



Eaton provides overvoltage protection in LED lighting applications

Light-emitting diodes (LEDs) offer several advantages over conventional lighting solutions, such as incandescent and fluorescent bulbs. One of the most obvious benefits is its longer lifespan. The typical LED has a lifespan of about 50,000 hours, which is 2-4 times longer than that of fluorescent bulbs. LEDs are significantly smaller in size than traditional bulbs, making them adaptable in a wide range of lighting applications, including signage, industrial, consumer, and automotive. LEDs are more power-efficient than incandescent bulbs, fluorescents, and sodium-halide bulbs, etc. They consume less energy and give off intense illumination. Chip-on-board

(COB) LED is a new, advanced LED technology with even more benefits compared to conventional LEDs designed to support a host of lighting applications.

COB lights consist of an array of LED chips packed close together and integrated into a substrate, so they serve as a single large LED chip. COB LED has several benefits LED technologies, including dual inline package (DIP) LED and surface-mount LED. These benefits include higher intensity illumination, compactness, uniform brightness, low design complexity, low energy consumption, and reliable thermal performance. While DIP LEDs and SMD LEDs emit 20 to 70 Lumens/watt, COB

LEDs can emit between 90 and 145 Lumens/watt. Due to its higher packing density, COB technology integrates more LEDs into one substrate, which reduces the device footprint. For comparison, a 10x10 mm substrate containing only 9 DIP LEDs and about 40 SMD LEDs can pack up to 342 COB LEDs. Also, COB technology uses a single circuit for the entire chip, regardless of the diode count. High-power, COB LEDs are utilized for outdoor lighting in residential, commercial, and industrial facilities.

Today's COB LED modules will require overvoltage protection, as they utilize AC power from sources that are susceptible to damaging transient voltages. Metal-oxide varistors (MOVs)

are circuit protection devices that can safeguard against overvoltage surge events that can cause damage to COB LED modules. When used in conjunction with other circuit protection devices, such as fast-acting fuses, they can provide complete circuit protection. Eaton's surface-mount MOVs are ideal for COB LED modules. They have very wide operating voltages, ranging from 11 Vac up to 510 Vac. These products are offered in two compact sizes, 2825 and 4032, which provides an ideal balance of high miniaturization and surge protection in compact circuits. Each product is ROHS compliant and UL approved for superior reliability and safety.

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