

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


**FEATURES**

- Cold system without external radiation
- High power / volume ratio
- Non-inductive
- Screw-on or fast-on outputs

**STANDARD ELECTRICAL SPECIFICATIONS**

| MODEL    | RESISTANCE RANGE<br>$\Omega$ | MAX. RATED POWER $P_{60\text{ }^\circ\text{C}}$<br>W | TOLERANCE<br>$\pm$ % | TEMPERATURE COEFFICIENT<br>$\pm$ ppm/ $^\circ\text{C}$ | E-SERIES<br>OHMIC<br>VALUES |
|----------|------------------------------|--|----------------------|--|-----------------------------|
| RCEC ISO | 0.33 to 1M                   | 100  | 10, 5 <sup>(1)</sup> | 250 (typical)  | E 12                        |

**Note**

<sup>(1)</sup> On request.

**MECHANICAL SPECIFICATIONS**

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

**TECHNICAL SPECIFICATIONS**

| PARAMETER  | RCEC ISO                                      |
|--|---|
| Nominal power rating at 115 $^\circ\text{C}$         | 25 W  |
| Maximum power rating at 100 $^\circ\text{C}$         | 50 W  |
| Operating temperature range                          | -40 $^\circ\text{C}$ to +125 $^\circ\text{C}$ |
| Maximum operating voltage                            | 1500 V  |
| Dielectric strength $V_{\text{RMS}}$ (50 Hz / 1 min) | 2500 V  |
| Creepage distance                                    | 10 mm   |
| Clearance distance                                   | 5.5 mm  |
| Capacitance: ground                                  | 36 pF   |
| Capacitance: parallel                                | 12 pF   |
| Partial discharge                                    | On request                                    |
| Inductance   | $\leq$ 50 nH                                  |
| Insulation resistance                                | $10^5$ M $\Omega$ at 500 $V_{\text{CC}}$      |
| Weight (max.)  | 20 g  |


**Note**

- Tolerance on ohm value for double circuit:  $\pm 10\%$ .



| PERFORMANCES            |                                   |   |                |
|-------------------------|-----------------------------------|---|----------------|
| TESTS                   | CONDITIONS                        | REQUIREMENTS  | TYPICAL VALUES |
| Momentary overload      | $4 P_n / 10 \text{ s}$            | 2 %   | 0.2 %          |
| Humidity (steady state) | 56 days, 40 °C, 95 % HR           | 2 % or $0.05 \Omega$<br>insul. $> 10^3 \text{ M}\Omega$ | 0.2 %          |
| VRT                     | -40 °C to +125 °C 5 cycles        | 2 % or $0.05 \Omega$ <sup>(1)</sup>                     | 0.2 %          |
| Mechanical shock        | 40 A / 4000                       | 0.5 % or $0.05 \Omega$ <sup>(1)</sup>                   | 0.25 %         |
| Vibration               | 500 / 10                          | 0.5 % or $0.05 \Omega$ <sup>(1)</sup>                   | 0.25 %         |
| Terminals strength      | 130 Ncm / 100 N                   | 1 % or $0.05 \Omega$ <sup>(1)</sup>                     | 0.1 %          |
| Endurance               | 2000 cycles $P_n$ 30 min / 30 min | 5 %   | 0.2 %          |

**Note**

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

**ENERGY ABSORPTION**

With single resistor, repetitive operation:  $0.4 \text{ J/t} = 50 \mu\text{s}$

Other t values: consult us

**DISSIPATION**



Temperature Rise as a Function of the Power Applied  
Overall Thermal Resistance 0.6 °C/W (See Assembly)



Permanent Applicable Power as a Function  
of Heatsink Temperature

**MECHANICAL ASSEMBLY**

Head screw, low or normal height without washers.

- Maximum tightening torque:  
80 Ncm, mechanical mounting  
130 Ncm, electrical connection

**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.

| <b>ORDERING INFORMATION</b> |                                    |   |                                |
|-----------------------------|------------------------------------|---|--------------------------------|
| <b>RCEC ISO</b>             | <b>V</b>                           | <b>10 Ω</b>   | <b>10 %</b>                    |
| MODEL                       | VERSION V OR F<br>(SEE DIMENSIONS) | RESISTANCE VALUE<br>(SEE STANDARD<br>ELECTRICAL SPECIFICATIONS) | TOLERANCE<br>(± 5 % or ± 10 %) |



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