

Low-Voltage Rad-Hard GaN FETs Support Space Computing

[EPC Space](#)'s EPC7050PCSH, EPC7066PCSH and EPC7065PCSH are rad-hard eGaN power transistors in plastic surface-mount packages, designed to deliver high-performance power conversion for next-generation space computing systems with lower voltage ratings of 15 V, 25, and 40 V respectively. They combine ultra-low on-resistance, high current capability and fast switching performance in compact PQFN packages with backside thermal pads.

Their low conduction losses and world-class switching figures of merit, according to the vendor, enable high efficiency and power density, all with zero reverse-recovery charge (see the figure). Together, these characteristics enable smaller, more-efficient power conversion for space-constrained architectures. All three offer high radiation immunity: TID > 1 Mrad, SEE LET(Si) = 85 MeV cm²/mg, and neutron > 4E15 n/cm².

The EPC7050PCSH is a 15-V device with 101-A continuous current capability and typical $R_{DS(ON)}$ of 0.28 mΩ. The EPC7066PCSH is rated at 25 V and 101 A, with typical $R_{DS(ON)}$ of 0.37 mΩ, while the EPC7065PCSH provides a 40-V rating, 101-A continuous current capability and typical $R_{DS(ON)}$ of 0.5 mΩ.

All three products are designed for synchronous rectifier applications on the secondary side of intermediate bus converters with output in the range of 5 V to 12 V, delivering an industry-leading low $R_{DS(ON)} \times Q_G$ figure of merit to enable higher-frequency and higher-efficiency operation. The devices also target point-of-load buck converters/IVRs supplying 0.8-V core voltage for the processor.

"These devices target voltage regulator module (VRM), intermediate voltage regulation (IVR), point-of-load (POL), and intermediate bus converter (IBC) applications to power space compute assets such as the Versal SoC or NVIDIA GPUs," said Bel Lazar, CEO of EPC Space. "They exhibit exceptional radiation hardness, including TID immunity and robustness to neutron and single-event effects, while offering electrical performance superior to the best silicon MOSFETs operating on the ground today."

For 500-unit quantities engineering models are priced at \$85, and rad-hard space-qualified units are priced at \$125. For more information, see the [EPC7050PCSH](#), [EPC7066PCSH](#) and [EPC7065PCSH](#) pages.

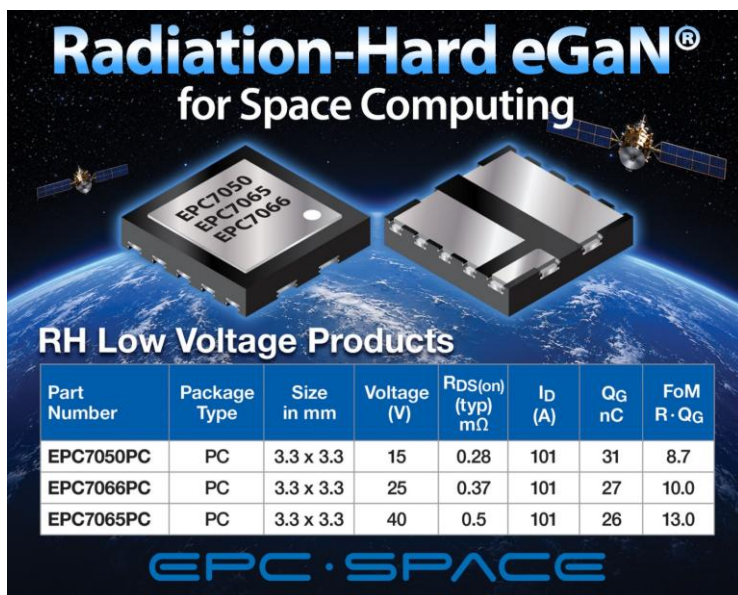


Figure. As AI and high-performance computing extend into space, the ability to deliver reliable power to increasingly demanding processors and accelerators is becoming a critical part of system design. EPC Space's latest eGaN devices address this challenge by combining radiation robustness with the electrical performance and power density required by next-generation space compute platforms. EPC Space's 15-V, 25-V and 40-V eGaN FETs deliver ultra-low on-resistance, high current capability, and exceptional radiation immunity for high-density space power conversion.