

## Power Resistors Cooled by Auxiliary Heatsink (Not Supplied) Thick Film Metal Technology



### FEATURES

- Technology: thick film metal on ceramic
- Cold system without external radiation
- High power / volume ratio
- Non-inductive
- Easy assembly, self-calibrated pressure (400 N)

### STANDARD ELECTRICAL SPECIFICATIONS

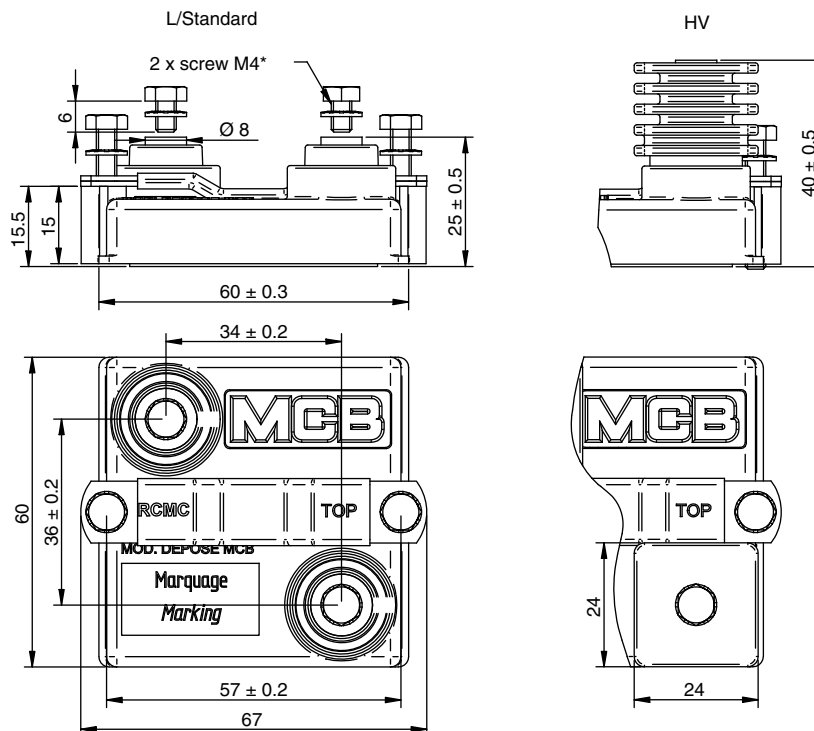
| MODEL | RESISTANCE RANGE<br>$\Omega$ | MAX. RATED POWER $P_{25\text{ }^{\circ}\text{C}}$<br>W | TOLERANCE<br>$\pm \%$ | TEMPERATURE COEFFICIENT<br>$\pm \text{ppm}/^{\circ}\text{C}$ | E-SERIES<br>OHMIC<br>VALUES |
|-------|------------------------------|--------------------------------------------------------|-----------------------|--------------------------------------------------------------|-----------------------------|
| RCMC  | 0.27 to 18                   | 750                                                    | 10                    | 150                                                          | E 12                        |

### MECHANICAL SPECIFICATIONS

|                             |                                             |
|-----------------------------|---------------------------------------------|
| UL 94 flame classifications | Material comply with the standard UL 94 V-0 |
| Resistive element           | NiCr alloy                                  |
| Substrate                   | Alumina                                     |
| Encapsulation               | Resin filled case                           |

### TECHNICAL SPECIFICATIONS

| PARAMETER                                            | 500L                                          | 500    | 500HV    |
|------------------------------------------------------|-----------------------------------------------|--------|----------|
| Nominal power rating at 70 °C                        | 500 W                                         |        |          |
| Operating temperature range                          | -55 °C to +125 °C                             |        |          |
| Maximum operating voltage                            | 5000 V                                        |        |          |
| Dielectric strength $V_{\text{RMS}}$ (50 Hz / 1 min) | 5000 V                                        | 7000 V | 12 000 V |
| Creepage distance                                    | 42 mm                                         | 42 mm  | 75 mm    |
| Clearance distance                                   | 12 mm                                         | 12 mm  | 30 mm    |
| Capacitance: ground                                  | 120 pF                                        |        |          |
| Capacitance: parallel                                | 40 pF                                         |        |          |
| Partial discharge                                    | On request                                    |        |          |
| Inductance                                           | $\leq 40 \text{ nH}$                          |        |          |
| Insulation resistance                                | $10^5 \text{ M}\Omega$ at 500 $V_{\text{CC}}$ |        |          |
| Weight (max.)                                        | 120 g                                         |        |          |

**DIMENSIONS** in millimeters

**PERFORMANCE**

| TESTS                   | CONDITIONS                                                                                                  | REQUIREMENTS                          | TYPICAL VALUES |
|-------------------------|-------------------------------------------------------------------------------------------------------------|---------------------------------------|----------------|
| Momentary overload      | 1000 W / 10 s                                                                                               | 2 %                                   | 0.2 %          |
| Humidity (steady state) | 56 days, 40 °C, 95 % HR                                                                                     | 2 % or 0.05 $\Omega$ <sup>(1)</sup>   | 0.2 %          |
| Mechanical shock        | CEI 61373 cat 1 class B half sinus<br>50 m/s <sup>2</sup> / 30 ms<br>6 per axis (3 negative and 3 positive) | insul. > 10 <sup>3</sup> M $\Omega$   | 0.25 %         |
| Vibration               | CEI 61373 cat 1 class B random<br>5 Hz to 150 Hz 7.9 m/s <sup>2</sup><br>5 h per axis                       | 0.5 % or 0.05 $\Omega$ <sup>(1)</sup> | 0.25 %         |
| Terminals strength      | 200 Ncm / 200 N                                                                                             | 0.5 % or 0.05 $\Omega$ <sup>(1)</sup> | 0.1 %          |
| Endurance               | 2000 cycles P <sub>n</sub> 30 min / 30 min                                                                  | 1 % or 0.05 $\Omega$ <sup>(1)</sup>   | 0.2 %          |

**Note**
<sup>(1)</sup> The higher of either value

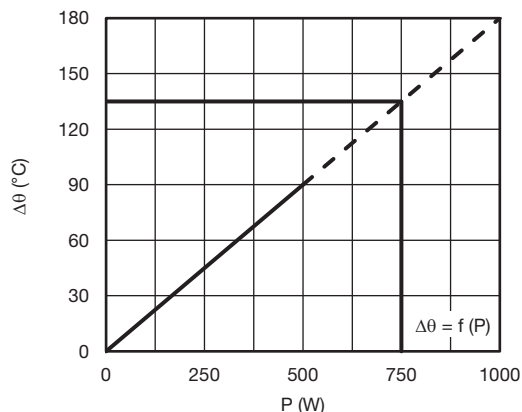
**ENERGY ABSORPTION**

Repetitive operation: 25 J/t = 50  $\mu$ s

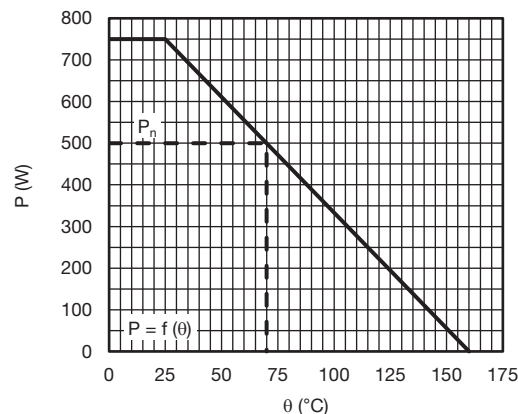
Accidental operation: 100 J/t = 50  $\mu$ s / 100 impulsions max.

Other t values: contact us

## DISSIPATION

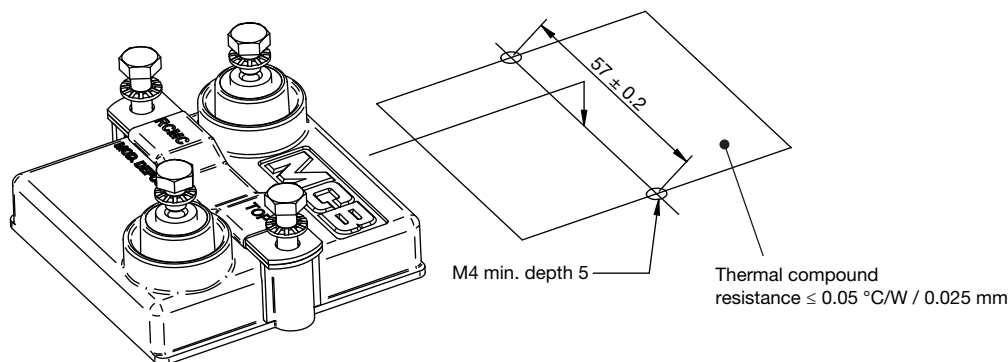


Temperature Rise as a Function of the Power Applied  
Overall Thermal Resistance 0.18 °C/W (See Assembly)



Permanent Applicable Power as a Function  
of Heatsink Temperature

## ASSEMBLY



Screws and bolts are supplied with each product.

Max. tightening torque:

200 Ncm, mechanical mounting

200 Ncm, electrical connection

2 screws TH M4 x 6/6 and 2 M4 contact lock washers for connections. 2 off CHC M4 x 16/16 class 8.

## COOLING

The temperature of the heatsink may be maintained at the specified values with

- Forced air ventilation
- Internal circulation of a liquid cooling
- Heatsink contact surface: Ra 6.3 μm
- Evenness defect: 0.05 mm max.
- Surface temperature gradient (isotherm): 20 °C max.
- Thermal compound not supplied (resistance  $\leq 0.05$  °C/W / 0.025 mm)

The user must select the thermal resistance of the heatsink according to the power applied



**OPTIONS**

- Electrical terminals: M5
- Other terminal size
- Output cable

**ORDERING INFORMATION**

| RCMC  | 500HV                                     | 10 $\Omega$                                                     | 10 %      |
|-------|-------------------------------------------|-----------------------------------------------------------------|-----------|
| MODEL | TYPE<br>(SEE TECHNICAL<br>SPECIFICATIONS) | RESISTANCE VALUE<br>(SEE STANDARD ELECTRICAL<br>SPECIFICATIONS) | TOLERANCE |



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