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Mar 27th, 2024

RE: LFPCN#41509 - Littelfuse SIDACtor MS-013(6 Pin) Package Pin 1 Indicator Change

To: Our Valued Customers

This is an information-only announcement of a Pin 1 indicator change to SIDACtor MS-013 (6 Pin) products currently offered by Littelfuse.

Item	Before	After
Pin 1 (Sample: P3206UCLRP)		

The electrical performance of the affected product will remain within the existing datasheet specifications. The fit, function, and reliability of affected products will remain same.

All affected products have been fully qualified in accordance with established performance and reliability criteria. Please refer to the attached affected parts list and documentation for qualification result and change details.

Form, fit, function changes: No change to fit & function.

Part number changes: None

Effective date: Immediate effective from Date Code 4AT01

Replacement products: N/A

Last time buy: N/A

This notification is for your information. If you have any other questions or concerns, please contact your local sales team or product team below for further assistance.

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



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Product/Process Change Notice (PCN)

PCN# : LFPCN#41509 Date : Mar 27th , 2024

Product Identification:

SIDACTor products MS-013(6 Pin) package

Implementation Date for Change:

Immediate effective from Date Code 4AT01

Category of Change:

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

Description of Change:

This is an information-only announcement of a Pin 1 indicator change to MS-013 (6 Pin) products currently offered by Littelfuse.

Item	Before	After
Pin 1 (Sample: P3206UCLRP)		

Important Dates:

- ☒ Qualification Samples Available: not applicable
- ☒ Final Qualification Data Available: not applicable
- ☐ Date of Final Product Shipment:
- ☐ Last Time Buy:

Method of Distinguishing Changed Product

- ☐ Product Mark
- ☒ Date Code
- ☐ Other

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

N/A

LF Qualification Plan/Results:

Littelfuse Qualification Report is available and full detail data available upon request

Customer Acknowledgement of Receipt:

PCN Report

Prepared By : Wilson Wu, Senior Product Engineer
Date : March 25th, 2024
Device : MS-013(6 Pin) Commercial SIDACtor Products
Revision : 1

1.0 Objective:

The purpose of this project is to qualify new molding machine for Littelfuse MS-013(6 Pin) Commercial SIDACtor Products.

2.0 Applicable Devices:

MS-013(6 Pin) Commercial SIDACtor Product Series

3.0 Assembly, Process & Material Differences/Changes:

3.1 Assembly and Process Changes

There are no significant changes in the assembly and process method, except Molding Machine is changed as below:

Item	Before	After
Molding Machine Type	AMS-24-M	450-7TON T.M.P
Molding Machine Supplier	Mold Press: Fico Mold Chase: Fico	Mold Press: FUSHI SHAJIA Mold Chase: GUOSHANG

3.2 Material Changes

There are no significant changes in the material.

4.0 Packing Method

There will be no changes in the packing method.

5.0 Physical Differences/Changes:

There is no change in mechanical specification or package outline dimension (POD). Product appearance is as below, only Pin 1 is changed.

Item	Before	After
Pin 1 (Sample: P3206UCLRP)		

6.0 Reliability Test Results Summary:

Test Items	Condition	S/S	Results	ETR #
High Temperature, DC Blocking(HTRB)	Bias = 80%VDRM, Ta = 125°C Duration = 1008 Hours	77	0/77	TR24-010006572
Temperature Cycle (TC)	Ta = -55°C to +150°C Duration = 1000 Cycles 15 minutes dwell	40	0/40	
High Temperature & Humidity with Bias(H3TRB)	Ta = 85°C, 85% RH Bias=52V Duration = 1008 Hours	40	0/40	
Unbiased HAST(UHAST)	Ta = 130°C, 85%RH, 2ATM Duration = 96 Hours	40	0/40	
Moisture Sensitivity Level(MSL)	JEDEC/IPC J-STD-020	11	0/11	

Remark:

- Tests are conducted without a bias condition unless otherwise stated.
- Reliability data from product tests that is representative of similar products having structural similarity, commonality of production processes and product technology will be generically applied to those products.
- Tests are conducted on **P3203UALRP**.

Estimate of Failure Rate, MTBF, FITS for a Given Operation Temperature (See note)

Temp °C	% FR/khrs	MTBF (K)	FITS
30	0.000122737	814749.06	1.23
60	0.003854229	25945.52	38.54
80	0.02770893	3608.94	277.09
100	0.161239683	620.19	1612.40
125	1.136273229	88.01	11362.73

Note: The **Mean-Time-Between-Failure** (MTBF) in hours and the percent failure rate per 1000 hours (%FR/khr) are computed at a 60% confidence level using the chi square method and the Arrhenius derating model for various junction operating temperatures. For the calculations, a value of 1 eV was used for the activation energy.

7.0 Electrical Characteristic Summary:

There is no change in electrical characteristics.

8.0 Changed Part Identification:

NA

9.0 Recommendations & Conclusions:

Based on the test results, it is determined that the new molding machine is qualified and certified for Littelfuse MS-013(6 Pin) Commercial SIDACTor Products.

10.0 Approvals:



Peter Liu
Asia OSAT Product Engineering Manager

Appendix I – Affected part number list

PN	PN	PN	PN	PN	PN	PN
A2106UC3LR P	B3164UALR P	P2103UBLTP	P0904UCMCLT P	P0724UCLT P	P3104UBLRP	P2106UCLT P
A2106UC3LT P	B3164UALTP	P2103UCLRP	P1104UCMCLR P	P0904UALR P	P3104UBLTP	P2356UALR P
A5030UC3LR P	B3164UCLR P	P2103UCLTP	P1104UCMCLT P	P0904UALTP	P3104UCLRP	P2356UALTP
A5030UC3LT P	B3164UCLT P	P2353UALRP	P1304UCMCLR P	P0904UBLR P	P3104UCLTP	P2356UBLR P
A2106UA6LR P	B3204UALR P	P2353UALTP	P1304UCMCLT P	P0904UBLTP	P3504UALRP	P2356UBLTP
A2106UA6LTP	B3204UALTP	P2353UBLRP	P1504UCMCLR P	P0904UCLR P	P3504UALTP	P2356UCLR P
A2106UB6LR P	B3204UCLR P	P2353UBLTP	P1504UCMCLT P	P0904UCLT P	P3504UBLRP	P2356UCLT P
A2106UB6LTP	B3204UCLT P	P2353UCLRP	P1804UCMCLR P	P1104UALR P	P3504UBLTP	P2706UALR P
A2106UC6LR P	PLED6U4RP	P2353UCLTP	P1804UCMCLT P	P1104UALTP	P3504UCLRP	P2706UALTP
A2106UC6LT P	PLED6U4TP	P2703UALRP	P2304UCMCLR P	P1104UBLR P	P3504UCLTP	P2706UBLR P
A3406UA6LR P	P0641UALR P	P2703UALTP	P2304UCMCLT P	P1104UBLTP	P585P2604UAR P	P2706UBLTP
A3406UA6LTP	P0641UALTP	P2703UBLRP	P2604UCMCLR P	P1104UCLR P	P585P2604UAT P	P2706UCLR P
A3406UB6LR P	P0721UALR P	P2703UBLTP	P2604UCMCLT P	P1104UCLT P	P1556UCMCLR P	P2706UCLT P
A3406UB6LTP	P0721UALTP	P2703UCLRP	P3104UCMCLR P	P1304UALR P	P1556UCMCLTP	P3206UALR P
A3406UC6LR P	P0901UALR P	P2703UCLTP	P3104UCMCLT P	P1304UALTP	P1806UCMCLR P	P3206UALTP
A3406UC6LT P	P0901UALTP	P3203UALRP	P3504UCMCLR P	P1304UBLR P	P1806UCMCLTP	P3206UBLR P
A3614UC6LR P	P1101UALR P	P3203UALTP	P3504UCMCLT P	P1304UBLTP	P2106UCMCLR P	P3206UBLTP
A5030UA6LR P	P1101UALTP	P3203UBLRP	P0084UALRP	P1304UCLR P	P2106UCMCLTP	P3206UCLR P
A5030UA6LTP	P1701UALR P	P3203UBLTP	P0084UALTP	P1304UCLT P	P2356UCMCLR P	P3206UCLT P
A5030UB6LR P	P1701UALTP	P3203UCLRP	P0084UAMCLR P	P1504UALR P	P2356UCMCLTP	P3406UALR P
A5030UB6LTP	P0641UCLR P	P3203UCLTP	P0084UAMCLT P	P1504UALTP	P2706UCMCLR P	P3406UALTP
A5030UC6LR P	P0641UCLT P	P3403UALRP	P0084UAMCTP	P1504UBLR P	P2706UCMCLTP	P3406UBLR P
A5030UC6LT P	P0721UCLR P	P3403UALTP	P0084UBLRP	P1504UBLTP	P3206UCMCLR P	P3406UBLTP
B1101UC4LR P	P0721UCLT P	P3403UBLRP	P0084UBLTP	P1504UCLR P	P3206UCMCLTP	P3406UCLR P
B1101UC4LT P	P0901UCLR P	P3403UBLTP	P0084UCLRP	P1504UCLT P	P3406UCMCLR P	P3406UCLT P
B1161UC4LR P	P0901UCLT P	P3403UCLRP	P0084UCLTP	P1804UALR P	P3406UCMCLTP	P5106UALR P
B1161UC4LT P	P1101UCLR P	P3403UCLTP	P0304UALRP	P1804UALTP	P5106UCMCLR P	P5106UALTP
B1101UALRP	P1101UCLT P	P5103UALRP	P0304UALTP	P1804UBLR P	P5106UCMCLTP	P5106UBLR P
B1101UALTP	P1701UCLR P	P5103UALTP	P0304UAMCLR P	P1804UBLTP	P1556UALRP	P5106UBLTP
B1101UCLRP	P1701UCLT P	P5103UBLRP	P0304UAMCLT P	P1804UCLR P	P1556UALTP	P5106UCLR P
B1101UCLTP	P1553UALR P	P5103UBLTP	P0304UBLRP	P1804UCLT P	P1556UBLRP	P5106UCLT P

B1161UALRP	P1553UALTP	P5103UCLRP	P0304UBLTP	P2304UALR P	P1556UBLTP	
B1161UALTP	P1553UCLR P	P5103UCLTP	P0304UCLRP	P2304UALTP	P1556UCLRP	
B1161UCLRP	P1553UBLTP	P576P5103UCLR P	P0304UCLTP	P2304UCLR P	P1556UCLTP	
B1161UCLTP	P1553UCLR P	P576P5103UCRP	P0644UALRP	P2304UBLTP	P1806UALRP	
B1201UALRP	P1553UCLT P	P582P3203UBRP	P0644UALTP	P2304UCLR P	P1806UALTP	
B1201UALTP	P1803UALR P	P0084UCMCLRP	P0644UBLRP	P2304UCLT P	P1806UBLRP	
B1201UC4LR P	P1803UALTP	P0084UCMCLTP	P0644UBLTP	P2604UALR P	P1806UBLTP	
B1201UC4LT P	P1803UCLR P	P0304UCMCLRP	P0644UCLRP	P2604UALTP	P1806UCLRP	
B1201UCLRP	P1803UBLTP	P0304UCMCLTP	P0644UCLTP	P2604UCLR P	P1806UCLTP	
B1201UCLTP	P1803UCLR P	P0644UCMCLRP	P0724UALRP	P2604UBLTP	P2106UALRP	
B3104UALRP	P1803UCLT P	P0644UCMCLTP	P0724UALTP	P2604UCLR P	P2106UALTP	
B3104UALTP	P2103UALR P	P0724UCMCLRP	P0724UBLRP	P2604UCLT P	P2106UBLRP	
B3104UCLRP	P2103UALTP	P0724UCMCLTP	P0724UBLTP	P3104UALR P	P2106UBLTP	
B3104UCLTP	P2103UCLR P	P0904UCMCLRP	P0724UCLRP	P3104UALTP	P2106UCLRP	