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Integrated Actuation Power Solution Aims to Simplify Aviation Industry's Transition to More Electric Aircraft

Microchip introduces configurable family of companion driver boards using its Hybrid Power Drive modules available in silicon carbide (SiC) or silicon (Si) technology

CHANDLER, Ariz., April 17, 2024 (GLOBE NEWSWIRE) -- The aviation industry's requirements for the latest, most efficient and lowest-emission aircraft is propelled by an overarching goal towards sustainability and decarbonization. To satisfy these goals, aviation power systems developers are transitioning to electric actuation systems as the trend towards More Electric Aircraft (MEA) continues to grow. To provide the aviation industry with a comprehensive electric actuation solution, Microchip Technology **(Nasdaq: MCHP)** today announces a **new integrated actuation power solution** that combines companion gate driver boards with our expansive Hybrid Power Drive (HPD) modules in silicon carbide or silicon technology with a power range of 5 kVA to 20 kVA.

The new integrated actuation power solution maintains the same footprint regardless of the power output. The companion gate driver boards are designed to be integrated with Microchip's HPD modules to provide an all-in-one motor drive solution for the electrification of systems such as flight controls, braking and landing gear. Microchip's power solutions are designed to scale based on the requirements of the end application, from smaller actuation systems for drones to high-power actuation systems for Electric Vertical Take-Off and Landing (eVTOL) aircraft, MEA and all-electric aircraft.

"We developed the companion gate driver boards to be used with our existing HPD modules to bring to market a plug-and-play power solution for MEA," said Leon Gross, vice president of Microchip's discrete product group. "With this solution, customers no longer need to design and develop their own drive circuitry, which can reduce design time, resources and cost."

These high-reliability devices are tested to conditions outlined in DO-160, "Environmental Conditions and Test Procedures for Airborne Equipment." There are multiple protection features including shoot-through detection, short circuit protection, desaturation protection, Under Voltage Lock Out (UVLO) and active miller clamping.

The gate driver boards are designed to be driven with external PWM signals based on Low Voltage Differential Signaling (LVDS) compliant with TIA/EIA-644 for low Electromagnetic Interference (EMI) and good noise immunity. The gate driver board provides differential outputs for telemetry signals like DC bus current, phase current and solenoid current by taking feedback from shunts present in the HPD module and DC bus voltage. It also provides direct output of two PT1000 temperature sensors available in the HPD power module.

The companion gate driver boards are low-weight, low-profile and compact solutions to optimize size and power efficiency of actuation systems. The gate drivers are designed to operate throughout the temperature range of −55°C to +110°C, which is critical for aviation applications that are often exposed to harsh environments.

The isolated companion gate driver boards only require a single 15V DC input for the control and drive circuit; all additional voltages needed are generated on the card. This significantly reduces the number of system components and simplifies system cabling.

Microchip provides comprehensive solutions for MEA by integrating power products with FPGAs, microcontrollers, security, memory and timing. Microchip's solutions are designed to help customers speed up their development, reduce costs and get to market faster.

Support and Resources

The companion gate driver boards are supported with detailed data sheets and device models.

Pricing and Availability

The companion gate driver boards and accompanying HPD modules are available in production quantities. For additional information, contact a **Microchip sales representative**.

Resources

High-res images available through Flickr or editorial contact (feel free to publish):

- Application image: **www.flickr.com/photos/microchiptechnology/53415024168/sizes/l**

About Microchip Technology:
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