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## PRODUCTS NEWS

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### **New Switching Amplifier is the Industry's First Half H-Bridge to use Silicon Carbide MOSFET Technology with Integrated Gate Drive**

*SiC MOSFETs reduce switching losses, reduce conduction losses, and reduce temperature dependency of  $R_{DS(on)}$  compared with silicon, IGBTs*

**TUCSON, Arizona, U.S.A. – Sept. 25, 2018** – The SA110 is Apex Microtechnology's first high current, high voltage half H-bridge to combine silicon carbide (SiC) MOSFETs with a gate drive in a single module device. This hybrid switching amplifier also features digital gate driver control, a very high 400 kHz MAX switching frequency, and 28 A of continuous output current.

The use of SiC technology can potentially impact a hybrid's bill of materials, but any increase in cost will most likely be offset by a significant increase in performance. This includes reduced switching losses, lower conduction losses, and a low temperature dependency of  $R_{DS(on)}$  over a wide operating temperature range. SiC MOSFETs also provide a reduction in power loss compared to the more commonly used silicon or IGBT options. By integrating the gate drive, switching behavior is greatly improved as parasitic impacts are reduced and easier to control.

"The use of SiC MOSFETs in the SA110 represents an exciting first for Apex hybrid designers and our customers," explains Apex Strategic Marketing Director Jens Eltze. "We believe any potential uptick in the cost of the device will be more than compensated by the impressive increase in performance and reliability, as well as lower costs for cooling the components. This combination of SiC MOSFETs with integrated gate drive and control logic will shorten design cycle times and save on valuable board real estate for our customers."

The SA110 can operate off supply voltages up to 400 volts and features a typical switching frequency of 250 kHz, with a maximum frequency of 400 kHz. This hybrid is offered in a 12-pin PSIP package to provide a very compact footprint and is designed with under voltage lockout protection and active Miller clamping.

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A wide range of target applications include sonar, brushless DC motor drives and DC/AC inverters in the industrial, avionics, and military markets.

The table below outlines the electrical performance of the SA110:

<b>SPECIFICATION PARAMETER</b>	<b>SA110</b>
<b>Supply voltage operation (Total)</b>	400 V
<b>Output current continuous</b>	28 A
<b>Output current PEAK</b>	40 A
<b>Switching Frequency</b>	250 kHz Typical 400 kHz MAX
<b>On-resistance, per MOSFET, Typical</b>	30m Ohm
<b>Internal power dissipation</b>	75 W per side MAX
<b>Package style</b>	12-pin Power SIP, DP Style, Heat Tab on Back

### **Pricing, Availability and Evaluation Tools**

The SA110 is sampling now for qualified applications, with production volumes targeted for late Q1 2019. Per unit pricing is available by contacting a local Apex sales representative or distributor. Complete product information is online at <https://www.apexanalog.com/products/sa110.html>. For technical support, contact Apex applications engineering at 800-546-2739, or [apex.support@apexanalog.com](mailto:apex.support@apexanalog.com).

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Apex Microtechnology is an industry leader in high power analog components, designed to meet the performance and cost design targets of our customers' precision control applications. Apex Microtechnology is headquartered in Tucson, AZ, USA. More information about Apex Microtechnology is available at [www.apexanalog.com](http://www.apexanalog.com).

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