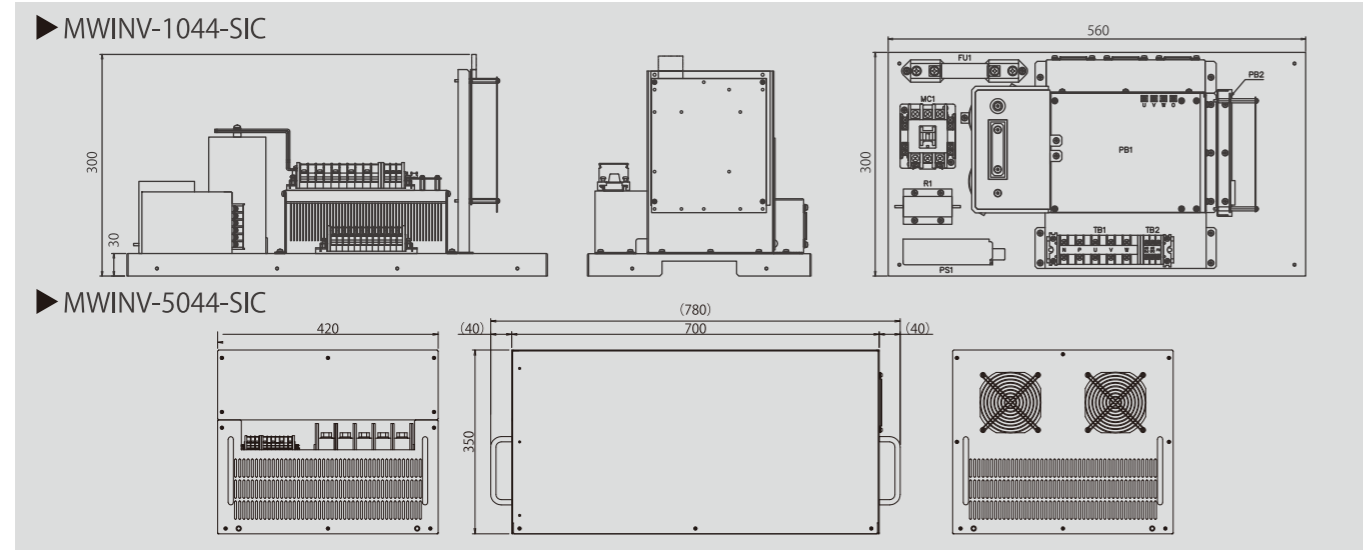


Specification List

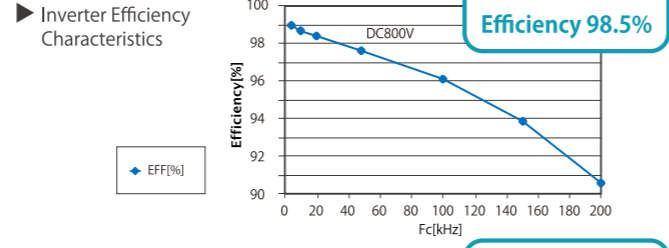
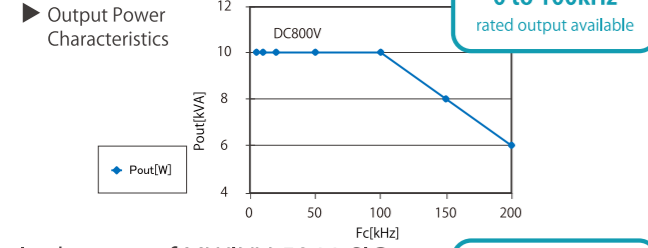
SiC Power Device - Equipped Inverter Unit		MWINV-1044-SiC	MWINV-5044-SiC
AC Output	Rated Power (Output voltage 400VAC)	10kVA	50kVA
	Rated Current	AC14.5Arms	AC72.2Arms
DC Input	Rated Current	DC15.1A	DC75.2A
	Rated Voltage	DC700V	
	Input Voltage Range	DC0 - 800V	
Switching Frequency		Up to 200kHz	
Cooling Method		Forced Air Cooling	
Dead Time		200ns or more	300ns or more
Outer Dimensions		560mm (W) × 300mm (H) × 300mm (D)	420mm (W) × 350mm (H) × 700mm (D)
Weight		About 14kg	About 53kg
Control Power Supply Voltage		AC85~264Vrms	
Insulation Resistance	Between main circuit and control circuit. Control circuit connected to FG	100MΩ or more	
	Between Control circuit and main circuit. Main circuit connected to FG	100MΩ or more	
Withstand Voltage	Between main circuit and control circuit. Control circuit connected to FG	AC2,500V for 1 minute	
	Between Control circuit and main circuit. Main circuit connected to FG	AC1,000V for 1 minute	

● Contact Myway Plus for the overseas specification.
Outer Dimensions Drawing

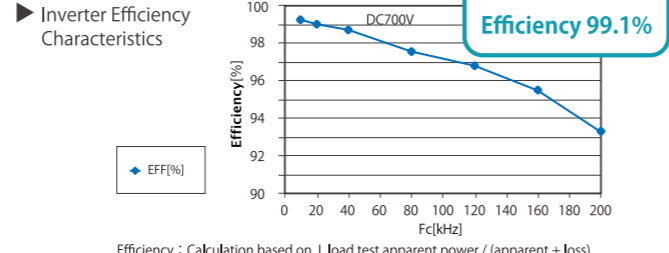
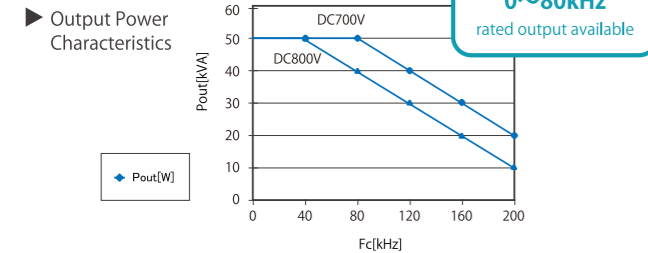


Switching Frequency

In the case of MWINV-1044-SiC



In the case of MWINV-5044-SiC



Efficiency : Calculation based on L load test apparent power / (apparent + loss)

⚠ Safety Precautions In order to use this product safely, be sure to read the "Instructions Manual" before using. Do not install this product in locations where there is excessive water, moisture, steam, dust, soot or etc. There is a possibility of causing death or serious injury due to fire, electric shock, failure or etc.

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● The specification and the external view indicated in this catalog may change without prior notice due to improvements. ● The color of the product in the photos may look different than the actual color due to the printing.
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The contents indicated in this catalog are as of November 2013.



SiC Device-Equipped Inverter Unit

MWINV-1044-SiC / MWINV-5044-SiC

World's **FIRST***1 inverter unit for testing designed with the SiC-MOSFET from ROHM Co., Ltd. Integrated gate driver achieves an inverter drive of **200kHz** with an external signal. Test environments can be constructed **quickly**, in combination with a dedicated controller.

(*1: Research from Myway Plus corporation, January 2013)

Is there anyone who wants to learn SiC control technology?

Reservations poured in before release, and the initial production was **COMPLETELY** sold out. Great responses have been obtained from many people in various fields.



● Made by Rohm Co., Ltd. SiC-MOSFET Module (BSM120D12P2C005) * Equipped in MWINV-5044-SiC
 ● Made by Rohm Co., Ltd. SiC-MOSFET Device (SCH2080KE) * Equipped in MWINV-1044-SiC

The SiC (silicon carbide) device which is expected to be the next generation power semiconductor enables **REDUCED** power consumption, **MINIATURIZATION** of power inverter circuits, such as inverters and DC/DC converters. This product is a test tool for the purpose of learning SiC control technology quickly.



MWINV-1044-SiC New
 ● AC Output: **10kVA**
 (700VDC input, 14.5ArmsAC output)

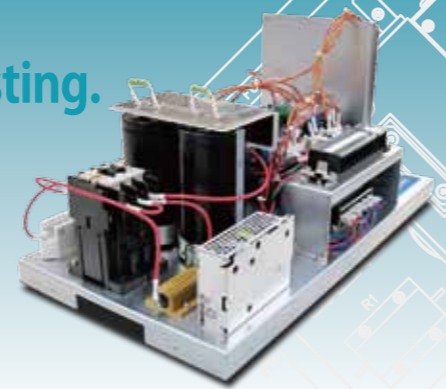
MWINV-5044-SiC New
 ● AC Output: **50kVA**
 (700VDC input, 72.2ArmsAC output)

A simple and convenient SiC inverter for testing.

The inverter provided by Myway Plus is specifically designed for experiment and can be operated with only external gate signal (※) input.

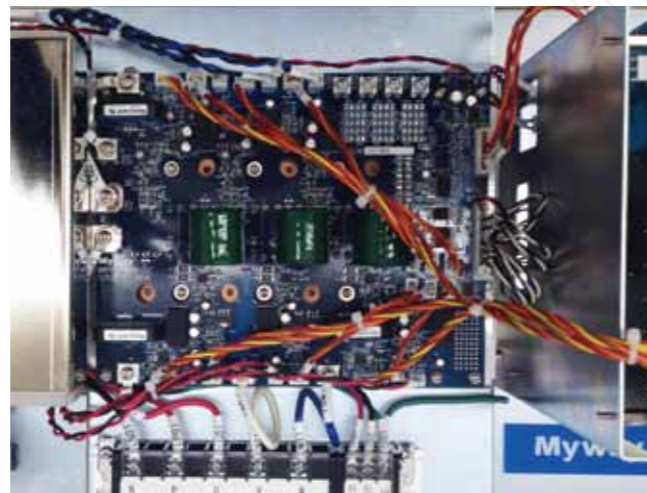
Experiment can be started immediately by preparing a power supply and a controller.

※: The controller which generates the gate signal is compatible to a wide range of commercial products and the products made by Myway Plus.



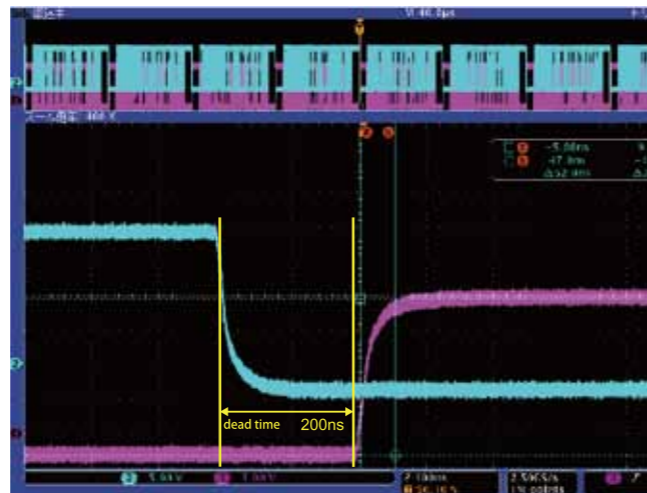
Fully Loaded with Functions Required for Tests Including Substantial Protection Functions

- The inverter exterior is simplified, hence the operation of the SiC can be checked easily with a tester or oscilloscope.
- The circuit diagram board of the SiC inverter is attached together with the inverter. This is exceptional useful for researchers whom are interested in the orientation of the circuit board in the interior of the experimental inverter.
- In consideration to the safety aspects, the inverter is equipped with protection functions such as DC and AC over current protection, hardware protection of vortex voltage and the deterioration of control voltage.



High Carrier Frequency, High Working Voltage and High Efficiency Utilizing SiC

- The inverter equipped with the SiC device achieves a carrier frequency of 200kHz. Can be experiment with high speed switching.
- The turn ON and OFF time of the switching is as short as 60 to 80ns, and the dead time has been reduced to 200ns, which is 1/15 (※) that of a conventional product.
(※: In case of dead time of a conventional inverter is 3 μsec, The dead time is 300ns in MWINV-5044-SiC.)
- The input voltage of the inverter is compatible to up to 800V with this inverter characteristic. The switching loss in reduced, achieving a high efficiency of 98.5%. (※)
(※: In case of a carrier frequency 20kHz.)



Not Only for Inverter Evaluations, but also for Evaluation of Single SiC Devices

- This inverter unit is simply designed. Therefore, in addition to the assessment inverter, this inverter can be used for various experimental purposes.
- For users who wish to evaluate the SiC device, the device can be directly tested through the leads of the device on the substrate. It is possible to determine the characteristics independent of the pattern. Evaluation tests can be carried out in a flexible manner suitable for development purposes.



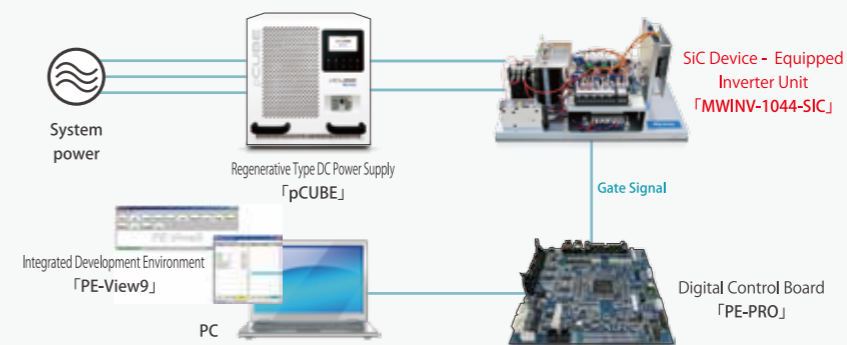
Combination of SiC Inverter

SiC System components

Inverter + Power Supply + Controller. The items required for testing in a set

The Myway Plus product is used by about 80% of the power electronics laboratories in Japanese universities. Test environments can be constructed **quickly** with this **reliable** and **proven** product, supported by numerous customers in combination with a SiC inverter. This product is recommended for customers who want to start testing immediately after delivery.

System component (Case of MWINV-1044-SiC)



Components	Model
SiC Device - Equipped Inverter Unit	MWINV-1044-SiC
Regenerative Type DC Power Supply 'pCUBE' 500V Type	MWBFP3-1250-J/C
Digital Control Board 'PE-PRO'	MWPRO-F28335A
Integrated Development Environment 'PE-View9'	PE-View9

Regenerative DC Power Supply

pCUBE®

This is the regenerative DC power supply pCUBE, compatible to the input range of the DC voltage of a SiC inverter. One pCUBE can output up to 500V/35A, and if two pCUBES are connected in series, it can handle up to a maximum voltage of 800V of the input voltage range of a SiC inverter. The connections can be changed freely to either series or parallel according to the environment. When the required voltage and current are changed, the pCUBE can be used in many ways as a power supply of a different specification. Since this is a regenerative type product, it can also be used as electronic load, and is ideal for the testing of motors.

* pCUBE is a registered trademark of Myway Plus.



MWBFP3-1250-J/C

Digital Control Board

PE-PRO

The digital control board (controller) developed to perform inverter control is equipped with a high speed floating point DSP TMS320F28335 made by Texas Instruments, Inc., and can be used in a dedicated integrated development environment (software: PE-View9). Inverter control can be performed more easily by performing software development with the integrated development environment (PE-View9). This product is equipped with a three-phase PWM output, analog input and digital input/output as the interface, and can be used for various applications. Commands are sent to the controller from a PC to drive the inverter.



MWPRO-F28335A

Specialized Library for Inverter Control

This product includes a library with a collection of functions to perform complicated processes, such as the gate output (PWM output) to an inverter, coordinate conversion and other processes. Just by combining the functions of the library, control programs can be created easily.

WAVE Function Enables Real Time Monitoring of Parameters

In the WAVE function, the parameters in the program can be visualized in real time. This function is useful when checking the command values or the operation results in the program, or checking the variations of the values before and after the occurrence of errors.

Isolates between PC-Digital Control Boards with Optical Communication

Optical communication is adopted in order to isolate between the PC-digital control boards. By isolating between the boards, the noise generated by the switching of the inverter and etc. can be blocked to prevent malfunctions of the PC.