

# Embedded Circuit Block for Power Electronics

## SiC Three Phase Inverter

# HGCB-6A-401300



### Abstract

- Equipped with Trench SiC-MOSFET by Rohm
- 6 SiC Power Devices, Gate Drivers, Sensor Circuit mounted on-board in 3-phase Inverter topology, Heatsink and FAN included
- Driven with External Gate Input and Power Source
- Analogue signal output measured by voltage/current sensor
- 24V/5V power supply, cabling, controller are to be provided by customers.
- Control circuit and main power circuit are isolated.
- Hardware-based circuit protection against shoot-through or wrong gate pattern input.

### Features

## SiC-MOSFET, Gate Drivers, Voltage/Current Sensor on Board

- Easy Evaluation Environment of SiC 3-phase Inverter
  - ✓ Voltage/Current Feedback system with sensor signal
  - ✓ Chopper, 1-phase inverter can be realized by arrangement of connection
  - ✓ Compatible for Headspring Standard Controller

## Free Circuit Diagram Information Provided

- Evaluation by both Theory and Experiment
  - ✓ For reference of user's circuit design
  - ✓ Various customization available

As of June/2017

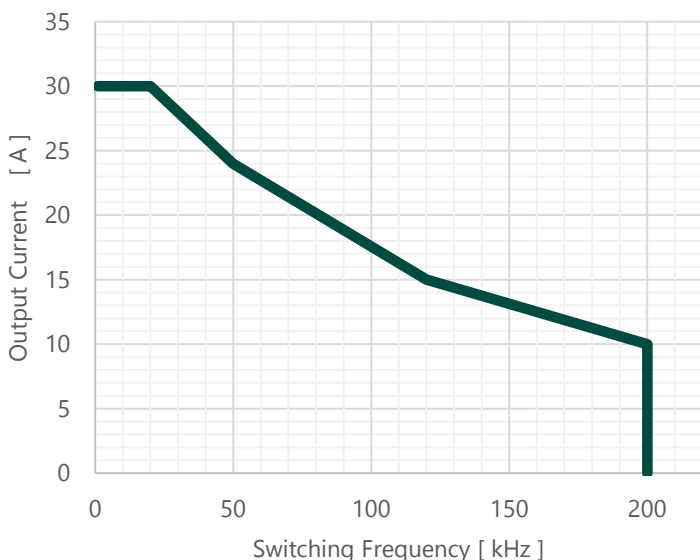
\* Specifications and Design are subject to change without notice.

## Specification (Model: HGCB-6A-401300)

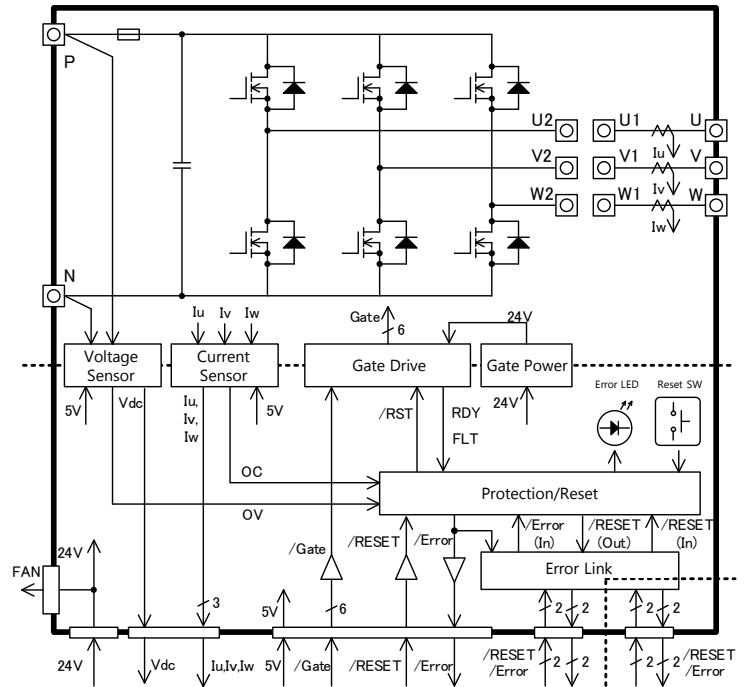
Subject	Specification	Notes
Size	W 213mm D 123mm H 67mm	Except for the Projections
Weight	950g	
Voltage Range (DC-side)	0V~400V	Between P-N port
Current Range (AC-side)	30Arms	AC port Current (Derating in High Frequency and High Voltage Range)
AC Power Capacity	10kVA	
Switching Frequency	~200kHz	
Dead time	200ns以上	Directly Defined by user
Voltage Sensor	400V / 4V	<ul style="list-style-type: none"> <li>- Between P-N port</li> <li>- Circuit Protection against over/under volatege (Threshold set by Volume)</li> </ul>
Current Sensor	±100A / ±4V	<ul style="list-style-type: none"> <li>- 3-phase Current</li> <li>- Curcuit Protection against over/under current (Threshold set by Volume)</li> </ul>
Power Supply 5V	< 0.15A	
Power Supply 24V	< 0.75A	

※Specification subject to change without notice

## Derating



## 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	<ul style="list-style-type: none"> <li>- 5V TTL (Negative) ("Low w/ error")</li> <li>- Overheat Protection Detection</li> </ul>
Analogue Signal	Output	<ul style="list-style-type: none"> <li>- DC Voltage x1</li> <li>- AC Current x3</li> </ul>
Error Signal (for Error Link)	Input/Output	<ul style="list-style-type: none"> <li>- 5V TTL (Positive)</li> <li>- Error Status Sharing</li> </ul>
Reset Signal (for Error Link)	Input/Output	<ul style="list-style-type: none"> <li>- 5V TTL (Positive)</li> <li>- Reset Status Sharing</li> </ul>

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