

## 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 $\Omega$	MAX. RATED POWER $P_{25\text{ }^\circ\text{C}}$ W	TOLERANCE $\pm$ %	TEMPERATURE COEFFICIENT $\pm$ ppm/ $^\circ\text{C}$	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 $^\circ\text{C}$	500 W		
Operating temperature range	-55 $^\circ\text{C}$ to +125 $^\circ\text{C}$		
Maximum operating voltage	5000 V		
Dielectric strength $V_{\text{RMS}}$ (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	$\leq$ 40 nH		
Insulation resistance	$10^5$ M $\Omega$ at 500 $V_{\text{CC}}$		
Weight (max.)	120 g		



<b>PERFORMANCE</b>			
<b>TESTS</b>	<b>CONDITIONS</b>	<b>REQUIREMENTS</b>	<b>TYPICAL VALUES</b>
Momentary overload	1000 W / 10 s	2 %	0.2 %
Humidity (steady state)	56 days, 40 °C, 95 % HR	2 % or 0.05 Ω <sup>(1)</sup>	0.2 %
Mechanical shock	CEI 61373 cat 1 class B half sinus 50 m/s <sup>2</sup> / 30 ms 6 per axis (3 negative and 3 positive)	insul. > 10 <sup>3</sup> MΩ	0.25 %
Vibration	CEI 61373 cat 1 class B random 5 Hz to 150 Hz 7.9 m/s <sup>2</sup> 5 h per axis	0.5 % or 0.05 Ω <sup>(1)</sup>	0.25 %
Terminals strength	200 Ncm / 200 N	0.5 % or 0.05 Ω <sup>(1)</sup>	0.1 %
Endurance	2000 cycles P <sub>n</sub> 30 min / 30 min	1 % or 0.05 Ω <sup>(1)</sup>	0.2 %

**Note**

<sup>(1)</sup> 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 Applicable 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

<b>ORDERING INFORMATION</b>			
<b>RCMC</b>	<b>500HV</b>	<b>10 Ω</b>	<b>10 %</b>
MODEL	TYPE (SEE TECHNICAL SPECIFICATIONS)	RESISTANCE VALUE (SEE STANDARD ELECTRICAL SPECIFICATIONS)	TOLERANCE



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### Офис по работе с юридическими лицами:

105318, г.Москва, ул.Щербаковская д.3, офис 1107, 1118, ДЦ «Щербаковский»

Телефон: +7 495 668-12-70 (многоканальный)

Факс: +7 495 668-12-70 (доб.304)

E-mail: [info@moschip.ru](mailto:info@moschip.ru)

Skype отдела продаж:

moschip.ru

moschip.ru\_4

moschip.ru\_6

moschip.ru\_9