

## 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 mm<sup>3</sup>
- Blocking voltage: 1200V
- Current Rating: 100A ( $T_c \leq 100C$ )
- $R_{DS(on)}$  : 16 m $\Omega$



## Benefits

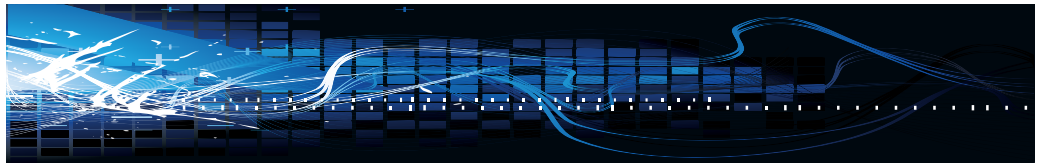
- Enables compact and lightweight systems
- High efficiency operation
- Mitigate over-voltage protection
- Ease of transistor gate controls

## 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



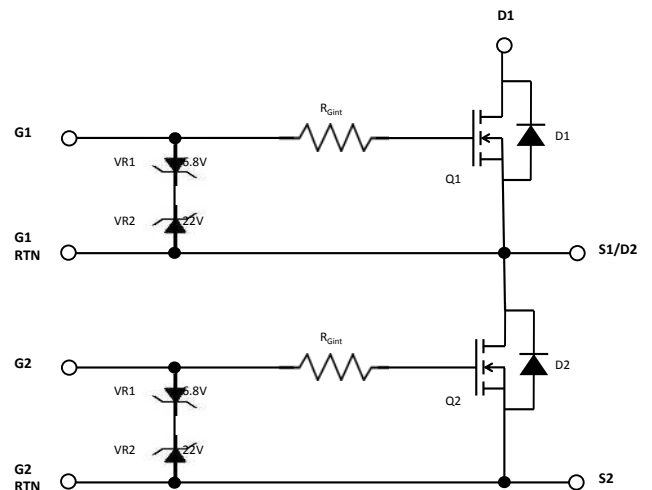
## Half-bridge module with Cree SiC MOSFET and SiC Diodes



### Module Construction

- Populated with commercially released and qualified Cree SiC MOSFETs and Diodes
- AlSiC baseplate decreases weight and increases temperature/power cycling capability
- $\text{Si}_3\text{N}_4$  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