



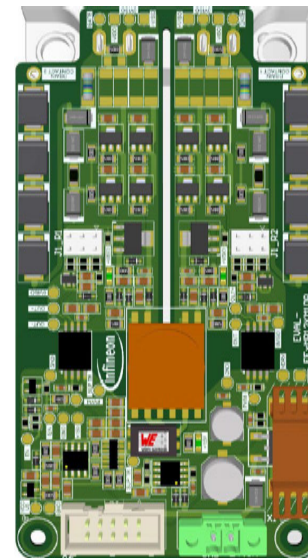
# Eval board for 1200 V CoolSiC™ MOSFET 62 mm modules

Infineon's virtual show 2020



# 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



# Eval board for 1200 V CoolSiC™ MOSFET 62 mm modules

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)

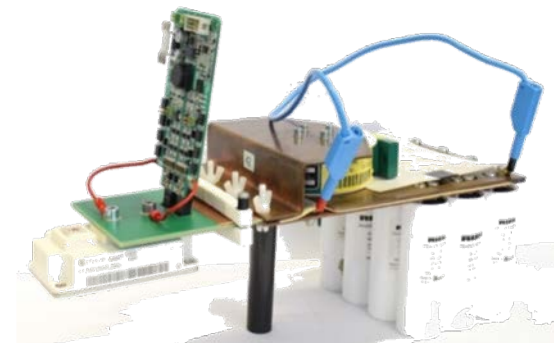
- $E_{on}$  rises slightly as  $V_{GS}$  increases from -5 V to 0 V
- $E_{off}$  at the same level (same gate current modified with  $R_g$ )
- $E_{on}$  with  $V_{GS}$  +18 V: Faster switching and lower conduction losses due to lower  $R_{DS(on)}$
- **We recommend switching the device with  $V_{GS}$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