

GE Energy Expands Digital DC Power Converter Portfolio

GE Energy has expanded the innovative DLynx family of Point of Load (POL) digital DC power converters ranging in capacity from 3Amps to 40Amps. The DLynx portfolio is now available in 3A, 6A, 12A and 20A DOSA standards-based digital and analog versions in addition to a 40A module. The DC-DC POL converters efficiently power circuit board electronics such as processors, memory, application specific integrated circuits (ASICs), field programmable gate arrays (FPGAs) and other silicon devices. GE Energy's recent DLynx licensing agreement with Bel Fuse, Inc. further empowers the DOSA digital POL standard with multiple sourcing options. The standards-based DOSA footprints and analog/digital compatibility with existing circuit board designs shrinks the size, lowers the cost and improves the performance of DC-DC converter modules.

An industry-standard PMBus interface and space-saving Tunable Loop technology deliver leading current density. With proven tools to simplify design, DLynx modules can be implemented with only three external components. Adaptive voltage scaling (AVS) leverages silicon performance to reduce power consumption through tight digital control (± 0.4 percent) of the output voltage and a ± 1 percent controller set point reference.

"We are providing power design engineers the benefits of digital technology cost-effectively, with the safety of full analog compatibility," said Jeff Schnitzer, president of GE Energy's Power Electronics business. "The DLynx portfolio helps our customers optimize energy efficiency, lower cooling requirements, and decades of reliable operation."

Power design engineers can accelerate time to market for new product developments while also achieving supply chain and sourcing objectives. In a flexible nested footprint, a single circuit board layout can accommodate 3A to 40A power requirements in Pico (12.2x12.2mm), Micro (20.3x11.4mm) and Mega (33x13.5mm) formats. The 3A, 6A and 12A DLynx are all available in the Pico format allowing developers the flexibility to increase or decrease the needed power level throughout the development cycle without requiring board spins. The GE Energy approach of offering multiple power levels in the same footprint eliminates the added component expense and circuit board real estate required to parallel multiple DC-DC converters. Offering double the density of a discrete power design, DLynx POLs meet IPC9592 performance and reliability requirements.

Digital power provides access to critical load information including current and voltage, enabling the system to monitor the power consumption at the highest possible resolution—at the processor or other silicon load. As part of the GE Energy Total Efficiency architecture, the new DLynx modules deliver optimized current derating, efficiency of 96 percent, and are priced lower than previous generation analog POLs to accelerate digital power adoption in new product designs.

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Combining higher efficiency with advanced thermal management, the new 40A MegaDLynx delivers leading 9A/cm² power density with full load at 12Vin, 1.2Vo, 70°C ambient without airflow, or 80°C with 200LFM. The 20A MicroDLynx delivers full load at 80°C without airflow or 90°C with 200LFM. Current de-rating reflects cooler component temperatures that improve reliability.

Pricing and Availability

GE Energy delivers over a million POL modules a month and demonstrates proven field reliability with a mean time between failure (MTBF) of up to 3 billion hours. Available within 90 days worldwide, the 3A, 6A, 20A and 40A DLynx product pricing starts under \$3 per unit for OEM quantities. For more information please visit www.ge.com/powerelectronics [1]

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