# 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 $P_{75\,°C}$ W | TOLERANCE ± % | TEMPERATURE COEFFICIENT ± ppm/°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 °C to +150 °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 | ≤ 500 pC at 7000 $V_{eff}$<br>≤ 10 pC at 5000 $V_{eff}$<br>Other cases: consult us | |
| Inductance | ≤ 40 nH | |
| Insulation resistance | $10^5$ MΩ at 500 $V_{CC}$ | |
| Weight (max.) | 120 g | |



For technical questions, contact: mcbfixedresistors@vishay.com

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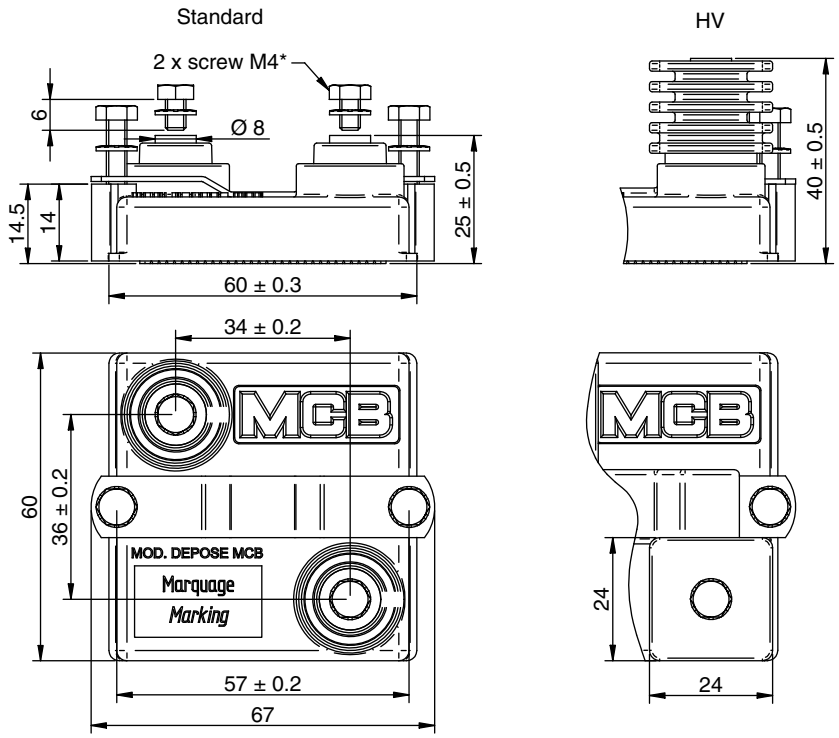
## DIMENSIONS in millimeters




## PERFORMANCES

| TESTS | CONDITIONS | REQUIREMENTS | TYPICAL VALUES |
|---|---|---|---|
| Momentary overload | 1200 W / 10 s θ = 70 °C | 2 % | 0.2 % |
| Humidity (steady state) | 56 days, 40 °C, 95 % HR | 2 % or 0.05 Ω (1)<br>insul. > $10^3$ MΩ | 0.2 % |
| VRT | -55 °C to +125 °C 5 cycles | 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) | 0.5 % or 0.05 Ω (1) | 0.25 % |
| Vibration | CEI 61373Cat 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 | 1 % or 0.05 Ω (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 µs
Accidental operation: 20 J/t = 50 µs / 120 impulsions max.

**R > 390 Ω**

Repetitive operation: 4 J/t = 50 µs
Other t values: consult us



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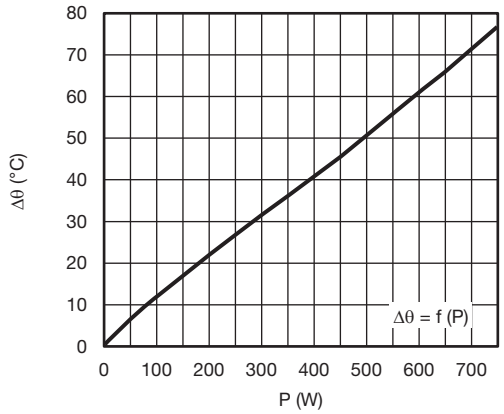
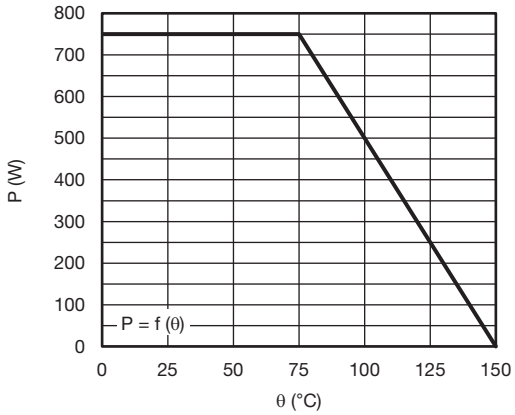
## DISSIPATION

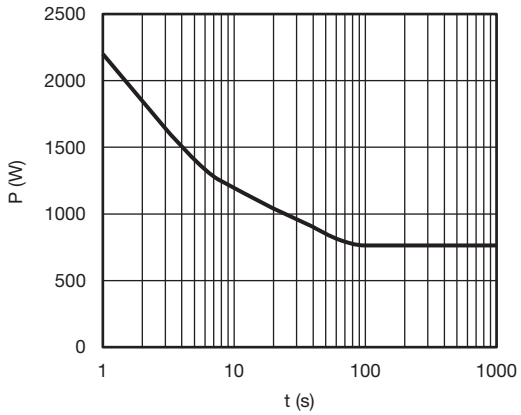



Temperature Rise as a Function of the Power Applied
Overall Thermal Resistance 0.10 °C/W (See Assembly)



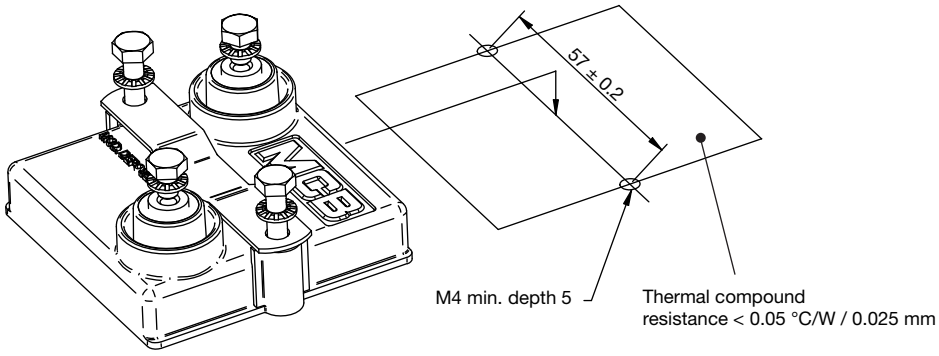

Permanent Applicable Power as a Function
of Heatsink Temperature

## 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



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## 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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