ISSUE: August 2017

50-V Halfbrick Converters Enable GaN Wireless Power Amps

Artesyn Embedded Technologies has announced three series of 50-V dc-dc converter modules to support the rapidly growing number of high-power wireless base station (BTS) and remote radio head (RRH) deployments using GaN and high-voltage LDMOS technology for increased power density and higher efficiency. The AVE450, AVE500 and ADH700 series (see Fig. 1) are all based on a high-power-density open-frame design in a telecom industry-standard half-brick format, with an optional aluminum baseplate for excellent thermal performance.

The converters were designed in response to a growing need for 50-V modules, according to Artesyn. The AVE450 and AVE500 converters accept inputs of 36 V to 75 V, while the ADH700 accepts a 36-V to 65-V input. The AVE450 series offers greater than 95% typical efficiency (see Fig. 2) and can deliver up to 10-A output current, while the ADH700 and AVE500 series offers greater than 94.8% typical efficiency (see Fig. 3) and can deliver up to 14 A of output current. Both are competitive with other dc-dc converters, according to the company.

All three models can operate from -40°C to + 85°C ambient, and can continue to operate at full power up to a 100°C baseplate temperature—all without air cooling. The converters employ 280-kHz fixed-frequency switching to help minimize external EMI filtering requirements. They have no minimum load requirement and exhibit and MTBF of 1.5 million hours.

For more information, see the product data sheets for the AVE450 and AVE500 and the AVE700.

—contributed by Spencer Chin

Fig. 1. Three series of 50-V dc-dc converter modules support the growing number of wireless base station and remote radio head deployments using GaN and high-voltage LDMOS technology for increased power density and higher efficiency.

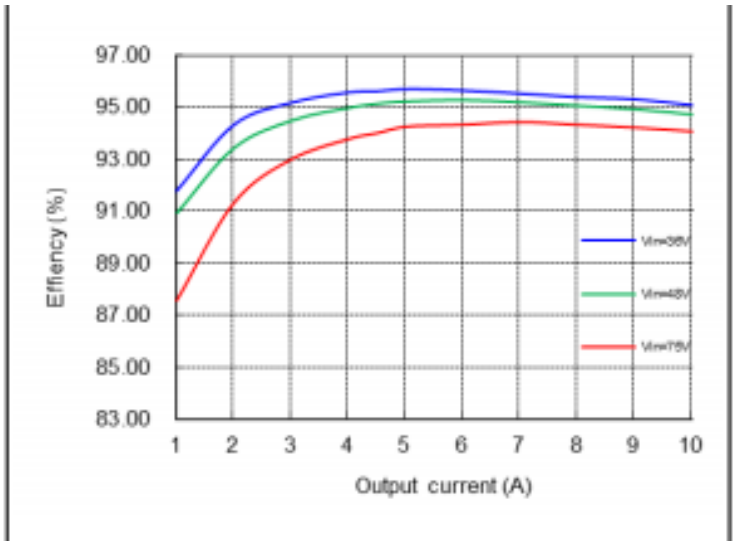

Fig. 2. Efficiency curve for AVE-500 dc-dc converter.

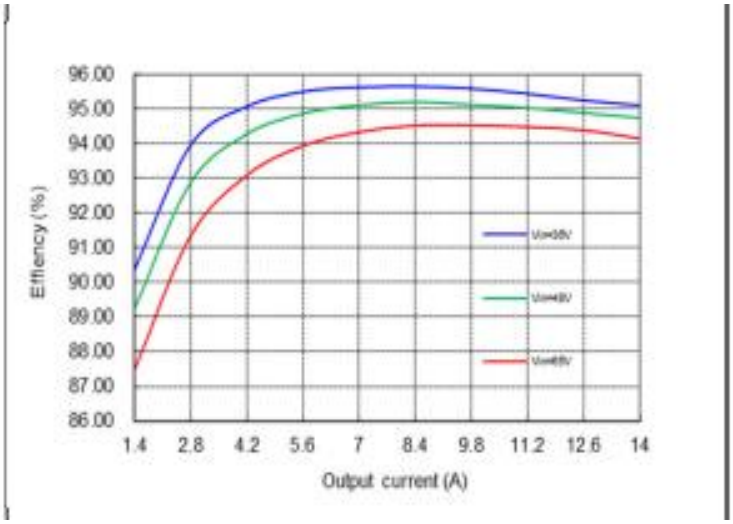

Fig. 3. Efficiency curve for ADH-700 dc-to-dc converter.