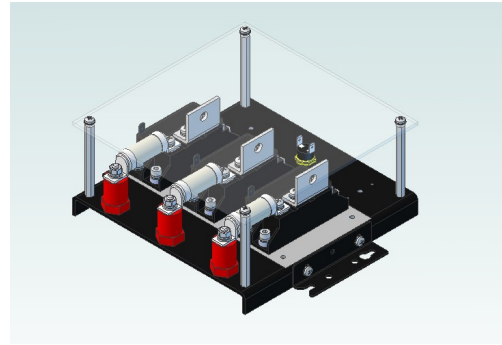


**HIGHLIGHTS**

- Wide range.
- Reliability.
- Short delivery time.
- Ultrafast fuses included.
- Thermostat, snubber and varistor included.
- Ready to use.
- Working voltage up to 400 V<sub>RMS</sub>.
- Insulation 2500 V<sub>RMS</sub>/1 min.



non-contractual image

**GENERAL SPECIFICATIONS**

Nominal line to line input voltage (V <sub>RMS</sub> )	400 V <sub>AC</sub> ±10%
Repetitive peak reverse voltage (V <sub>RRM</sub> )	1200 V <sub>P</sub>
Maximum working current (I <sub>RMS</sub> ) (1)	28 A <sub>RMS</sub> @ 45°C TA
Maximum nominal working current (I <sub>RMS</sub> ) (2)	21 A <sub>RMS</sub> @ 45°C TA
Cooling	Natural air

(1): The maximum non continuous working current

(2): The maximum continuous working current without thermal protection activation

**SEMICONDUCTOR SPECIFICATIONS**

Peak non-repetitive surge current (I <sub>TSM</sub> )	520 A @ T <sub>p</sub> =10ms, T <sub>j</sub> =45°C, (50Hz), sine
	460 A @ T <sub>p</sub> =10ms, T <sub>j</sub> =125°C, (50Hz), sine
I <sup>2</sup> t capacity for fusing	1,35 kA <sup>2</sup> s @ T <sub>p</sub> =10ms, T <sub>j</sub> =45°C, (50Hz), sine
	1,05 kA <sup>2</sup> s @ T <sub>p</sub> =10ms, T <sub>j</sub> =125°C, (50Hz), sine
Maximum rate of rise of on-state current (repetitive) (di <sub>T</sub> /dt)	150 A/μs
Maximum rate of rise of on-state current (non-repetitive) (di <sub>T</sub> /dt)	500 A/μs
Maximum peak on-state voltage (V <sub>TM</sub> )	1,64 V @ I <sub>TM</sub> =80A
Critical rate of rise of off-state voltage (dv/dt)	Min. 1000 V/μs @ T <sub>j</sub> =125°C, V <sub>D</sub> =2/3 V <sub>RRM</sub>
Gate trigger voltage (V <sub>GT</sub> )	max. 1,5 V @ T <sub>j</sub> =25°C, V <sub>D</sub> =6V
	max. 1,6 V @ T <sub>j</sub> =-40°C, V <sub>D</sub> =6V
Gate trigger current (I <sub>GT</sub> )	max. 100 mA @ T <sub>j</sub> =25°C, V <sub>D</sub> =6V
	max. 200 mA @ T <sub>j</sub> =-40°C, V <sub>D</sub> =6V
Latching current (I <sub>L</sub> )	450 mA @ T <sub>j</sub> =25°C, t <sub>p</sub> =10μs; V <sub>D</sub> =6V
Holding current (I <sub>H</sub> )	200 mA @ T <sub>j</sub> =25°C; V <sub>D</sub> =6V

**PROTECTION**

dv/dt protection (RC)	RC network 0,068μF/150 Ohms
Peak voltage protection (VDR)	460 V <sub>RMS</sub> varistor
Current protection (Semiconductor fuses) (1)	EW32
Thermal protection (Thermostats)	95°C NC

(1): Fuses only for shortcircuit protection. User provide external protection for continuous overloads and cable size.

**RECTIFICADORES GUASCH, S.A.**

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SPAIN

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### TERMINAL SPECIFICATIONS

Input power terminals (AC terminals)	(M6) 4,5 to 5,5 Nm
Module power terminals	(M5) 2,5 to 4,0 Nm
Output power terminals	1xØ8,5 (M8) 11 to 13 Nm (1)
SCR control terminals (G&K)	Fast-on 2,8/0,8 (2)
Thermal cut-off terminals	6,35 mm Fast-on

(1): The press should be performed with two keys, avoiding to transmit lateral efforts at terminal of connection, what would be able to produce the deterioration of the element semiconductor.

(2): Fast-on 2,8 mm connectors provided by user. In no case should be proceeded to the direct welding on these terminals.

### ENVIRONMENT SPECIFICATIONS

Protection grade (EN-60529 / CEI529 / UNE-20324)	IP-00
Humidity max.	50% RH @ 35°C / 90% RH @ 20°C
Pollution degree	III
Isolation	2500 V <sub>RMS</sub> / 1 min

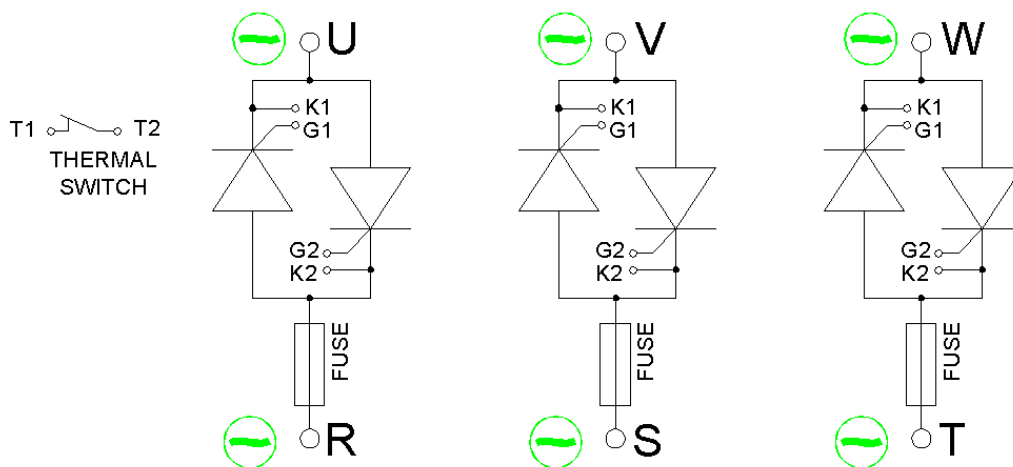
### LOSSES

Power dissipation of semiconductors at full charge	Aprox. 65 W
Maximum power dissipation of fuse at full charge	Aprox. 10 W
Maximum total power dissipation at full charge	Aprox. 74 W

### MECHANICAL SPECIFICATIONS

Mounting position	Vertical (fins perpendicular to base)
Storage temperature	-25 to 80°C
Width	244 mm
Depth	97 mm
Height	200 mm
Aprox. Weight	2,3 Kg.

### BASIC CIRCUIT



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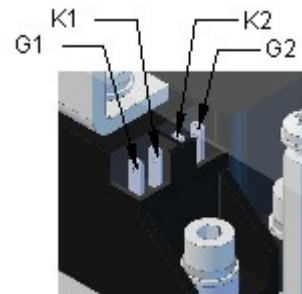
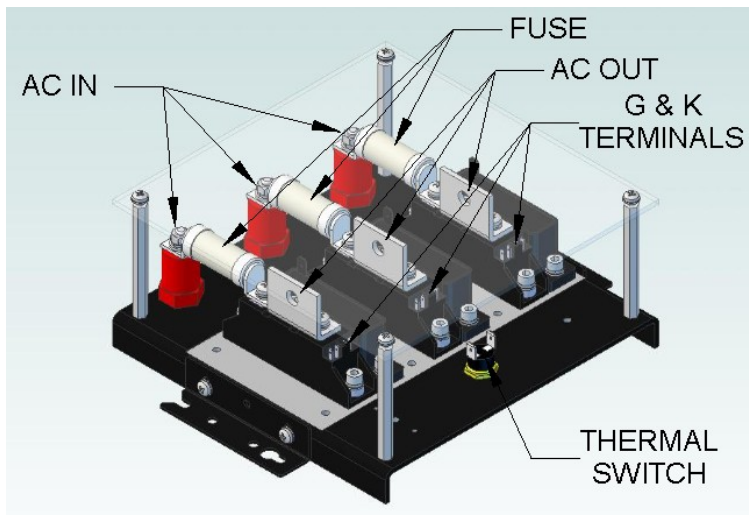
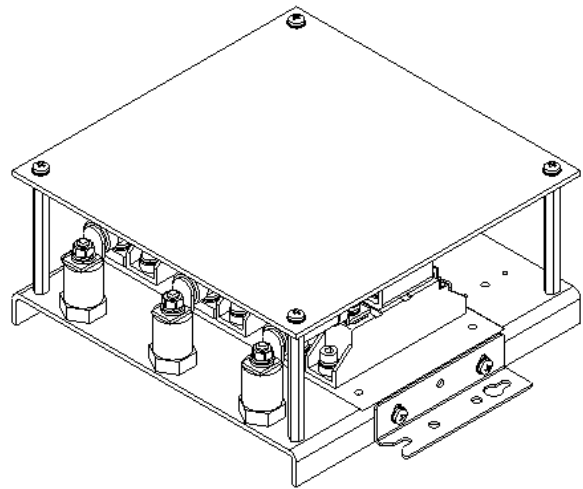
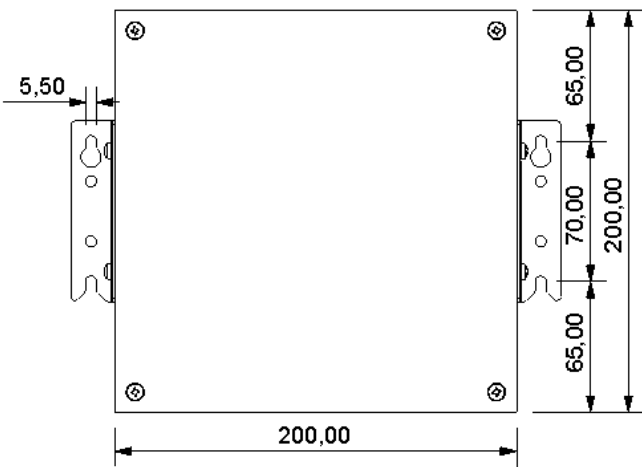
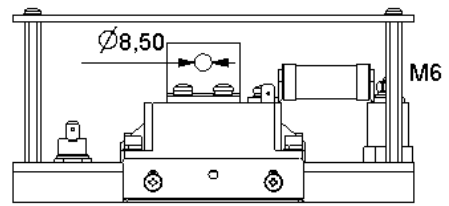
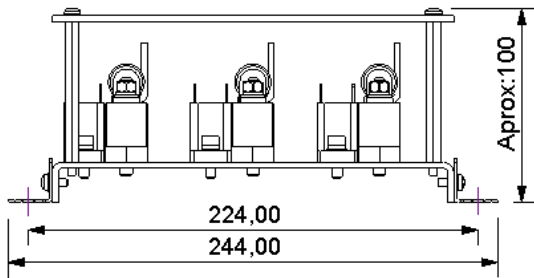
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**DIMENSIONS.**



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### **MOUNTING CONSIDERATIONS**

It's necessary a minimum distance of 100 mm with regard to the envelope. The free air circulation should be guaranteed. Avoiding the heat sources of nearby to assembly.

In the real applications it is important to consider a safety margin with regarding the working current, we recommend a margin of the 20%.

For critical cases (24 hours work, repetitive overloads...), margins of the 30% to 50% are used.

### **ORDER CODES & OPTIONS**

MF- W3C 0028 N 12 RCVTF  
(1) (2) (3) (4) (5) (6)

1- MF: Series identifier

2- W3C: Circuit identifier

3- 0028: Maximum current identifier

4-N: Refrigeration identifier (N: Natural convection)

5-12:  $V_{RRM}/10$  identifier

6-Accessories:

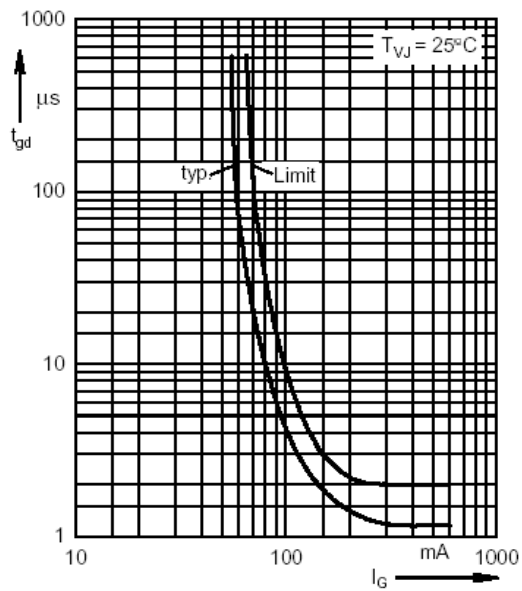
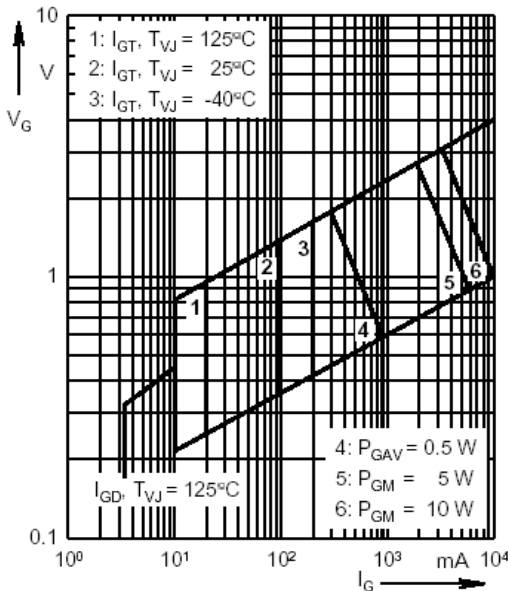
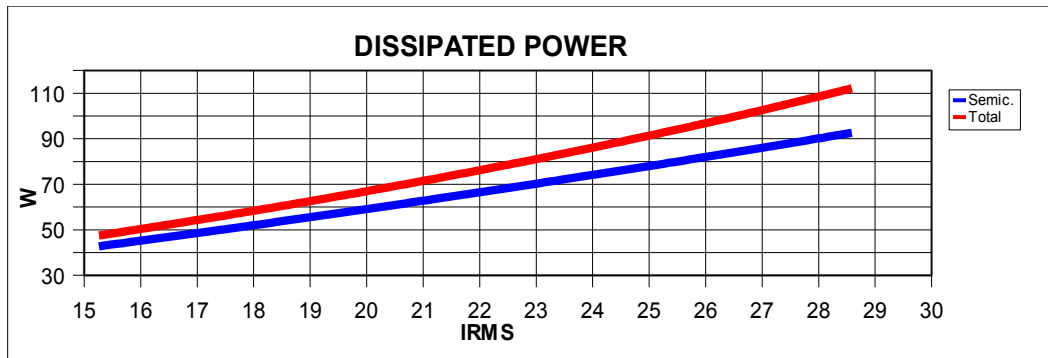
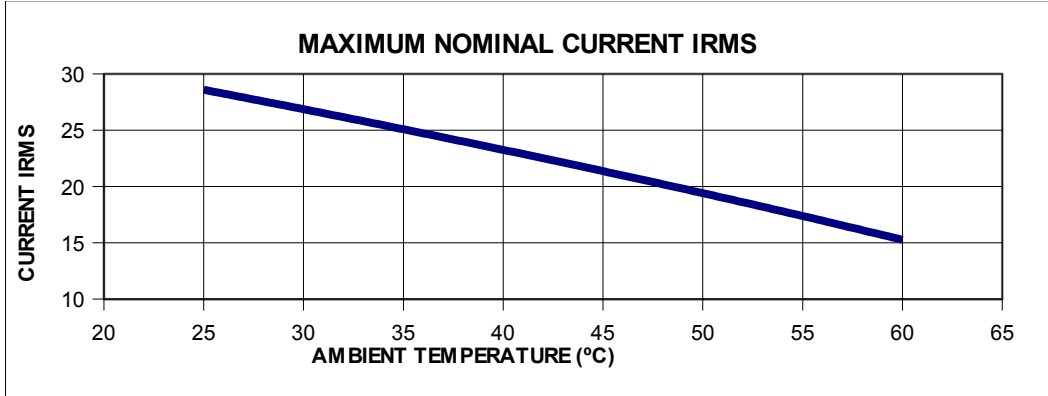
RC: Resistance-capacitor (snubber) included

V: Varistor included

T: Thermal switch included

F: Semiconductor fuse protection included. (fuse also includes microswitch)

**GRAPHICAL INFORMATION**



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No Annotation: The product parameters are fixed and the product is available to data sheet specification.

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