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January 9, 2014

Unidirectional Open LED Protector from Littelfuse Prevents Damage from Reverse Polarity Voltages

Outdoor LED strings stay illuminated even when a single LED fails

CHICAGO, January 9, 2014 - Littelfuse, Inc., the global leader in circuit protection, has introduced the PLEDxUx Unidirectional Series Open LED Protector, the latest addition to the company's broad portfolio of PLED Open LED protection devices. It provides a switching electronic shunt path when one LED in a string fails as an open circuit. PLED devices are connected in parallel with each LED in a series string. If one LED fails, the PLED connected to it turns on and carries the current that would have gone through the failed LED, so the remainder of the string continues to function. PLEDxUX devices provide reverse battery/power polarity protection for greater LED reliability. Typical applications include street, subway, runway, and tunnel lighting, as well as headlights, roadside warning lights, and signage.

PLEDxUx Series devices are compatible with 1-watt LEDs, nominally 350mA@3V. Two different low-profile packages maximize heat dissipation and layout flexibility, so they're suitable for dense board applications. In contrast with earlier open LED protection solutions such as silicon controlled rectifiers (SCRs) and zener diodes, the PLEDxUx Series offers higher reliability and lower maintenance requirements. For example, SCRs are usually large and require additional components like resistors to set the trigger or turn-on voltage, and their trigger voltage will vary widely over temperature. Zener diodes create additional power dissipation once the LEDs they're protecting fail open. They are also not rated for large DC currents, which can shorten life or lead to catastrophic failure.

"The PLEDxUx Series is a great choice for outdoor applications that demand high reliability and low maintenance," said Betty Li, product manager for LED Protectors. "It also offers comprehensive voltage coverage, especially higher voltage offerings that can allow designers to create a lower cost solution by placing a single PLED component across two or three LEDs, rather than a single LED."

Benefits

- Prevents LED damage by protecting against accidental reversal of battery/power polarity
- Supports PWM frequencies up to 10kHz to allow controlling LED brightness without color shifting
- Compact packages maximize layout flexibility and heat dissipation for dense board applications
- Automatically resets after power cycle for low maintenance, high reliability operation

Availability

PLEDxUx Series LED Protectors are available in quantities of 5,000 (QFN 3x3 package) and 2,500 (DO 214AA package), in standard tape and reel packaging. Samples are available now for bulk orders; sample requests can be placed through authorized Littelfuse distributors worldwide. For a listing of Littelfuse distributors, please visit Littelfuse.com.

For More Information

Additional information is available on the PLEDxUx Series product page and datasheet. If you have technical questions, please contact: Betty Li, Product Manager, LED Protectors, betty.li@littelfuse.com.

About Littelfuse

Founded in 1927, Littelfuse is the world leader in circuit protection with growing global platforms in power control and sensing. The company serves global customers in the electronics, automotive and industrial markets with technologies including fuses, semiconductors, polymers, ceramics, relays and sensors. Littelfuse has over 7,000 employees in more than 35 locations throughout the Americas, Europe and Asia. For more information, please visit the Littelfuse website: littelfuse.com.

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