECS
L0103NEAP	S8X8ES1AP	S8X5ECS2
L0107DE	S4X8ES2	S8X5ECS2RP
L0107DEAP	S4X8ES2AP	S8X5ECS2AP
L0107ME	S6X8ES2	
L0107MERP	S6X8ES2RP	
L0107MEAP	S6X8ES2AP	
L0107NE	S6X8ECS2	
L0107NERP	S6X8ECS2RP	
L0107NEAP	S6X8ECS2AP	
L0109DE	S8X8ES2	
L0109DERP	S8X8ES2RP	
L0109DEAP	S8X8ES2AP	
L0109ME	S402ES	
L0109MERP	S402ESRP	
L0109MEAP	S402ESAP	
L0109NE	S602ES	
L0109NERP	S602ESRP	
L0109NEAP	S602ESAP	
Q1431L0103NERP	S402ES1	