

Leading automakers reduce costs and increase energy efficiency with Q-Prime[®]



Today's automakers are increasingly focused on providing energy efficient, aesthetically pleasing vehicles for consumers. Widespread adoption of LED lighting saves energy and gives vehicles a luxury look.

Business objective

In the auto industry, style matters. An innovative and visionary element is an attractive selling point only if it offers performance to match. Automakers are increasingly using energy-efficient LED lighting in designs, from taillights to instrument panels.

As more and more products become "smart", the underlying technologies need to bend to new shapes and offer powerful functionality in ever-smaller packages.

Solution

Redesigning LED for improved ROI

We saw an opportunity to optimize LED solutions for customers in the **automotive industry** by making the flexible circuit technology lighter, simplifying the design and reducing costs.

We developed a more cost-effective LED lighting solution with a simplified design that could dissipate heat more efficiently and better suit the desired vehicle design.

Results

Pushing the boundaries

The material science and interconnect product development teams at **Sheldahl, a Flex company**, pushed the boundaries of electrical, thermal and mechanical requirements for LEDs.

The result was **Q-Prime**, a circuit with a proprietary thermally conductive adhesive and a thin composite structure. This LED lighting solution enables:

- » Lower component operating temperatures via its design of copper on one side and aluminum on the other side, which disperses heat faster
- » Significant weight reduction with aluminum that is 90% thinner than previous solutions
- » Cost reduction by eliminating tools in the manufacturing process
- » Flexibility for processing, yet sufficient rigidity to hold shape when bent

Today, Q-Prime is the only thermal management circuit processed in roll-to-roll format that is thin and flexible enough to fold and hold a bend. No other product offers this combination of flexibility, thermal performance is light weight.



For more information, please visit www.flex.com or follow us on Twitter @flexintl

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