

For power semiconductor



High temperature Reverse Bias Evaluation System

Model: RBS-A1-0804-03H

Reference → Power devices

<http://www.espec.co.jp/english/products/market/auto/power.html>

<http://www.espec.co.jp/english/products/market/new/power.html>

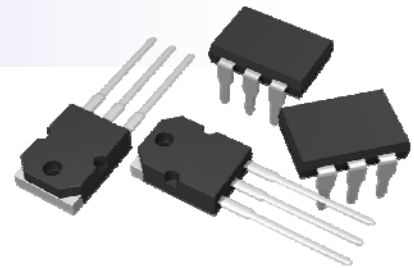


The high temperature reverse-bias evaluation system is to use as screening system for the reliability of power semiconductor like power MOS FET etc. The Early "infant Mortality" Failures of FET will be removed by impressing the pinch-off voltage at the Gate and impressing a specified voltage to the Drain. The protection circuit is provided to stop the voltage impression when FET is damaged and Drain (D) - Source (G) has short-circuited. The test can be performed for the reverse-bias up to 2000V with the high temperature as 250°C.

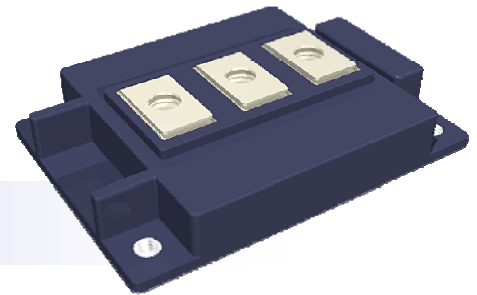
Targeted device

—Power semiconductor —

Power MOS FET is widely used as an electric power control device in the electronics equipment. With using latest LSI technology, it contributes to miniaturizing and making higher efficiency as a high-speed switching element with low on resistance. **The IGBT module** is a semiconductor switching element used to control the high-power for the inverter and the DC-DC converter. Although the switching speed is same as Power MOSFET of the same rating voltage, it's small on resistance attracts attention as a semiconductor for electric vehicle (EV).



Power MOS FET



The IGBT module

Feature and Application

The safety circuit and the device protection circuit are enhanced. Various safety circuits for the human body, the equipment, and the device are equipped for a high voltage application up to DC2000V

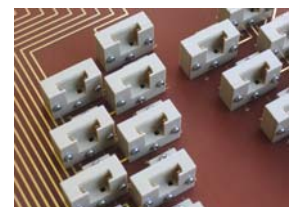
Electric shock prevention

- ①The electrical discharge circuit board: When the door opened, cover opened and the test finished, the power supply circuit is forced to switch to the electrical discharge circuit board side for lower the voltage promptly to the safety range for protection of human.
- ②Digital panel meter for over voltage detection
By the Digital panel meter with Peak Hold Function, the stress voltage is always monitored duration of test and will be stopped when monitored value exceed the set limit.

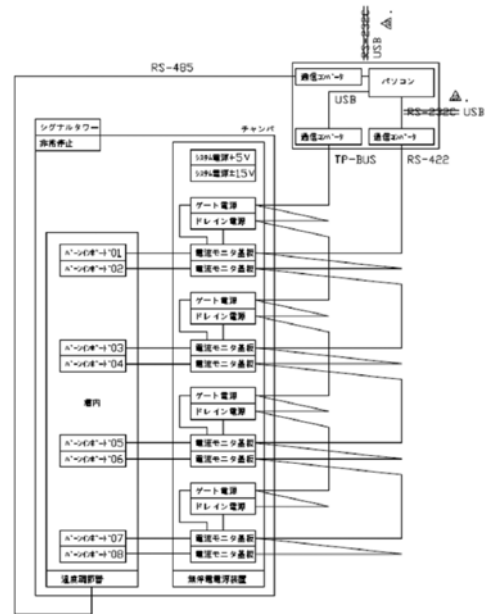
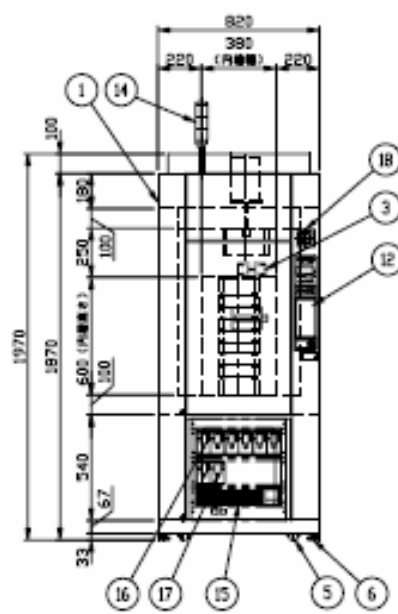
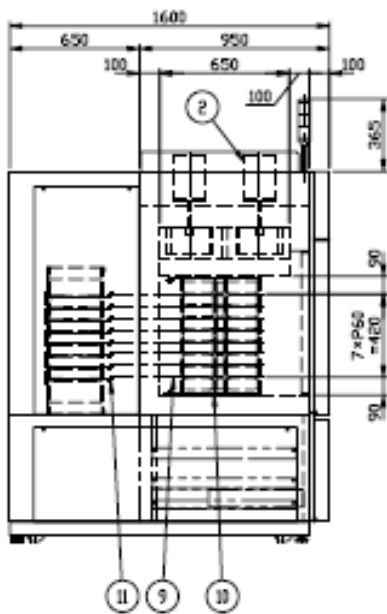
Device protection

When the over current and the excess voltage detected due to D-S short-circuit, stress voltage will be stopped individually on the failed devices and it will be displayed on PC monitor.

The board and the socket will be tailed to specific shapes and test temperature to secure stable test environment and ease of reliability test.



Externals/system block chart



Specifications

Chamber part	
Temperature range	RT~250°C (Caution: limit to maximum allowable temperature for the socket.)
Temperature uniformity	±3°C
Allowable live load	0.75kw
Temperature heat up and pull down time	(heat up time) 40°C~200°C Within at 60 minutes. Live load At 0.75kw (Pull down time) 200°C~50°C Within at 60 minutes. Live load At 0.75kw
Others	Heat exhaust device (damper)

Static part	
Zone composition	25 pieces/board 2 boards/zone 4 boards/zone
Power supply specification	Gate voltage: 0~-10V (Cut off current :0V) Drain voltage: 0~60V (Cut off current :100mA)
BI board	25 pieces/board Heatproof 220°C
Others	Test management application Contact check function Uninterrupted power supply

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Automobile



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