

Application Specific FETs—A New Category Of More-Optimized MOSFETs

[Nexperia](#) has responded to industry demands to maximize performance by defining a new MOSFET product group. The Application Specific FETs (ASFETs) feature MOSFETs with optimized parameters for specific applications, enabling significant improvements according to the company. Nexperia is offering ASFET families for battery isolation, motor control, hot-swap and power over Ethernet (PoE) applications. Examples of ASFET benefits include 3x to 5x improvement in safe operating area (SOA) for hot-swap applications, and maximum current ratings in excess of 300 A for motor applications.

“As designers push the boundaries of performance, it is crucial to understand how the MOSFET will be used in the application. There are 100+ parameters on a regular MOSFET datasheet but usually only a few are critical in each project. However, as the applications change, so do the critical parameters,” said Chris Boyce, senior director for the Power MOSFETs Group at Nexperia.

Continuing, Boyce said, “At Nexperia, we determine the performance of every element of our products; the core silicon technology, the chip design, the package and the manufacturing & test procedures. By keeping individual application requirements front and center of our thinking, we can choose to optimize the parameters that matter most in a particular use-case, often at the expense of others of less relevance. In essence we have combined our proven MOSFET expertise with a broad understanding of applications so we can tailor products which offer the ultimate performance for a specific application or functionality.”

The ASFET category will be further enhanced with the imminent release of a new family of automotive products with guaranteed repetitive avalanche performance for driving inductive loads.

Boyce added, “We are continually seeking to deepen our understanding of specific applications, often working hand-in-hand with our customers. In exposing our best engineers to detailed application requirements, we are opening new and exciting possibilities of innovation—there are many more ASFET advances in the pipeline.”

For more details, see “[Optimizing MOSFETs to fit specific applications](#)”.