

CAS100H12AM1 Summary

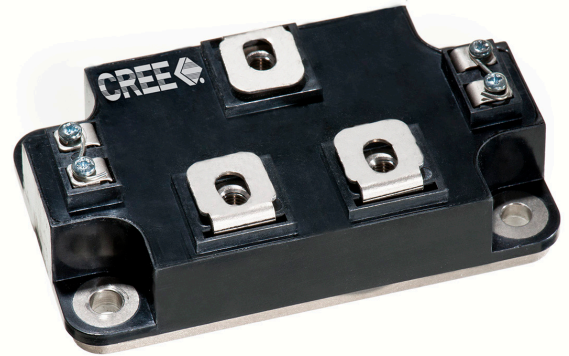
Cree introduces the industry's first fully qualified and production ready All-Silicon Carbide power module. The module, rated at 100A current handling and 1200V blocking, allows higher efficiency, compact and lighter weight systems that can result in lower total system costs.

Device Uses

- High-Power converters
- Motor Drives
- Solar Inverters
- UPS and SMPS
- Induction Heating
- Mil/Aero

Key Specifications

- Package size 50 x 89 x 25 mm³
- Blocking voltage: 1200V
- Current Rating: 100A ($T_c \leq 100C$)
- $R_{DS(on)}$: 16 m Ω



Benefits

- Enables compact and lightweight systems
- High efficiency operation
- Mitigate over-voltage protection
- Ease of transistor gate controls

Gate Driver boards Available

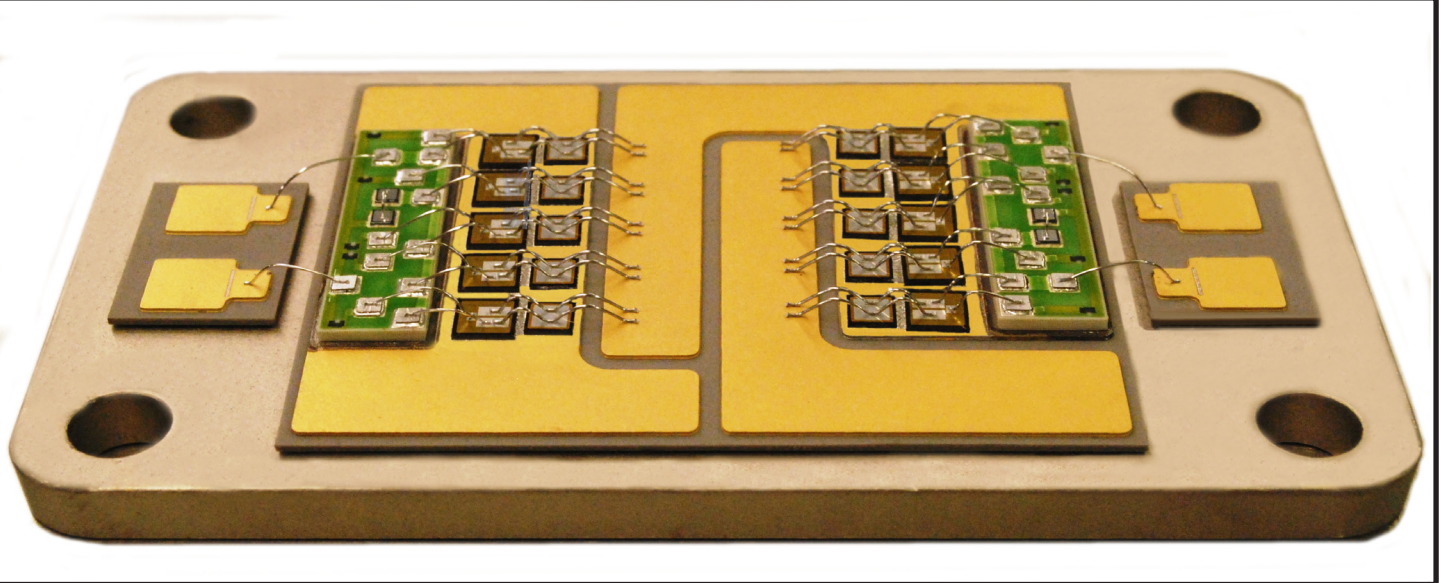


Competitive Comparison ($T_j = 150^\circ C$)

Supplier, P/N	Switch / Diode	V_{DS} (V)	I_D (A)	E_{SW} (mJ)	Q_{rr} (nC)	V_{ISOL} (kV)
Cree, CAS100H12AM1	SiC MOSFET SiC Schottky Diode	1200V	105	3.5	1.6	6.0
Infineon, FF100R12RT4	IGBT4 EC4 Diode	1200V	100	20.5	19	4.0



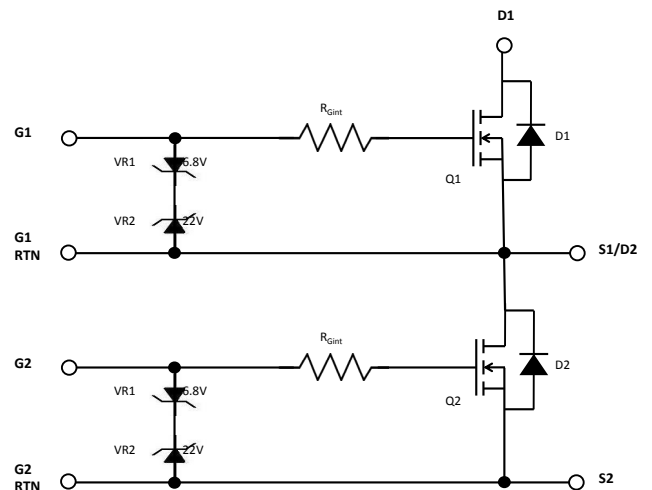
Half-bridge module with Cree SiC MOSFET and SiC Diodes



Module Construction

- Populated with commercially released and qualified Cree SiC MOSFETs and Diodes
- AlSiC baseplate decreases weight and increases temperature/power cycling capability
- Si_3N_4 AMB substrate provides rugged mechanical construction

Equivalent Electrical Circuit



Suggested Resale Price

0 - 1K	\$430
1 - 5K	\$395
5 - 10K	\$370
> 10K	Contact Cree

Power_sales@Cree.com

Target Customer

- Typical power ranges from 10kW to 50kW per phase; >30kW per system
- Looking for higher efficiency, less system volume and weight
- Looking to increase Switching Frequency. (30kHz - 100kHz)
- Bus voltages up to 960V