

40 V Rad Hard GaN FETs Set New Performance Standards for Space Applications

EPC Space expands its radiation-hardened (rad-hard) gallium nitride (GaN) Discrete family for critical spaceborne and other high reliability environments.



ANDOVER, MA, UNITED STATES, June 5, 2024 /EINPresswire.com/ -- EPC Space announces the introduction two new rad-hard GaN discretes with low on-resistance and extremely low gate charge for high power density solutions that are lower cost and more efficient than the nearest comparable radiation-hardened silicon MOSFET.

The [EPC7001BSH](#) is a Rad-Hard eGaN[®] 40 V, 50 A, 11 mΩ Surface Mount

(FSMDB) and the [EPC7002ASH](#) is a Rad-Hard eGaN[®] 40 V, 15 A, 28 mΩ Surface Mount (FSMDA).

Both devices have a total dose radiation rating greater than 1,000K Rad(Si) and SEE immunity for LET of 83.7 MeV/mg/cm² with VDS up to 100% of rated breakdown. These devices come packaged in hermetic packages in very small footprints.

Part Number	Drain to Source Voltage (V _{DS})	Drain to Source Resistance (R _{DS(on)})	Single-Pulse Drain Current (I _{DM})	Package Size (mm)	Total Dose (TID)	Heavy Ion Single Event Effects (SEE)
EPC7001BSH	40	11 mΩ	120	5.7 x 3.9	1 Mrad	SEE immunity up to LET of 83.7 MeV/mg/cm ² with VDS up to 100% of rated Breakdown
EPC7002ASH	40	28 mΩ	40	3.4 x 3.4	1 Mrad	SEE immunity up to LET of 83.7 MeV/mg/cm ² with VDS up to 100% of rated Breakdown

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Bel Lazar, CEO of EPC Space

EPC’s eGaN FETs and ICs offer a higher performing alternative to conventional rad hard silicon devices for high reliability and space applications. EPC’s Rad hard devices are significantly smaller, have 40 times better electrical performance, and lower overall cost than rad hard silicon devices. Moreover, EPC Space’s rad hard devices exhibit superior resistance to radiation, supporting higher total radiation levels and SEE LET levels compared to traditional

silicon solutions.

With higher breakdown strength, lower gate charge, lower switching losses, better thermal conductivity, and lower on-resistance, power devices based on GaN significantly outperform

silicon-based devices and enable higher switching frequencies resulting in higher power densities, higher efficiencies, and more compact and lighter weight circuitry for critical spaceborne missions.

Applications benefiting from the performance of these products include [DC-DC power supplies](#) for satellites and space mission equipment, motor drives for robotics, instrumentation and reaction wheels, deep space probes, and ion thrusters.

“These two new additions to our rad-hard product line offer designers high power and low on-resistance solutions enabling a generation of power conversion and motor drives in space operating at higher efficiencies, and greater power densities than what is achievable with traditional silicon-based rad-hard solutions,” said Bel Lazar, CEO of EPC Space.

Price & Availability

500 units pricing of \$212.80/ea for engineering models and \$315.84/ea for space level grade. Products are available with lead-times of 4 and 12 weeks or less for Engineering modes and Space levels respectively.

eGaN is a registered trademark of Efficient Power Conversion Corporation, Inc.

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