Revision: 08-Oct-14

For technical questions, contact: mcbfixedresistors@vishay.com

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STANDARD ELECTRICAL SPECIFICATIONS				
ESISTANCE RANGE Ω	MAX. RATED POWER P _{25 °C} W	TOLERANCE ± %	TEMPERATURE COEFFICIENT ± ppm/°C	E-SERIES OHMIC VALUES
0.27 to 18	750	10	150	E 12
	Ω	Ω W	Ω W ±%	Ω W ± % ± ppm/°C

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 °C	500 W		
Operating temperature range	-55 °C to +125 °C		
Maximum operating voltage	5000 V		
Dielectric strength V _{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	≤ 40 nH		
Insulation resistance	$10^5 \text{ M}\Omega$ at 500 V _{CC}		
Weight (max.)	120 g		



FEATURES

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

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

Vishay MCB

RCMC

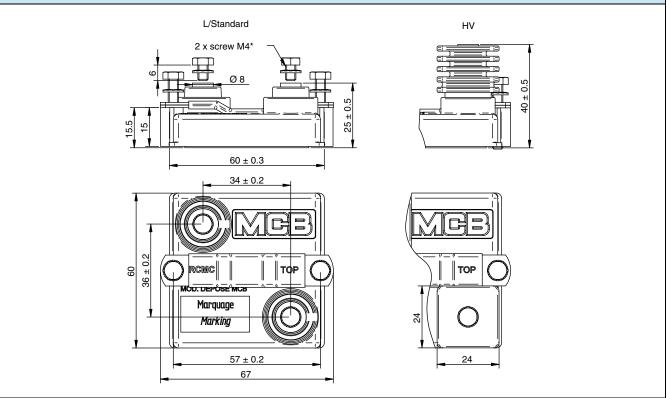


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RCMC

DIMENSIONS in millimeters



PERFORMANCE			
TESTS	CONDITIONS	REQUIREMENTS	TYPICAL VALUES
Momentary overload	1000 W / 10 s	2 %	0.2 %
Humidity (steady state)	56 days, 40 °C, 95 % HR	2 % or 0.05 Ω $^{(1)}$	0.2 %
Mechanical shock	CEI 61373 cat 1 class B half sinus 50 m/s² / 30 ms 6 per axis (3 negative and 3 positive)	insul. > $10^3 M\Omega$	0.25 %
Vibration	CEI 61373 cat 1 class B random 5 Hz to 150 Hz 7.9 m/s² 5 h per axis	0.5 % or 0.05 $\Omega^{(1)}$	0.25 %
Terminals strength	200 Ncm / 200 N	0.5 % or 0.05 Ω $^{(1)}$	0.1 %
Endurance	2000 cycles P _n 30 min / 30 min	1 % or 0.05 Ω ⁽¹⁾	0.2 %

Note

⁽¹⁾ The higher of either value

ENERGY ABSORPTION

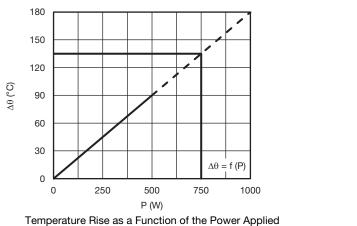
Repetitive operation: $25 \text{ J/t} = 50 \ \mu\text{s}$ Accidental operation: $100 \text{ J/t} = 50 \ \mu\text{s} / 100$ impulsions max. Other t values: contact us

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Vishay MCB

RCMC

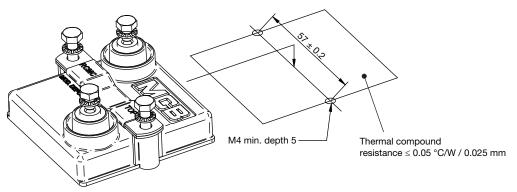
DISSIPATION



Temperature Rise as a Function of the Power Applied Overall Thermal Resistance 0.18 °C/W (See Assembly)

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ASSEMBLY



800 700

600

500

400 300

200

100

n

0

25

50

75

θ (°C)

Permanent Applicate Power as a Function

of Heatsink Temperature

100

125

150

175

P

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 \leq 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

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



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