

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



FEATURES

- System without external radiation
- High power / volume ratio
- Non-inductive
- Screw-on outputs
- Possible configuration with 2 or 3 resistors

STANDARD ELECTRICAL SPECIFICATIONS

MODEL	VALUE	RESISTANCE RANGE Ω	MAX. RATED POWER $P_{75\text{ }^\circ\text{C}}$ W	TOLERANCE $\pm \%$	TEMPERATURE COEFFICIENT $\pm \text{ppm}/^\circ\text{C}$	E-SERIES OHMIC VALUES
RCEC 400	Single	1.0 to 1M	400	10, 5 ⁽¹⁾	150 (typical)	E 12
	Double	1.5 to 1M	2 x 180	10, 5 ⁽¹⁾	150 (typical)	E 12

Note

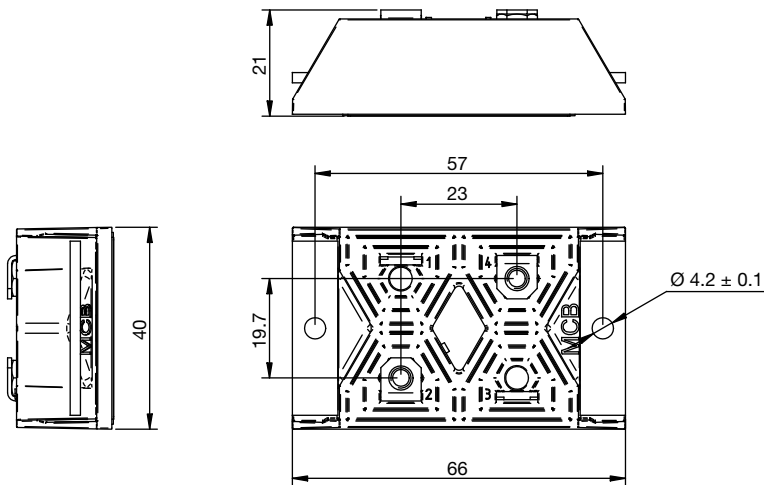
⁽¹⁾ On request.

MECHANICAL SPECIFICATIONS

UL 94 flame classifications	Material in accordance with UL 94 V-0
Resistive element	Thick film
Substrate	Alumina
Encapsulation	Resin filled in housing

TECHNICAL SPECIFICATIONS

PARAMETER	SINGLE VALUE	DOUBLE VALUE
Operating temperature range	-55 °C to +150 °C	
Maximum operating voltage	4000 V	
Dielectric strength V_{RMS} (50 Hz / 1 min)	6000 V	
Creepage distance	> 42 mm	
Clearance distance	> 12 mm	> 10 mm
CTI index	> 600	
Partial discharge	< 20 pC at 5000 V_{eff}	
Inductance	< 40 nH	
Insulation resistance	$10^5 \text{ M}\Omega$ at 500 V_{DC}	
Weight (max.)	75 g	

DIMENSIONS in millimeters

PERFORMANCES

TESTS		CONDITIONS	REQUIREMENTS	TYPICAL VALUES
Momentary overload	Single value	800 W / 10 s	2 %	0.2 %
	Double value	2 x 360 W / 10 s		
Humidity (steady state)		56 days, 40 °C, 95 % HR	2 % or 0.05 Ω ⁽¹⁾	0.2 %
VRT		-55 °C to +125 °C 5 cycles	2 % or 0.05 Ω ⁽¹⁾	0.2 %
Mechanical shock		IEC 60115-4 clause 2-3-6	0.5 % or 0.05 Ω ⁽¹⁾	0.25 %
Vibration		IEC 60115-4 clause 2-3-2	0.5 % or 0.05 Ω ⁽¹⁾	0.25 %
Terminals strength		130 Ncm / 100 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
Single Value

Repetitive operation: 2 J/t = 50 μs

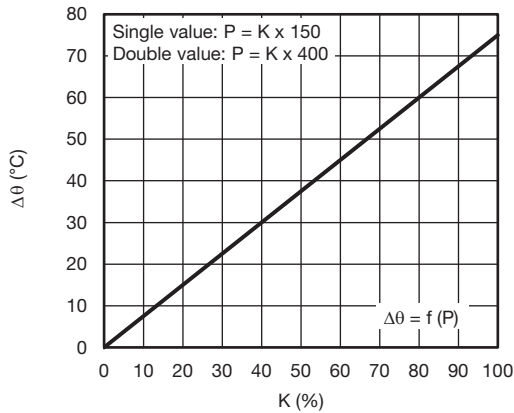
Other t values: consult us

Double Value

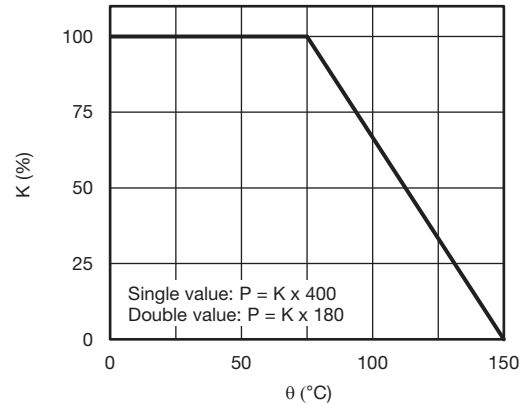
Repetitive operation: 2 J/t = 50 μs

Other t values: consult us

DISSIPATION

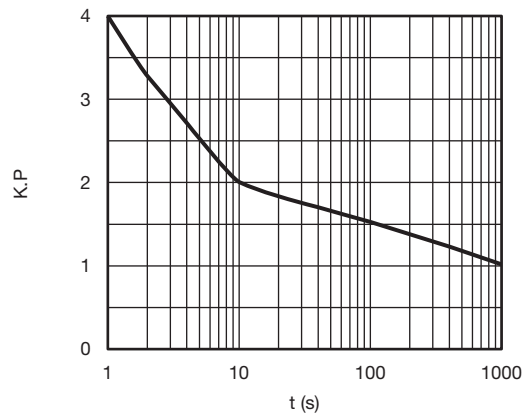


Temperature Rise as a Function of the Power Applied
Overall Thermal Resistance 0.1875 °C/W
(Double Value: 0.2083 °C/W)



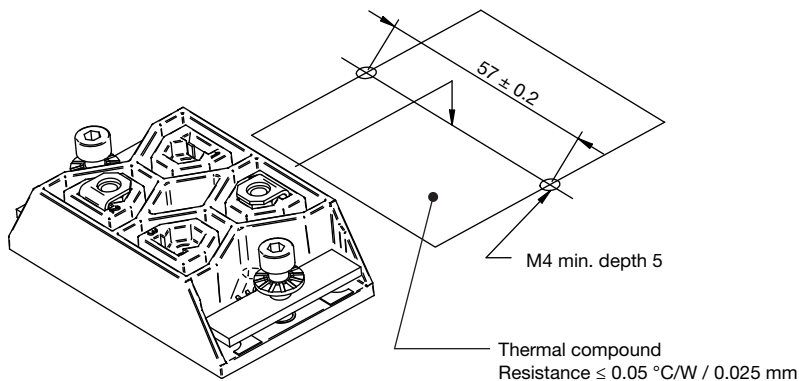
Permanent Applicable Power as a Function
of Heatsink Temperature

OVERLOAD



Intermittent Overload (Exceptional Operation)

ASSEMBLY



Maximum tightening torque:
150 Ncm, mechanical mounting
130 Ncm, electrical mounting



COOLING

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

- Forced air ventilation
- Internal circulation of a cooling liquid
- 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.

ORDERING INFORMATION			
RCEC	400	10 Ω	10 %
MODEL	TYPE	RESISTANCE VALUE (DOUBLE VALUE: 2 x 10 Ω FOR EXAMPLE)	TOLERANCE (± 5 % or ± 10 %)



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