

High-Rel DC-DC Converter Features Epoxy Encapsulation, Greater Power Density

An addition to VPT's high-reliability COTS VPT series product line, the VPT250-2800S series single-output 250-W isolated dc-dc converters are designed for the increasing power conversion needs in military vehicles, ships, weapons, and other rugged systems requiring high-reliability solutions. Featuring VPT's proprietary six-sided encapsulated package with an integral metalized EMI shield, the VPT250 series is fully compatible with aqueous cleaning processes and is specifically intended for programs with harsh environments such as severe shock, vibration and thermal stresses (see the figure.)

The VPT250 features a wide input voltage range (16 V to 40 V per MIL-STD-704 and MIL-STD-1275) and delivers 250 W at efficiencies up to 92% from -55°C to 100°C. Using the company's proven design heritage, synchronous rectification topology and thermally conductive epoxy encapsulated packaging, the VPT250 series provides high-efficiency fixed-frequency operation, low input and output ripple, and superior thermal dissipation. Additionally, the VPT250 provides parallel current-sharing capability up to 1,250 W.

When compared with previously introduced VPT series products, the VPT250 provides design engineers with 25% more power in the same package envelope while improving electrical performance in key areas. Those improvements include 92% efficiency, reduced output ripple, tighter load and line regulation, and improved load step transient and recovery time

"Our new epoxy encapsulated packaging provides the VPT250 with an integral EMI shield, protection from cleaning or application solvents and chemicals as well as the option of thermal conduction from either the top or bottom surface," says Monty Pyle, vice president, sales and marketing for VPT. "Our customers said they need more power in the same space, impervious packaging and greater mounting flexibility without compromising electrical performance. The VPT250 checks all those boxes and more."

For more information on the benefits of the packaging, see "[Epoxy Encapsulated Package Streamlines Assembly Of High-Rel DC-DC Converters In Customer's Applications](#)" in the October 2014 issue of How2Power Today.



Figure. The VPT250-2800S series single-output 250-W isolated dc-dc converters are designed for the increasing power conversion needs in military vehicles, ships, weapons, and other rugged systems. These converters deliver 25% more power than VPT's previously introduced converters of the same size, yet are also compatible with aqueous cleaning processes.