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the digital world.

1200 V CoolSiC™ MOSFET in 62mm

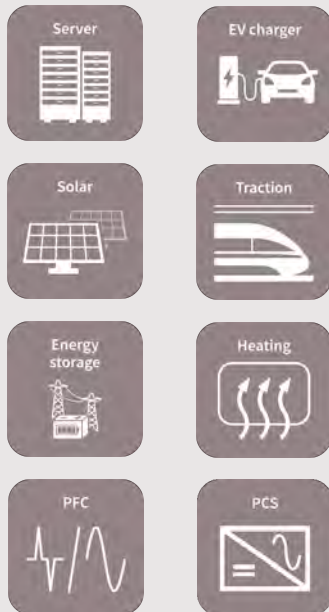
Infiniteon's virtual show 2020



62mm 1200 V CoolSiC™ MOSFET Product Family opens up markets and new application



Application areas



More niche
application to come!

Advanced module features

Robust mechanical module design

Well established module design with isolated baseplate allows screw connection of main terminals

Thermal performance

Long term proven pre-applied Thermal Interface Material (TIM) with optimized material pattern related to the baseplate provides lowest thermal resistance to achieve R_{th} improvement for extended lifetime

Simple mounting

4 baseplate mounting holes enable fast, cost-efficient and easy module assembly (no further solder or press-in process needed)

High power density

Modules with high current capability for leading CoolSiC™ chip technology

Topology

Standard Half-bridge configuration offers the solution for proven power inverter concepts for multiple application

Highest reliability

Optimized module for highest system-on-time (system availability), realized by high thermal cycling capability, provides a minimum of service cost and off-time losses

62mm 1200 V CoolSiC™ MOSFET Product Family at a Glance



Key Features

- › Leading 1200 V CoolSiC™ chip technology
- › Drain current I_{Dnom} up to 500 A (for 2mOhm module)
- › Half-bridge circuit
- › High speed switching with frequency of >20kHz
- › Low inductive module design of typically 20nH and symmetrical internal construction
- › Certification against UL1557, reference E83335
- › RoHS complaint
- › Optimized design for creepage and clearance distances (CTI>400)
- › Robust standard housing, screw main terminals
- › Available as standard and TIM version

Value Proposition of Module

- › $T_{vjop} = 150\text{ °C}$ (continuous)
- › High current density
- › Low switching losses
- › High switching frequency lowers filtering efforts and costs
- › Outstanding thermal performance



Key Customer Advantage

- › Advanced module solution to maximize power density, efficiency and reliability of power systems
- › Support compact system design and scalability of PEBB¹

¹ PEBB = Power Electric Building Block

Typical Applications



More niche application to come!

62mm 1200 V CoolSiC™ MOSFET

From chip technology to application benefit



CoolSiC™ Trench MOSFET as industrial benchmark technology in 62mm package opens and enlarges the semiconductor module market for high volume application where Si IGBT technology reaches it's limits. CoolSiC™ Trench MOSFET allows modern inverter designs with never before seen levels of efficiency and power density.

62mm 1200 V CoolSiC™ MOSFET

From chip technology to application benefit



CoolSiC™ MOSFET Technology

1. Superior gate oxide reliability
2. Highest robustness against humidity
3. Robust integrated body diode
4. High cosmic ray robustness

Module Features

1. High speed switching module with very low losses
2. Symmetrical module design and switching behavior of upper and lower switch
3. Standard construction technique of the module, and therefore known reliable. Production in the 62mm high volume production line

Application benefits

1. Minimizes cooling efforts due to very low switching losses
2. High switching frequency allows using less magnetic components. Therefor reduction in volume and size/dimension
3. Reduction of system costs, due to module benefits

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Part of your life. Part of tomorrow.