

Features

- Fast switching
- Automatic reset
- SMB package
- Suitable for industrial lighting environments
- RoHS compliant*

Applications

- LED streetlights
- LCD backlighting
- Display lighting
- Intrinsically safe lighting

LSP Series LED Shunt Protector

General Information

Bourns® LSP Series protectors are electronic shunts that provide a current bypass when an LED element in an LED string fails open circuit. This ensures the remaining string of LEDs will continue to function. There are many cases where high reliability of the LED lighting must be maintained, such as LCD backlighting, transport lighting, avionics, intrinsically safe and low maintenance lighting.

The LSP Series is available in surface mount package DO-214AA (SMB) size format.



Absolute Maximum Ratings (@ T_A = 25 °C Unless Otherwise Noted)

| Rating | | Symbol | Value | Unit |
|------------------------------------|---------|------------------|-------------|------|
| Repetitive peak off-state voltage | LSP0600 | V _{DRM} | 6 | V |
| | LSP0900 | | 9 | |
| | LSP1300 | | 13 | |
| | LSP1800 | | 18 | |
| Average on-state current (Note 1) | | I _T | 350 | mA |
| Operating junction temperature | | T _J | -40 to +150 | °C |
| Storage temperature | | T _S | -65 to +150 | °C |
| Lead temperature, soldering (10 s) | | | 260 | °C |

Notes:

1. Using 75 mm x 75 mm 4-Layer PCB (EIA/JESD51-7), I_T = 1.0 A

Electrical Characteristics (@ T_A = 25 °C Unless Otherwise Noted)

| Parameter | Test Conditions | Min. | Nom. | Max. | Unit |
|--|--|---------|------|------|------|
| I _{DRM} Repetitive peak off-state current | V _D = V _{DRM} | | | 10 | μA |
| V _(BO) Breakover voltage | dv/dt = 750 V/ms, R _{SOURCE} = 300 | LSP0600 | 6 | 16 | V |
| | | LSP0900 | 9 | 18 | |
| | | LSP1300 | 13 | 26 | |
| | | LSP1800 | 18 | 33 | |
| I _H Holding current | I _T = 1 A, di/dt = 30 mA/ms | 5 | 30 | | mA |
| I _{BO} Breakover current | di/dt = 0.8 A/ms | | | 75 | mA |
| V _T On-state voltage | I _T = 1 A | | | 1.2 | V |

Thermal Characteristics (@ T_A = 25 °C Unless Otherwise Noted)

| Parameter | Test Conditions | Min. | Nom. | Max. | Unit |
|---|--|------|------|------|------|
| Junction to free air thermal resistance | EIA/JESD51-3 PCB, I _T = 350 mA, T _A = 25 °C | | 170 | | °C/W |
| Junction to free air thermal resistance | EIA/JESD51-7, 75 mm x 75 mm 4-Layer PCB, I _T = 1.0 A, T _A = 25 °C | | 90 | | °C/W |

JANUARY 2011

*RoHS Directive 2002/95/EC Jan 27, 2003 including Annex.

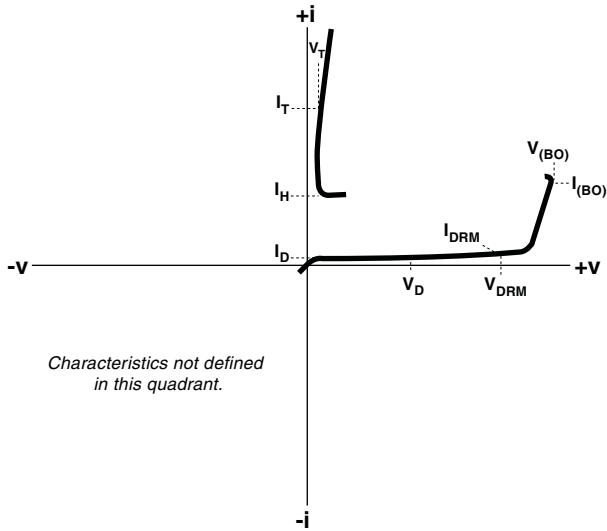
Specifications are subject to change without notice.

Customers should verify actual device performance in their specific applications.

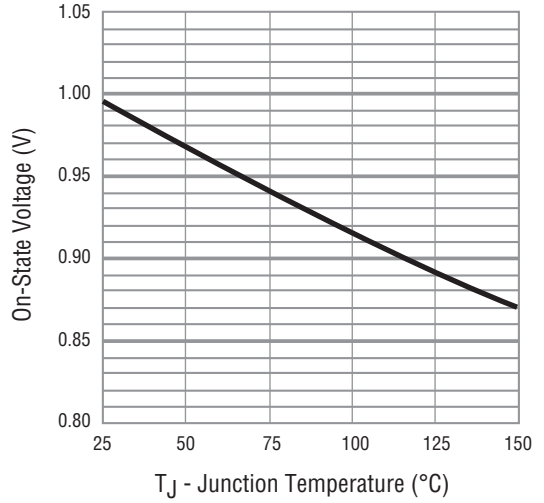
LSP Series LED Shunt Protector



V-I Characteristic



On-state Voltage vs. Junction Temperature



Normalized Breakover Voltage vs. Junction Temperature



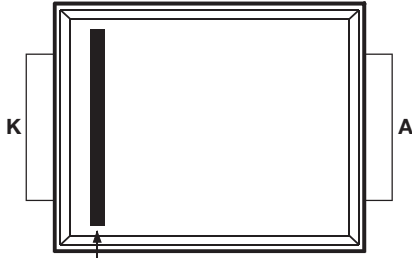
Typical Application



LSP Series LED Shunt Protector



Product Specifications



Unit Epoxy molded SMB D0-214AA package
 Mold Material UL94V-0
 Terminations 100 % matte tin-plated over copper alloy
 Unit Weight 102 mg.

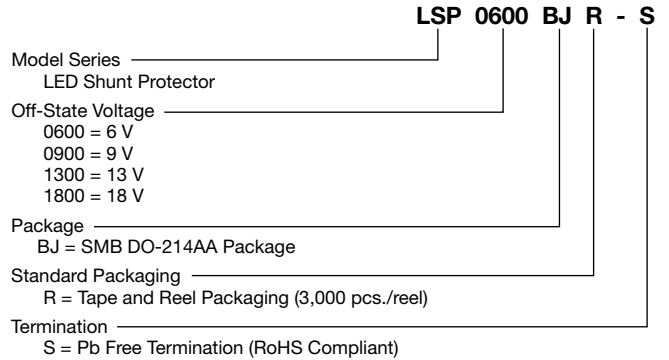
Packaging Specifications

Standard EIA-481-1
 Tape Width 12 mm (.472 in.)
 Reel Diameter 330 mm (12.99 in.)
 Part Alignment Cathode bar adjacent to sprocket hole
 Quantity per Reel 3,000 pieces

Typical Part Marking

| | Top Side Marking |
|--------------------|------------------|
| LSP0600BJR-S | LSP060 |
| LSP0900BJR-S | LSP090 |
| LSP1300BJR-S | LSP130 |
| LSP1800BJR-S | LSP180 |

How to Order



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Europe: Tel: +41-41 768 5555 • Fax: +41-41 768 5510
The Americas: Tel: +1-951 781-5500 • Fax: +1-951 781-5700
www.bourns.com

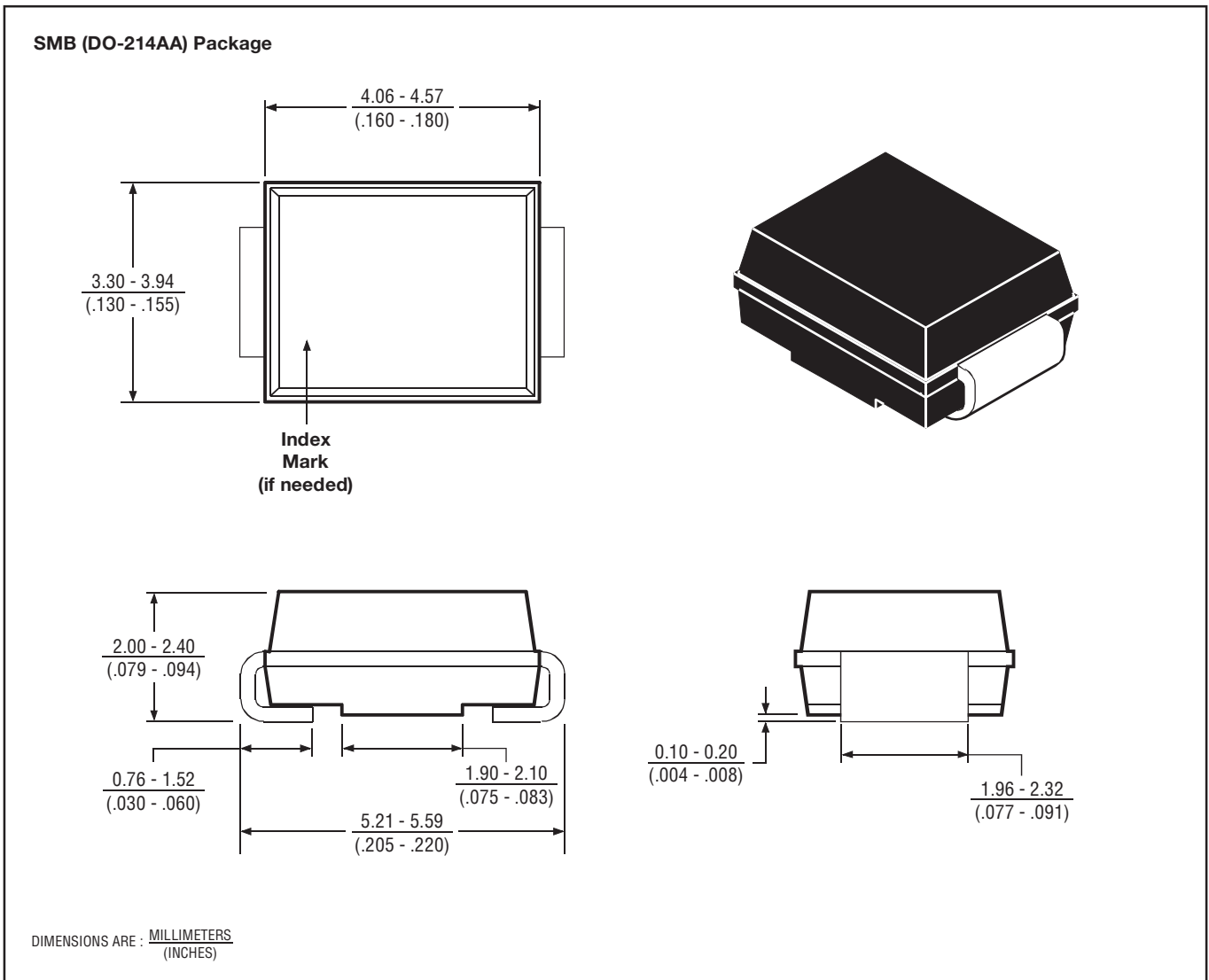


BOURNS®

SMB (DO-214AA)

Package Outline Dimensions

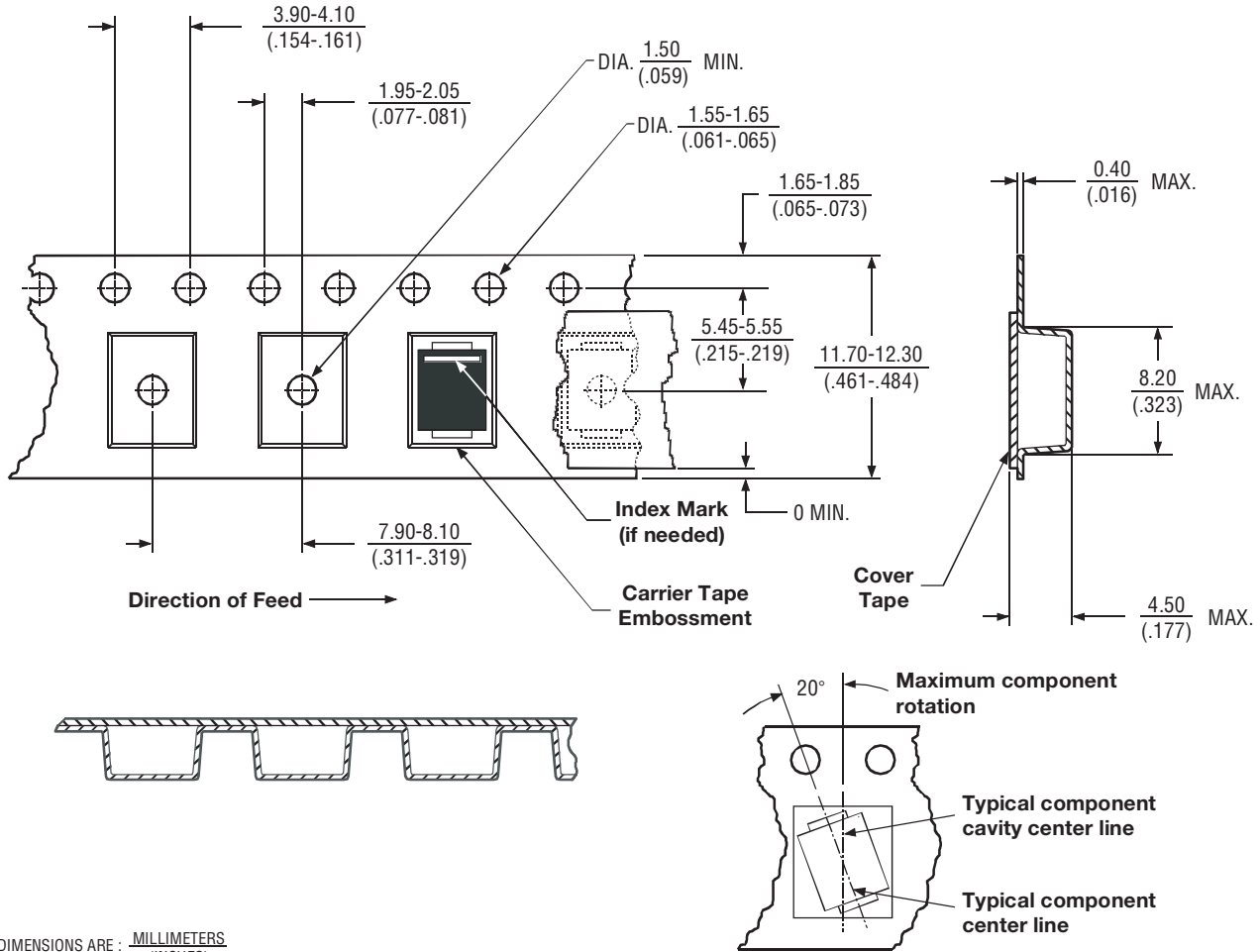
This surface mount two terminal package consists of a circuit mounted on a lead frame and encapsulated within a plastic compound. The compound is designed to withstand normal soldering temperatures with no deformation and circuit performance characteristics will remain stable when operated in most high humidity conditions. Terminals require no additional cleaning or processing when used in soldered assembly.



MD-SMB-001-a

Tape Dimensions

SMB (DO-214AA) Package Single-Sprocket Tape



NOTES: A. The clearance between the component and the cavity must be within 0.05 mm (.002 in) MIN. to 0.65 mm (.026 in) MAX. so that the component cannot rotate more than 20° within the determined cavity.

B. Taped devices are supplied on a reel of the following dimensions:-

Reel diameter: 330 mm \pm 3.0 mm (12.99 in \pm .118 in)
 Reel hub diameter: 75 mm (2.95 in) MIN.
 Reel axial hole: 13.0 mm \pm 0.5 mm (.512 in \pm .020 in)

C. 3000 devices are on a reel.

MD-SMB-002-a

Recommended Printed Wiring Land Pattern Dimensions

SMB (DO-214AA) Land Pattern



DIMENSIONS ARE: $\frac{\text{MILLIMETERS}}{\text{(INCHES)}}$

MD-SMB-003-a

Данный компонент на территории Российской Федерации

Вы можете приобрести в компании MosChip.

Для оперативного оформления запроса Вам необходимо перейти по данной ссылке:

<http://moschip.ru/get-element>

Вы можете разместить у нас заказ для любого Вашего проекта, будь то серийное производство или разработка единичного прибора.

В нашем ассортименте представлены ведущие мировые производители активных и пассивных электронных компонентов.

Нашей специализацией является поставка электронной компонентной базы двойного назначения, продукции таких производителей как XILINX, Intel (ex.ALTERA), Vicor, Microchip, Texas Instruments, Analog Devices, Mini-Circuits, Amphenol, Glenair.

Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

На всех этапах разработки и производства наши партнеры могут получить квалифицированную поддержку опытных инженеров.

Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ РВ 0015-002 и ЭС РД 009

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