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


## FEATURES

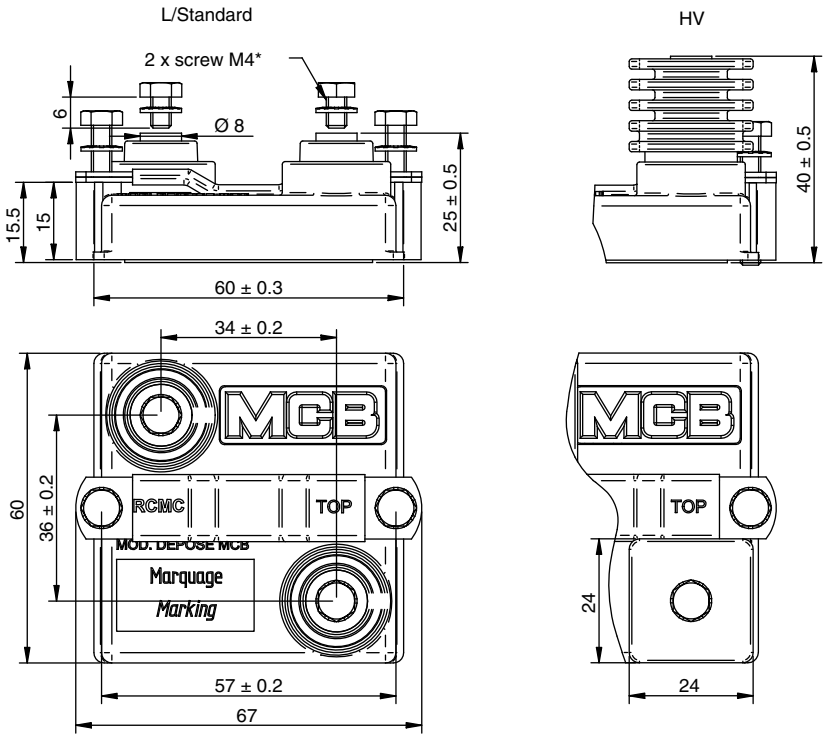
- Technology: thick film metal on ceramic
- Cold system without external radiation
- High power / volume ratio
- Non-inductive
- Easy assembly, self-calibrated pressure (400 N)

| STANDARD ELECTRICAL SPECIFICATIONS | | | | | |
|---|---|---|---|---|---|
| MODEL | RESISTANCE RANGE Ω | MAX. RATED POWER $P_{25\ °C}$ W | TOLERANCE ± % | TEMPERATURE COEFFICIENT ± ppm/°C | E-SERIES OHMIC 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 $V_{RMS}$ (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 | ≤ 40 nH | | |
| Insulation resistance | $10^5$ MΩ at 500 $V_{CC}$ | | |
| 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 Ω (1) | 0.2 % |
| Mechanical shock | CEI 61373 cat 1 class B half sinus<br>50 m/s² / 30 ms<br>6 per axis (3 negative and 3 positive) | insul. > $10^3$ MΩ | 0.25 % |
| Vibration | CEI 61373 cat 1 class B random<br>5 Hz to 150 Hz 7.9 m/s²<br>5 h per axis | 0.5 % or 0.05 Ω (1) | 0.25 % |
| Terminals strength | 200 Ncm / 200 N | 0.5 % or 0.05 Ω (1) | 0.1 % |
| Endurance | 2000 cycles $P_n$ 30 min / 30 min | 1 % or 0.05 Ω (1) | 0.2 % |

**Note**

(1) The higher of either value

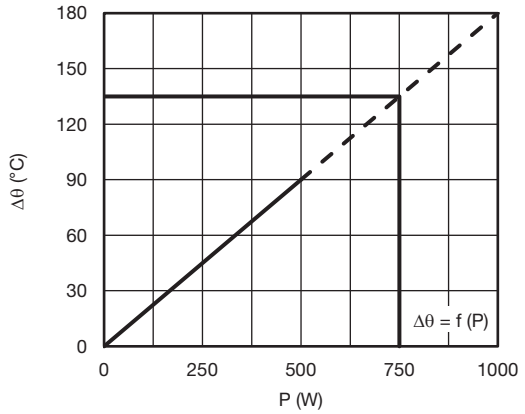
## ENERGY ABSORPTION

Repetitive operation: 25 J/t = 50 µs

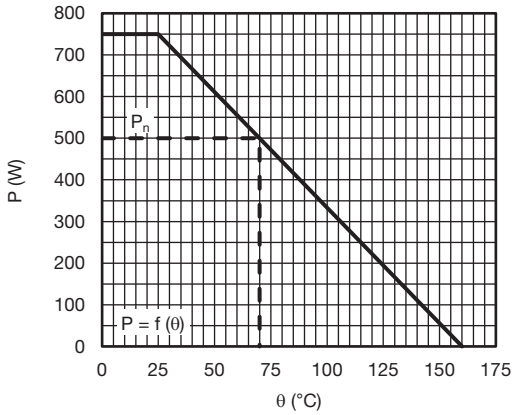
Accidental operation: 100 J/t = 50 µs / 100 impulsions max.

Other t values: contact us

## DISSIPATION

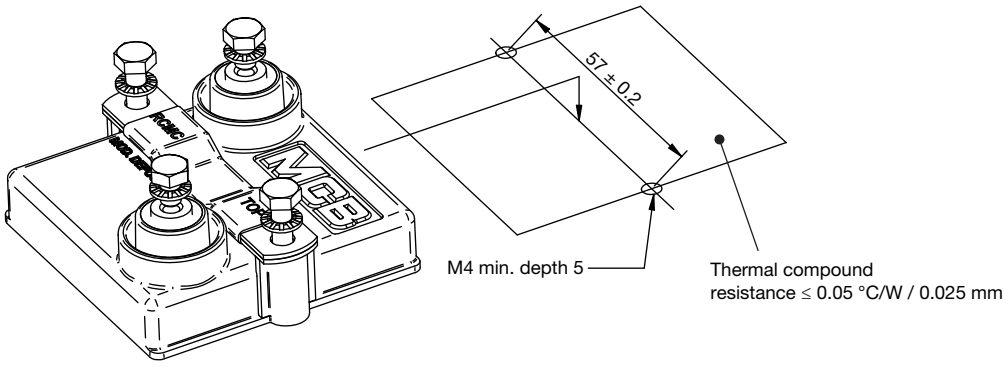



Temperature Rise as a Function of the Power Applied
Overall Thermal Resistance 0.18 °C/W (See Assembly)




Permanent Applicate 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 ≤ 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 Ω | 10 % |
|---|---|---|---|
| MODEL | TYPE (SEE TECHNICAL SPECIFICATIONS) | RESISTANCE VALUE (SEE STANDARD ELECTRICAL SPECIFICATIONS) | TOLERANCE |

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