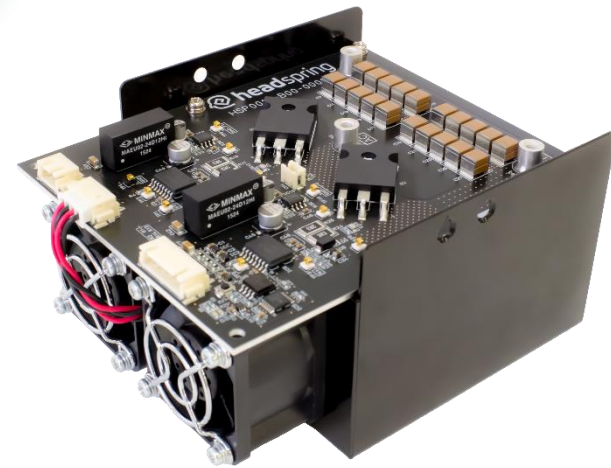


SiC Circuit Block for Power Electronics

HGCB-2A-401350

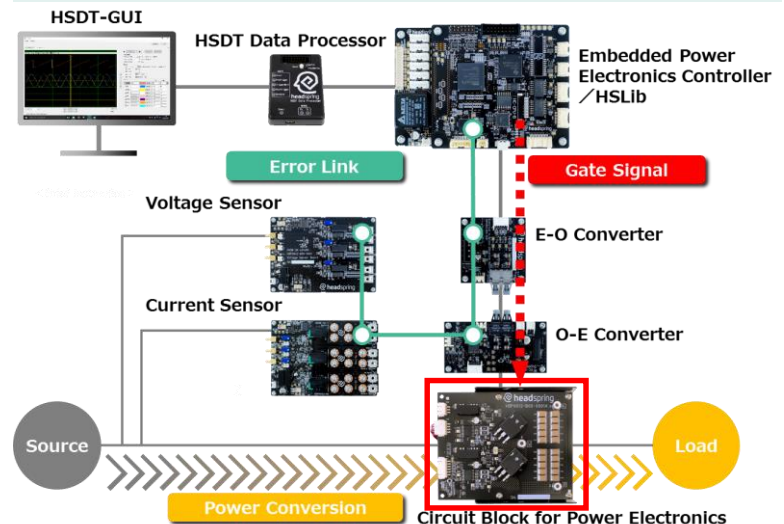


Circuit Block with Next Generation SiC Device to Enable Easy Design of Various Power Converters

Abstract

- Equipped with Trench SiC-MOSFET by Rohm
- 2 SiC Power Devices and Gate Drivers on-board, Heatsink and FAN
- Driven with External Gate Input and Power Source
- Condenser for Output Filter, 24V and 5V Power Supply, Wire Cabling, Controller are needed.
- Control Circuit and Main Circuit are Isolated
- Hardware-based Circuit Protection against Arm-shorting and wrong Gate Patterns

Connection Image



Features

SiC-MOSFET, Isolated Gate Drive, Gate Power Supply On Board

- Easy Installation of Development and Evaluation Environment using SiC Power Device
 - ✓ On-board Isolation; Only control signals are needed for the evaluation

Simple and Open Structure

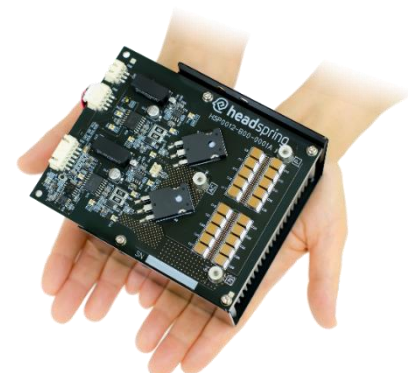
- Easy to Check Characteristics of SiC and Surrounding Items
 - ✓ Test Pins on Circuit Board for Various Evaluation
 - ✓ Minimized Circuit Structure to Simple Evaluation

Free Circuit Diagram Information

- Evaluation of both Theory and Practice
 - ✓ For Reference of User's Circuit Design
 - ✓ User can Customize for their own Purpose

Easy to Carry

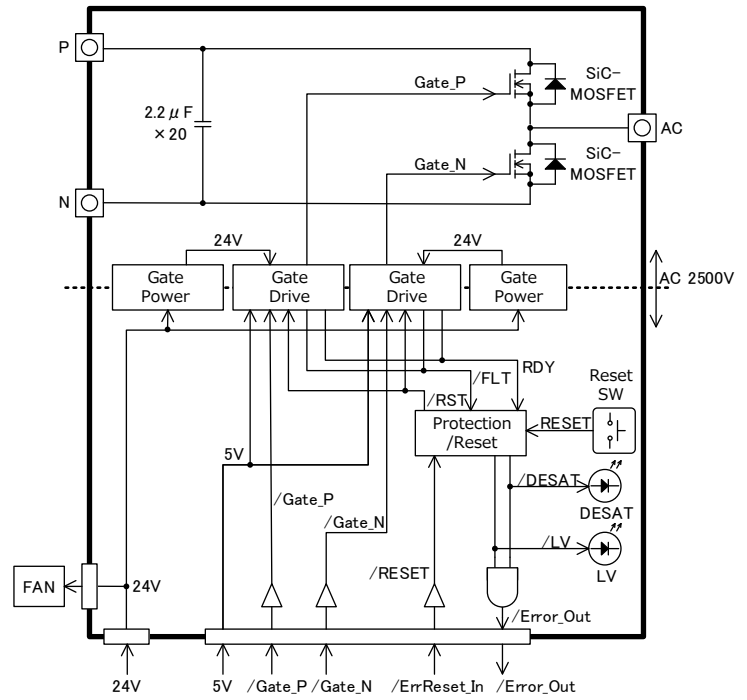
Space-saving of Lab.



Specifications

| Subject | Specification | Note |
|----------------------|------------------------|---|
| Size | W127 x D104 x H68 (mm) | |
| Weight | 860g | |
| Voltage Range (High) | 0~400V | P-N Voltage |
| Voltage Range (Low) | 0~380V | AC-N Voltage |
| Current Range (Low) | ±35A | AC port Current |
| Capacity | 7.0kW | When used as DC/DC Converter (Derating in High Frequency Range) |
| Switching Frequency | ~200kHz | |
| Dead time | >200ns | |

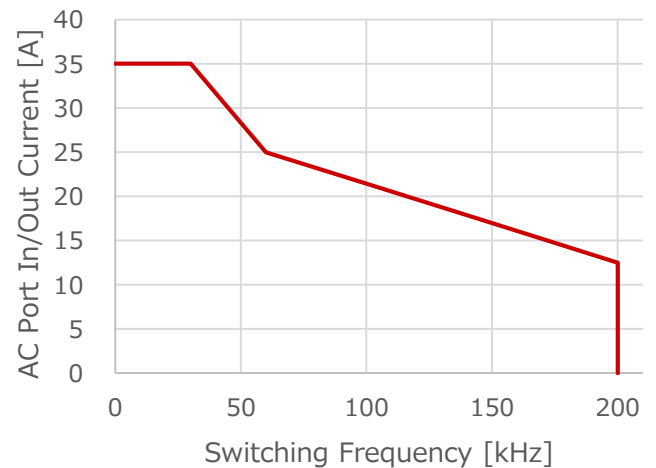
Block Diagram



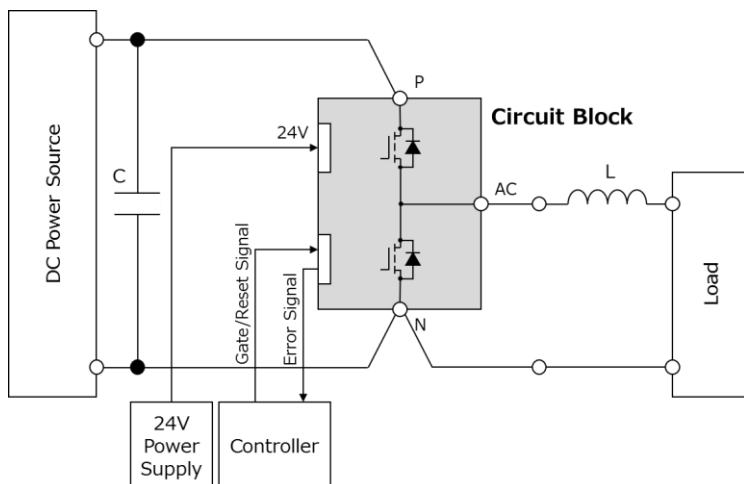
External Interface

| Signal | I/O | Description |
|--------------------|--------|--|
| Gate Signal | Input | 5V TTL (Negative) Pull-up with 4.7kΩ |
| Error Reset Signal | Input | 5V TTL (Negative) Pull-up with 4.7kΩ |
| Error Signal | Output | 5V TTL (Negative) Pull-up with 4.7kΩ "OR" output of DESAT Protection and Gate Drive Protection |

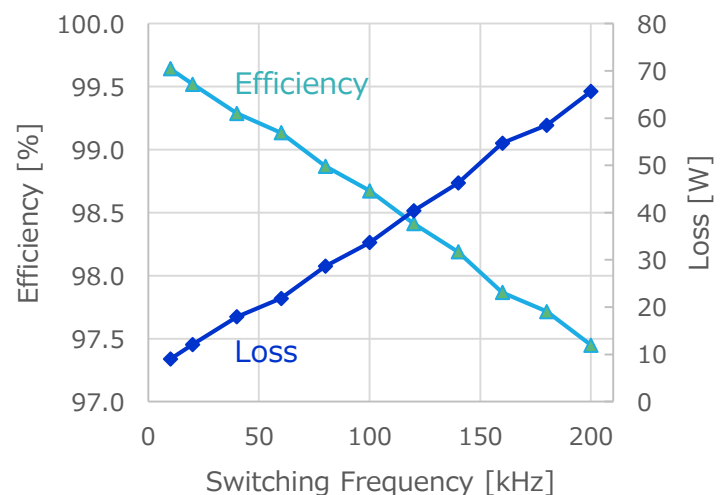
Derating



Connection Example



Efficiency / Loss (Connection Example, DC400V input, DC200V output, 12.5A)



* Specifications and Design are subject to change