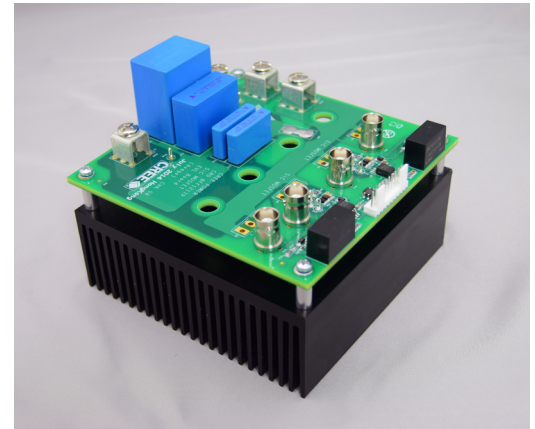


# CREE Silicon Carbide MOSFET Evaluation Kit

## KIT8020CRD8FF1217P-1

### Features:

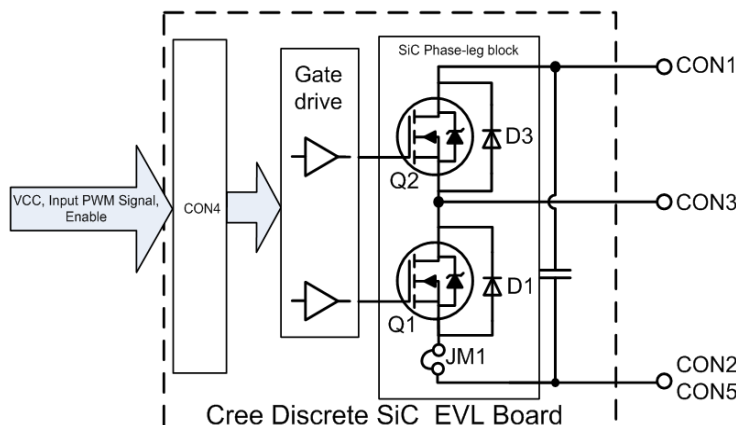
- Includes all the power stage parts needed to quickly assemble a CREE MOSFET and diode based power converter and get started with SiC devices.
- Easy to use assembly to evaluate CREE MOSFET and Diode performance in a half bridge circuit.
- Easily configurable to different power conversion topologies such as Buck or Boost configurations.
- Easy access to critical test points for measurement including  $V_{GS}$ ,  $V_{DS}$  and  $I_{DS}$ .
- Good layout example for properly driving MOSFET and diode with minimal ringing.
- Gate drive schematic and layout reference for a TO-247 packaged CREE MOSFET.
- Comparative testing between CREE devices and IGBTs.



Some assembly Required

### Description:

This Evaluation kit is meant to demonstrate the high performance of all CREE 1200V MOSFETs and CREE Schottky diodes (SBD) in standard TO-247 package. The kit includes two Cree 80mOhm, 1200V CREE MOSFETs and two 1200V 20A schottky diodes; a half bridge configured evaluation board that includes isolated gate drivers and power supplies and all the other components needed to quickly assemble the half bridge power stage. The basic block diagram and specifications are shown below. The assembly can be easily configured for several topologies from the basic phase-leg configuration to several other common topologies as shown in the next section. Additional topologies like H-bridge and 3-phase inverter are possible with two or more of the evaluation kits.

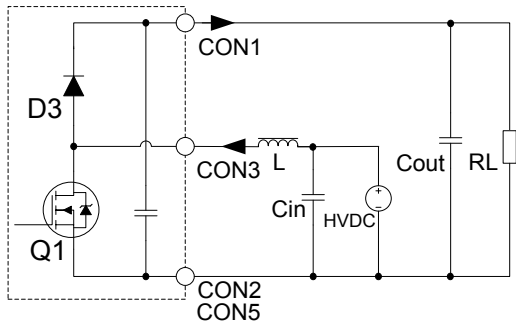


### Evaluation Board details

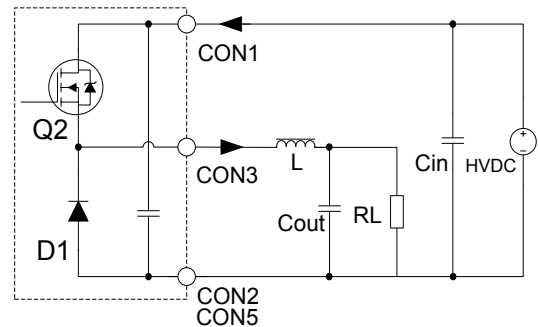
- 900V max.
- 10kW /w a cooling fan
- > 300 kHz
- +12V aux supply
- 2 input PWM channels

**Example configurations:**

Boost



Buck



**Evaluation Kit Contents**

Item No.	QTY	P/N	Description
1	1	CRD8FF1217P-1	Cree discrete device evaluation board
2	4	AOS2182471	Ceramic isolation tile, 1.5mm thickness
3	1	57908	Extruded Al Heat sink with mounting holes.
5	2	C2M0080120D	Cree 80mΩ SiC MOSFET
6	2	C4D20120D	Cree 20A SiC Schottky Diode
7	1		Copper shorting strip
8	2	74270011	Ferrite Bead
9	8	91166a210	M3 washer, Zn-S, 7mm OD, 3.2mm ID
10	4	92005a129	M3x22mm, Zn-S, Board mounting Screw
11	4	94669a727	Stand offs, Al spacer, 6mm OD x 14mm
12	4	92005a120	M3x10mm, Zn-S, Device mounting screw
13	1		User Guide

**Warning:** Cree designed evaluation hardware is meant to be an evaluation tool in a lab setting for Cree components and to be handled and operated by highly qualified technicians or engineers. The hardware is not designed to meet any particular safety standards and the tool is not a production qualified assembly