Eval Board Paves Way For SiC MOSFETs In Motor Drives

With silicon carbide (SiC) enroute to being mainstream in applications like photovoltaic inverters and uninterruptable power supplies, Infineon Technologies' EVAL-M5-E1B1245N-SiC evaluation board is intended to pave the way for SiC in motor drives. It was developed to support customers during their first steps in designing industrial drives with a maximum of 7.5-kW motor output.

The evaluation board comprises an EasyPACK 1B with CoolSiC MOSFET (FS45MR12W1M1_B11), a three-phase ac connector, an EMI filter, a rectifier and a three-phase output for connecting the motor. Based on the Modular Application Design Kit (MADK) the board is equipped with the Infineon standard M5 32-pin interface, which allows the connection to a control unit such as the XMC DriveCard 4400 or 1300. Its input voltage covers the range of 340 to 480 Vac (see the figure).

The new member of the MADK family is optimized for general-purpose drives as well as for servo drives with very high frequency. It features the EasyPACK 1B in Sixpack configuration with a 1200-V CoolSiC MOSFET and a typical on-state resistance of 45 mΩ. The power stage contains sensing circuits for current and voltage; and it is equipped with all assembly elements for sensorless field oriented control. The EVAL-M5-E1B1245N-SiC has a low inductance design, integrated NTC temperature sensors and a lead-free terminal plating, which makes it RoHS compliant.

The EVAL-M5-E1B1245N-SiC can be ordered now. More information is available on the company website.

Figure. Intended to support design of industrial drives with a max of 7.5-kW motor output, the EVAL-M5-E1B1245N-SiC evaluation board combines an EasyPACK 1B with CoolSiC MOSFET, a three-phase ac connector, an EMI filter, a rectifier and a three-phase output for connecting the motor. This board was developed to help customers take their first steps in designing SiC MOSFETs in motor drives.