

# Industry's First Web-Based Circuit Simulator Dedicated to Evaluating Silicon Carbide Devices

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On May 3, Wolfspeed, a Cree Company, will launch the SpeedFit™ simulation tool, a free and powerful online circuit-simulation tool for power design engineers. It is the only online circuit simulation tool solely dedicated to simulating and evaluating the performance of silicon carbide (SiC) power devices.

In just seconds, the SpeedFit simulation tool allows a design engineer to determine the benefits and advantages of an all SiC-based power converter and select the right devices for their application. The user can tailor the simulation to the exact application parameters of interest using a set of tools to analyze SiC device performance, key voltage, and current waveforms.

The SpeedFit user interface is simple and intuitive with topologies broadly categorized into DC/DC, AC/DC, or DC/AC applications. A set of tabs guides the user toward determining the right SiC component(s) for a design. It provides performance data including average switching and conduction losses and estimated junction temperatures for the selected SiC devices for a specific operating condition.

After choosing a topology, the user specifies system-level circuit parameters, chooses a recommended device, and defines thermal interface parameters and cooling. The SpeedFit simulation tool even allows users to specify external gate resistance values and major passive component values in the circuit. Users can also compare results for different circuit configurations and devices. The tool summarizes the system parameters, device part number and simulation results in one concise report.

The SpeedFit simulation tool will be available on wolfspeed.com and uses the PLECS® WBS web-based simulation tool developed by Plexim. Files containing the loss models and thermal impedance information are also available for download at wolfspeed.com for off-line use in the PLECS tool, so existing PLECS users can now access models for Wolfspeed's parts. PLECS Standalone can be obtained from Plexim's website and has a free demo mode allowing access to a collection of prebuilt designs. Free PLECS trial licenses for PLECS can also be requested on Plexim's website.

Wolfspeed will be showcasing the SpeedFit simulation tool on their stand (9-242) at PCIM May 10-12. To try the SpeedFit simulation tool, visit [www.wolfspeed.com/speedfit](http://www.wolfspeed.com/speedfit) on or after May 3.

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