



**CamSemi** David Baillie

## A UNIQUE, LOW-COST APPROACH to power-supply design

*CamSemi's David Baillie discusses how his UK-based fabless-semiconductor company established a global presence.*

DAVID BAILLIE is chief executive officer of CamSemi (Cambridge Semiconductor), a UK fabless-semiconductor company, which, in 2007, launched its first products in the offline-power-conversion market. The company's RDFC (resonant-discontinuous-forward-converter) controllers target the linear-replacement-system market. *EDN* recently interviewed Baillie through e-mail. A portion of that interview follows. To read more, go to [www.edn.com/global08db](http://www.edn.com/global08db).

*When the founders first launched the company, you proposed making FETs that had the gates etched from the back to make them fast and low-loss. What were the difficulties you encountered in the FET program?*

As a fabless company, CamSemi is and will almost always be working with external suppliers. That [situation] gives us real freedom in partnering with companies that are centers of excellence in their technologies, but it also means that technology transfer and maintaining good supplier communications are critical for business success.

The decision to delay introducing integrated-controller and high-performance-switching products has nothing to do with the challenges of working with overseas suppliers. During the manufacturing-development phase for these products, we uncovered batch-to-batch variation that impacted the overall process yield. As a result, we decided to invest further time and resource in the manufacturing-development phase and to accelerate our stand-alone-controller program. This change in strategy was in response to increasing market demands for better, more-cost-effective solutions and to get CamSemi into revenue as quickly as possible, which is critical for any early-stage company.

*You have come up with a clever architecture for low-cost power. Is it difficult to keep engineers from going overboard?*

I guess it is a trade-off, but we have always worked very closely with our customer base so are well-grounded in developing products that address a real need at an acceptable cost.

Manufacturers face considerable cost pressures. It

used to be that the only option for linear replacement was an SMPS [switched-mode-power-supply] flyback [converter], but we have changed that [assumption] with our unique RDFC approach. Now, manufacturers can have a low-cost path to SMPS performance

and without having to worry as much about the challenges of EMI [electromagnetic interference] or FCC [Federal Communications Commission] Part 68 compliance.

*Which area—process refinement, IC design, applications, sales—seemed to require the most innovation?*

For us, the greatest challenge is knowing what the market will want in 18 to 24 months' time. This [knowledge] is fundamental and can come only from in-depth understanding of the end-market dynamics and close customer relationships. And, to help us with this [need], we have worked with customer partners who actively participated in specifying our first two major platform products.

*Now that the company is getting established, where do you see the next requirements for global innovation?*

The next big wave in the offline-power-conversion space will be in lighting. Incandescent lamps are only 5% efficient and will be phased out over the next five to 10 years.

*With the success of your power-supply design that can use lower-cost transistors instead of FETs, do you plan to revisit the project of back-etching wafers?*

The work on our PowerBrane technology is continuing, but we took the commercial decision to accelerate the development of stand-alone controllers and to bring those to market first. It is still our intention to launch integrated products.

—Interview conducted and edited by Paul Rako

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