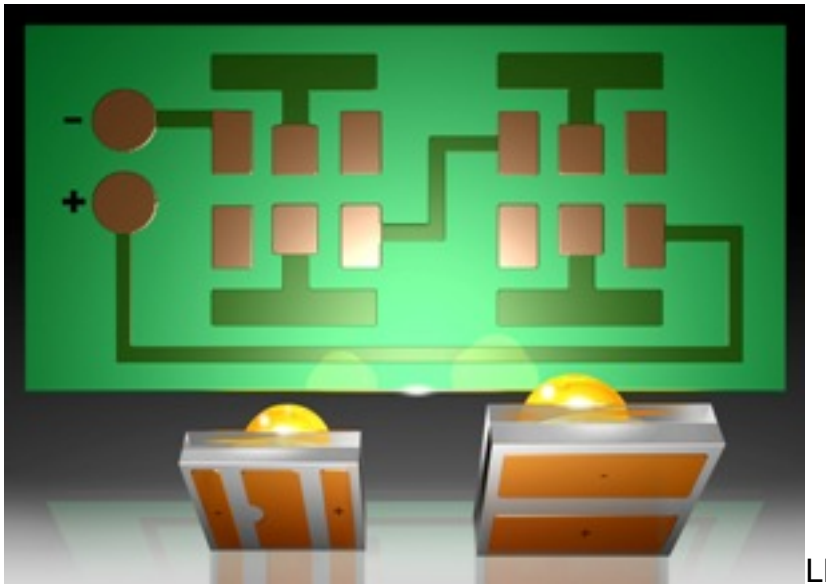
Uniform solder pad design facilitates second sourcing



LEDs are not all the same. This is true of not only their performance and dimensions but also their solder pads and processing options. Osram Opto Semiconductors has now developed a concept for uniform solder pads based on the Oslon LED family, making it easier for customers to use LEDs from different manufacturers (second source) and reducing the costs of storage and process modification.

Second source is the term given to the ability to use different suppliers' products in a particular project or a series of products. Second sourcing is a standard practice for LED components because of the need for security of supply. Ideally, it should be possible to incorporate second sourced products into current production without incurring additional costs. However, components from different manufacturers generally differ in terms of their dimensions and shape of their solder pads. As a result, typically two different soldering boards are needed for the LEDs from two different manufacturers. This drives up costs for procuring and storing the boards and also for modifying the process to fit each board.

Now – only one adjustment to the board layout is required
Osram Opto Semiconductors has developed a concept for ceramic LED components, such as the Oslon family, that makes the board solder pad design so adaptable that it can be used for LED components from at least two different manufacturers. The concept can also be used for metal core, FR4 and ceramic boards.

The combined board design comes from the design of one of the two LED components. The individual solder surfaces are divided into segments – electrically connected and electrically disconnected. By selecting appropriate spacings between the solder surfaces, the second LED product – rotated 90° – can be attached to the uniform board design. The anode and cathode of the two LED components are connected to the same electrically contacted segments. By dividing the solder

surfaces the two LED types automatically align themselves to the edges of the solder surfaces during the reflow solder process. For both LED components, the luminous area is in the same lateral position on the board – in other words, in the same alignment in the board plane. If the LEDs have the same emission behavior, the same secondary lenses and reflectors can be used. This means that neither the LED components nor the end application are changed in terms of their characteristics.

Making the most of the benefits
The new concept makes it much easier to handle LED components from different manufacturers because there is no longer the need to make modifications to the board design. What's more, there is no need for duplicated storage, reducing costs still further. Dr. Gartner sums up the benefits as follows: "The efficiency and performance of our Oslon family is undisputed worldwide. The concept for a flexible solder pad design gives our customers the freedom to incorporate a second source for our high-power LED components without having to suffer restrictions due to mechanical parameters."

Oslon
http://www.osram-os.com/osram_os/EN/ [1]

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