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Microchip Launches Radiation-Tolerant Power Management Device Targeting Low-Earth Orbit Space Applications

Space system developers can quickly develop prototypes and final designs for their power management system with a radiation-tolerant device based on a familiar plastic COTS device

CHANDLER, Ariz., Jan. 17, 2023 (GLOBE NEWSWIRE) -- The commercialization of the Low-Earth Orbit (LEO) region is transforming space exploration and satellite communication at roughly 1,200 miles above Earth. For satellites to successfully operate and reach their destination, it is essential to select components that can withstand the harsh space environment. Building on its existing radiation-tolerant portfolio, Microchip Technology Inc. **(Nasdaq: MCHP)** announces today the introduction of its first commercial-off-the-shelf (COTS) rad-tolerant power device with the **[MIC69303RT 3A Low-Dropout (LDO) Voltage Regulator](#)**. The new high-current, low-voltage MIC69303RT is a power management solution targeting LEO and other space applications. The device is available for prototype sampling in both plastic and hermetic ceramic to support the requirements of the mission.

The MIC69303RT is based on proven COTS devices, making it easier to conduct preliminary evaluation and early development. Operating from a single low-voltage supply of 1.65 to 5.5 volts, the device can supply output voltages as low as 0.5V at high currents, offering high-precision and ultra-low dropout voltages of 500 mV under extreme conditions. The MIC69303RT is a companion power source solution for Microchip's radiation-tolerant space-qualified microcontrollers such as the SAM71Q21RT and PolarFire® FPGAs including the RTPF500TLS.

"The MIC69303RT is Microchip's first rad-tolerant power management device with a hermetic ceramic package, latch-up immunity and 50 Krad total dose robustness," said Bob Vampola, vice president of Microchip's aerospace and defense business unit. "Microchip has over 60 years of space flight heritage in a comprehensive portfolio that allows customers to choose products designed to work together and accelerate their design processes."

"This COTS rad-tolerant power management solution enables new design possibilities in space applications," said Keith Pazul, director of marketing for Microchip's analog power and interface business unit. "Customers can design their space system with confidence by selecting the COTS MIC69303RT space-qualified part to power Microchip space-qualified MCUs and FPGAs."

Designed for harsh aerospace applications, the MIC69303RT is operational in temperature ranges from -55°C to +125°C. It is offered in 8-pin and 10-pin package configurations with radiation tolerance up to 50 Krad. The low noise of the output is critical to sensitive RF circuits, post regulation of switching power supplies and industrial power applications.

The MIC69303RT device is the newest space-qualified product by Microchip and is manufactured in compliance with the following MIL Class Q or Class V requirements: screening testing, qualification testing and TCI/QCI specifications. The plastic MIC69303RT is compliant with high-reliability plastic quality flow derived from AEC-Q100 automotive requirements with specific additional tests necessary for space applications.

Development Tools

The MIC69303RT Plastic Evaluation Board is designed to evaluate the performance of the plastic engineering IC version for the MIC69303RT. The 4-layer PCB allows the user to easily change and measure the electric parameters of the device at different input and output conditions.

Pricing and Availability

The MIC69303RT is available in limited sampling upon request. 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/52605213003/sizes/l

About Microchip Technology
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