

Eval board for 1200 V CoolSiC™ MOSFET 62 mm modules



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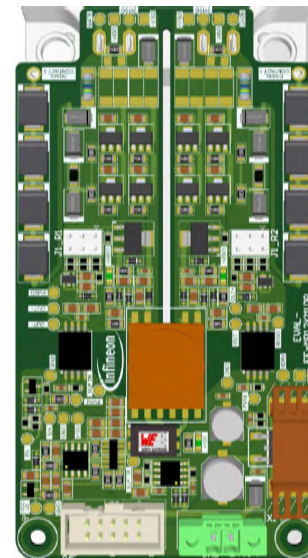


Eval board for 1200 V CoolSiC™ MOSFET 62 mm modules

- › This evaluation board is designed for a low inductive connection of 62 mm devices. Delivering a high output power that is suitable for fast switching of SiC MOSFET modules, it offers flexible adjustment of the gate voltage and gate resistors.

- › **Main feature of the EVAL board:**
 - CoolSiC™ MOSFET 1.2 kV 62 mm modules
 - Designed for
 - Fast characterization (double pulse / continuous operation)
 - Design guidance for driver boards for series production

- › **Focus applications:**
 - Applications with a focus on energy efficiency and reduction of magnetic components
 - Applications with a focus on high switching frequencies



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Summary of the test results with the EVAL board, also shown in the user guide of the EVAL board:

› Adapted V_{GS} (-5 V ... 0 V / +15 V ... +18 V)

- E_{on} rises slightly as V_{GS} increases from -5 V to 0 V
- E_{off} at the same level (same gate current modified with R_g)
- E_{on} with V_{GS} +18 V: Faster switching and lower conduction losses due to lower $R_{DS(on)}$
- **We recommend switching the device with V_{GS} -3 V/+18 V for highest power handling capability (lowest $R_{DS(on)}$)**

› Different gate cable length (direct / 8 cm / 20 cm)

- E_{on} / E_{off} is at the same level
- Gate cable lengths longer than 20 cm were not considered

› Parasitic turn-on

- Parasitic turn-on rises from $V_{GS} = -3$ V to $V_{GS} = 0$ V. Reduction of oscillation and E_{on} rises slightly
- E_{off} losses at the same level (gate current modified with R_g)
- **A light parasitic turn-on can be targeted to keep oscillation low, with slightly higher losses. CoolSiC™ MOSFET technology has a high robustness against parasitic turn-on**





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