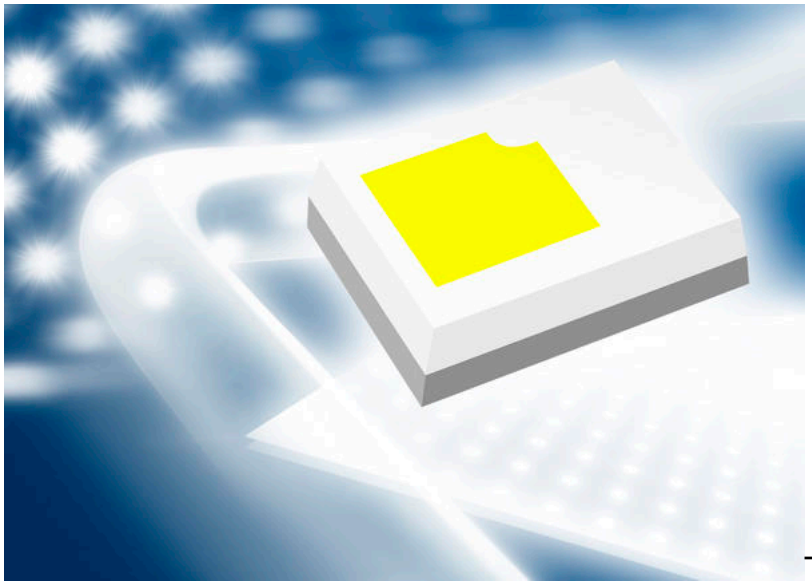
Small LEDs ideal for automotive industry



Thanks to the flexible arrangement of these small LEDs, it is now much easier and more cost-effective to create unique, signature LED headlight designs. LEDs have faced a major challenge as light sources in vehicle headlights because, despite their high efficiency, luminous intensity and durability, different LEDs have had to be used for different areas in the headlight in order to achieve a uniform arrangement of the light-emitting surfaces. This has necessitated complex design concepts involving increased effort and costs.

One LED for all designs
Now, the extremely small size of the new Oslon Compact, combined with its high light output, enables a single LED type to be used as the default light source for all automotive forward lighting applications. The light points in the headlight can be placed in any arrangement, for example, and customized designs can be developed to give different vehicles a unique appearance. The small size of the Oslon Compact LEDs means they can be grouped very close to one another so they can even be used for light guide solutions and adaptive front lighting systems (AFS).

Reducing LED design to the bare essentials
This compact design has been achieved by reducing the LED to its bare essentials. The entire LED package is not much larger than the actual light-emitting surface of the chip. The platform is Osram Opto Semiconductors' ThinGaN UX:3 chip technology, which involves transfer to a silicon carrier and removal of the original silicon substrate to provide high luminous efficacy even at high currents. The prototype showcased at SIA-Vision measures only 1.5 x 1.9 mm² and produces 200 lumens from 700 mA. The clear white light from the chips is achieved through OSRAM's C2 technology which converts blue light with the aid of ceramic conversion.

OSRAM OPTO SEMICONDUCTORS

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