High-Reliability 28V DC/DC Converters for Military Applications Offer Extended Input Range

SynQor has added the MQFL-28V product family to its portfolio of Hi-Rel dc/dc converters. Incorporating SynQor's field proven high-efficiency synchronous rectifier technology, this advancement results in the only wide range input dc/dc converters developed specifically for the Military/Aerospace industry.

To ensure survivability in the most hostile environments, the MQFL-28V series of 100W dc/dc converters is housed in full size (FL) packages using the company's QorSeal™ packaging technology which includes tin whisker mitigation.

While the MQFL-28V accepts continuous input voltages of 16 to 40V, it is capable of handling transient input voltages of 5.5 to 50V @ 1 second. The MQFL-28V family incorporates a special "boost-converter" stage that permits the converters to deliver full power through transients where its input voltage falls to as low as 5.5V.

The under-voltage transient profile is designed to comply with all initial engagement surges, starting or cranking voltage transients, and under-voltage surges specified in MIL-STD-704-8 (A through F), RTCA/DO-160E, MIL-STD-1275B and DEF-STAN 61-5 (Part 6)/5 (operational portions).

The MQFL-28V converters provide up to 100W of power and are now available with single output voltages of 3.3V, 5V, 12V and 28V. Additional single output voltage versions include 1.5V, 1.8V, 2.5V, 6V, 7.5V, 9V and 15V.

These feature-rich MilQor Hi-Rel MQFL-28V converters operate at efficiencies up to 91% and are designed to operate from -55°C to +125°C with multiple screening options for less stringent environmental requirements.

Standard features include fixed switching frequency, parallel operation with current share, remote sensing, output trim adjust, clock synchronization, primary and secondary reference enable, continuous short circuit and overload protecting, and input under-voltage lockout and input over-voltage shutdown. Complimentary EMI module solutions are available which include transient suppression circuitry, enable pass-through circuitry, and reverse polarity protection.

The MQFL-28V converters are compatible with industry standard formats, have no opto-isolators and follow NAVSO P3641A & MIL-HDBK-1547A component derating guidelines. MQFL-28 Hi-Rel converters are designed and manufactured to comply with a wide range of military standards, including Mil-Std-461(C, D, E) and RTCA/DO-160E (Section 22).

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