

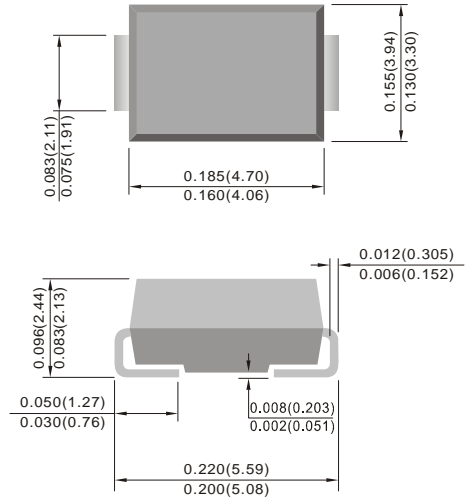
LED Shunt Protector

Features

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

Applications

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

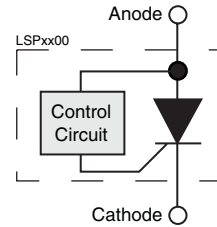


DO-214AA(SMB)

General Information

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



Absolute Maximum Ratings (@ $T_A = 25\text{ }^\circ\text{C}$ Unless Otherwise Noted)

| Rating | Symbol | Value | Unit |
|------------------------------------|-----------|--------------------|------------------|
| Repetitive peak off-state voltage | V_{DRM} | 6 9 13 18 | V |
| Average on-state current (Note 1) | I_T | 1 | A |
| Operating junction temperature | T_J | -40 to +150 | $^\circ\text{C}$ |
| Storage temperature | T_S | -65 to +150 | $^\circ\text{C}$ |
| Lead temperature, soldering (10 s) | | 260 | $^\circ\text{C}$ |

Notes:

1. Using 75 mm x 75 mm 4-Layer PCB (EIA/JESD51-7).

Electrical Characteristics (@ $T_A = 25\text{ }^\circ\text{C}$ Unless Otherwise Noted)

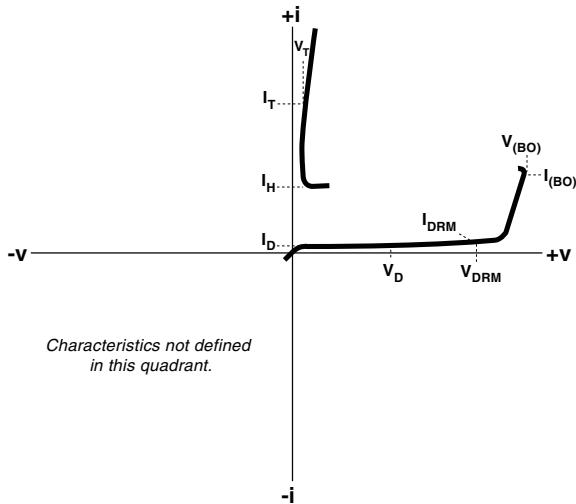
| Parameter | Test Conditions | Min. | Nom. | Max. | Unit |
|---|---|--------------------|------|----------------------|---------------|
| I_{DRM} Repetitive peak off-state current | $V_D = V_{DRM}$ | | | 10 | μA |
| $V_{(BO)}$ Breakover voltage | $dv/dt = 750\text{ V/ms}$, $R_{SOURCE} = 300$ | 6 9 13 18 | | 16 18 26 33 | V |
| I_H Holding current | $I_T = 1\text{ A}$, $di/dt = 30\text{ mA/ms}$ | 5 | 30 | | mA |
| I_{BO} Breakover current | $di/dt = 0.8\text{ A/ms}$ | | | 75 | mA |
| V_T On-state voltage | $I_T = 1\text{ A}$ | | | 1.2 | V |

Thermal Characteristics (@ $T_A = 25\text{ }^\circ\text{C}$ Unless Otherwise Noted)

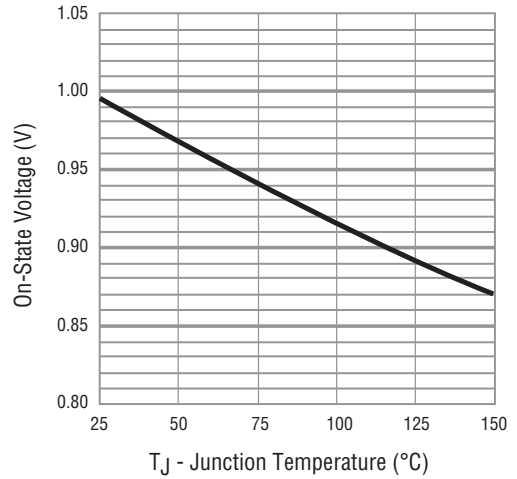
| Parameter | Test Conditions | Min. | Nom. | Max. | Unit |
|---|---|------|------|------|--------------------|
| Junction to free air thermal resistance | EIA/JESD51-3 PCB, $I_T = 350\text{ mA}$, $T_A = 25\text{ }^\circ\text{C}$ | | 230 | | $^\circ\text{C/W}$ |
| Junction to free air thermal resistance | EIA/JESD51-7, 75 mm x 75 mm 4-Layer PCB, $I_T = 1.0\text{ A}$, $T_A = 25\text{ }^\circ\text{C}$ | | 90 | | $^\circ\text{C/W}$ |

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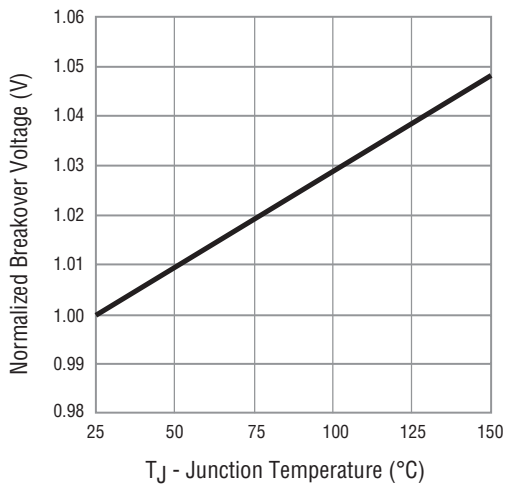
V-I Characteristic



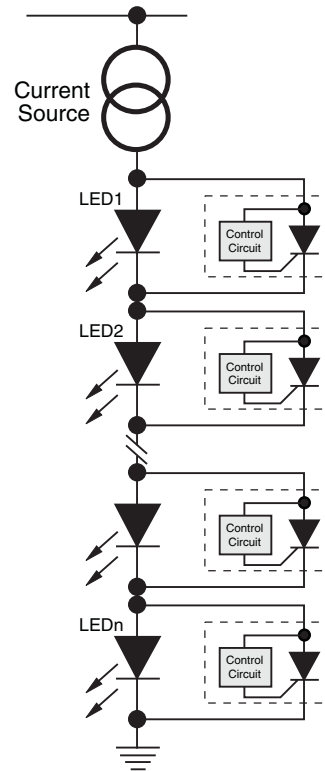
On-state Voltage vs. Junction Temperature



Normalized Breakover Voltage vs. Junction Temperature



Typical Application



Note: The interaction between the YENJI ® PLED device and the power supply for the LED string dictates the power supply architecture. Proper care must be taken in the design of the power supply architecture to ensure that the YENJI ® PLED devices operate as intended and the design maintains integrity.