

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


FEATURES

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

STANDARD ELECTRICAL SPECIFICATIONS

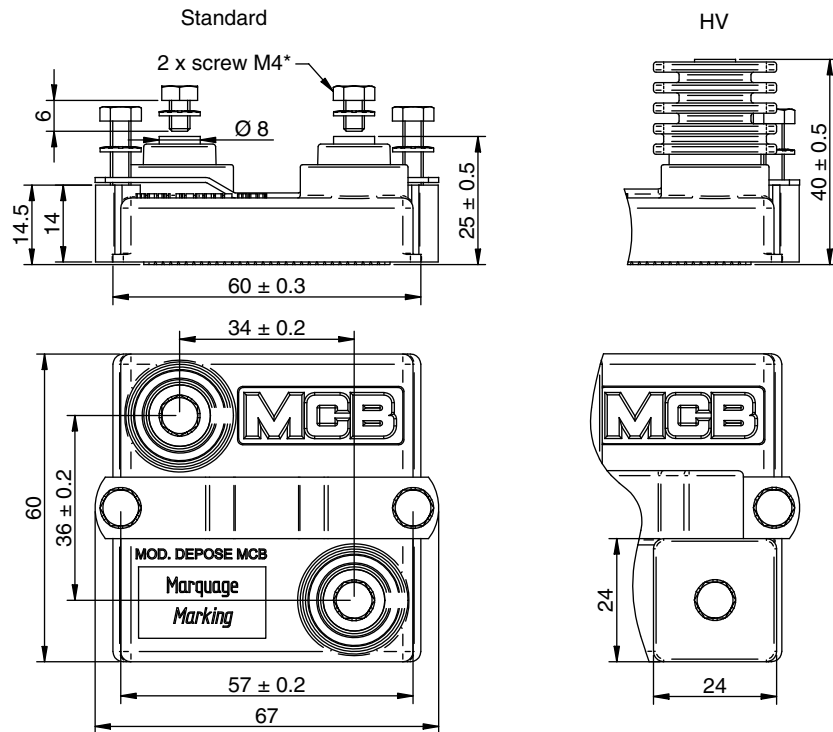
| MODEL | RESISTANCE RANGE Ω | MAX. RATED POWER $P_{75^\circ\text{C}}$ W | TOLERANCE \pm % | TEMPERATURE COEFFICIENT \pm ppm/ $^\circ\text{C}$ | E-SERIES OHMIC VALUES |
|----------|------------------------------|--|----------------------|--|-----------------------------|
| RCEC 750 | 1 to 1M | 750 | 10, 5 | 150 (typical) | E 12 |

MECHANICAL SPECIFICATIONS

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

TECHNICAL SPECIFICATIONS

| PARAMETER | 750 | 750HV |
|--|--|----------|
| Operating temperature range | -55 $^\circ\text{C}$ to +150 $^\circ\text{C}$ | |
| Maximum operating voltage | 5000 V | |
| Dielectric strength V_{RMS} (50 Hz / 1 min) | 7000 V | 12 000 V |
| Creepage distance | 42 mm | 75 mm |
| Clearance distance | 12 mm | 30 mm |
| Capacitance: ground | 120 pF | |
| Capacitance: parallel | 40 pF | |
| Partial discharge | \leq 500 pC at 7000 V_{eff} \leq 10 pC at 5000 V_{eff} Other cases: consult us | |
| Inductance | \leq 40 nH | |
| Insulation resistance | 10^5 $M\Omega$ at 500 V_{CC} | |
| Weight (max.) | 120 g | |

DIMENSIONS in millimeters

PERFORMANCES

| TESTS | CONDITIONS | REQUIREMENTS | TYPICAL VALUES |
|-------------------------|---|---|----------------|
| Momentary overload | 1200 W / 10 s $\theta = 70$ °C | 2 % | 0.2 % |
| Humidity (steady state) | 56 days, 40 °C, 95 % HR | 2 % or $0.05 \Omega^{(1)}$ insul. > $10^3 M\Omega$ | 0.2 % |
| VRT | -55 °C to +125 °C 5 cycles | 2 % or $0.05 \Omega^{(1)}$ | 0.2 % |
| Mechanical shock | CEI 61373 cat 1 class B Half sinus 50 m/s ² / 30 ms 6 per axis (3 negative and 3 positive) | 0.5 % or $0.05 \Omega^{(1)}$ | 0.25 % |
| Vibration | CEI 61373 Cat 1 class B random 5 Hz to 150 Hz 7.9 m/s ² 5 h per axis | 0.5 % or $0.05 \Omega^{(1)}$ | 0.25 % |
| Terminals strength | 200 Ncm / 200 N | 1 % or $0.05 \Omega^{(1)}$ | 0.1 % |
| Endurance | 2000 cycles P _n 30 min / 30 min | 5 % | 0.2 % |

Note

⁽¹⁾ The higher of either value

ENERGY ABSORPTION
R < 390 Ω

Repetitive operation: 8 J/t = 50 μ s

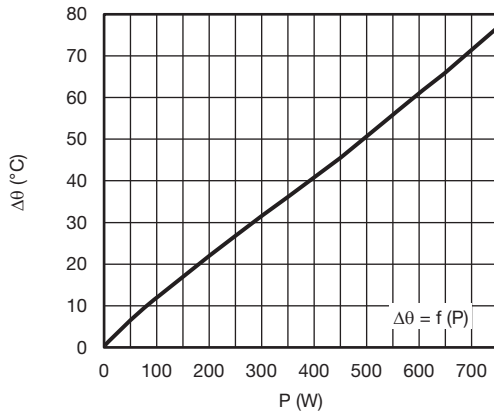
Accidental operation: 20 J/t = 50 μ s / 120 impulsions max.

R > 390 Ω

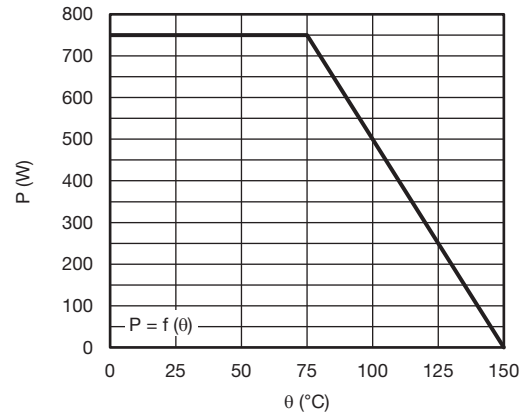
Repetitive operation: 4 J/t = 50 μ s

Other t values: consult us

DISSIPATION

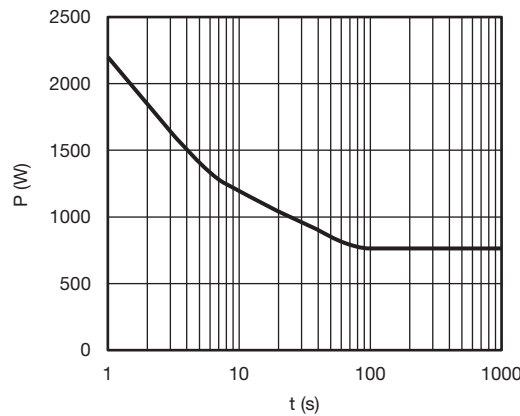


Temperature Rise as a Function of the Power Applied
Overall Thermal Resistance 0.10 °C/W (See Assembly)



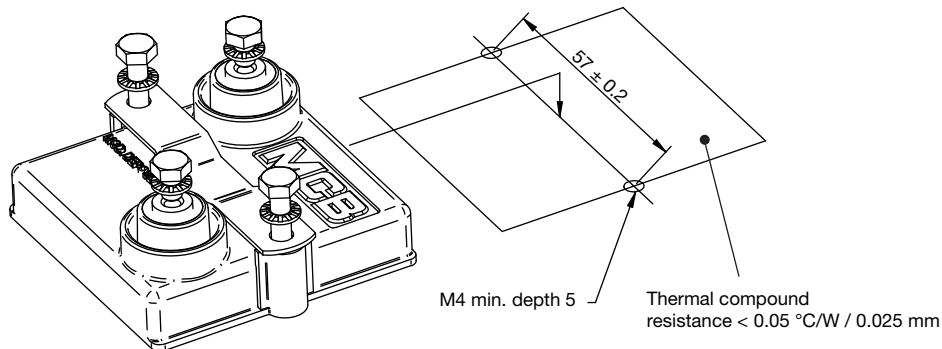
Permanent Applicable Power as a Function
of Heatsink Temperature

OVERLOAD



Intermittent Overload (Exceptional Operation)
Heatsink Temperature 70 °C

ASSEMBLY



Screws and bolts supplied.

Maximum tightening torque:

200 Ncm, mechanical mounting

200 Ncm, electrical connections



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.

TERMINAL OPTIONS

- Electrical terminals M5
- Other terminal size
- Output cable

| ORDERING INFORMATION | | | |
|-----------------------------|---------------|---|--------------------------------|
| RCEC | 750 HV | 10 Ω | 10 % |
| MODEL | TYPE | RESISTANCE VALUE (SEE STANDARD ELECTRICAL SPECIFICATIONS) | TOLERANCE (± 5 % or ± 10 %) |



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