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)

LINKS TO ADDITIONAL RESOURCES

3D Models

STANDARD ELECTRICAL SPECIFICATIONS					
MODEL	RESISTANCE RANGE Ω	MAX. RATED POWER $P_{25\ °C}$ W	TOLERANCE ± %	TEMPERATURE COEFFICIENT ± ppm/°C	E-SERIES OHMIC VALUES
RCMC	0.27 to 18	750	10	150	E 12

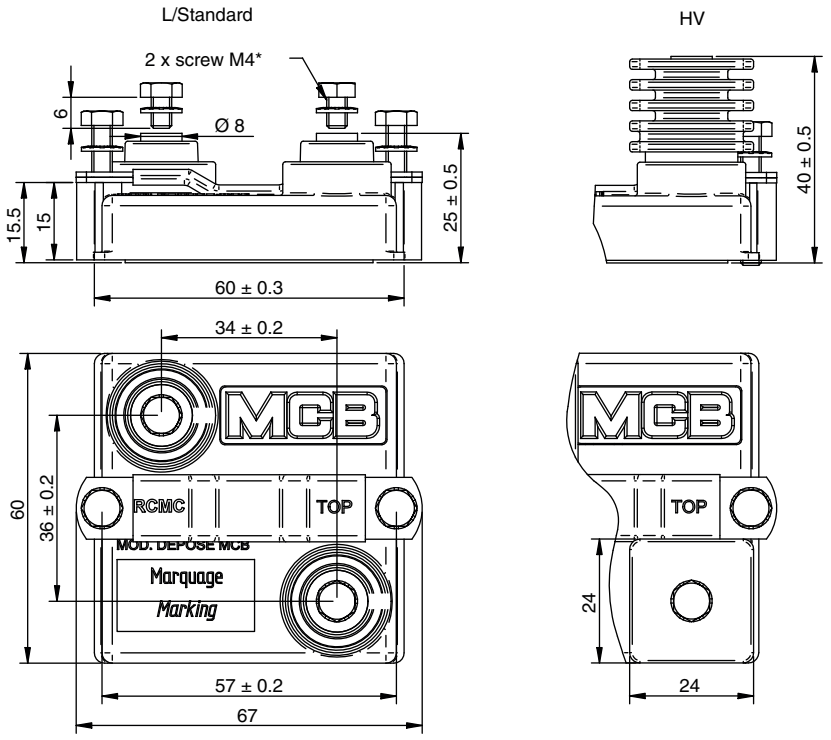
MECHANICAL SPECIFICATIONS	
UL 94 flame classifications	Material comply with the standard UL 94 V-0
Resistive element	NiCr alloy
Substrate	Alumina
Encapsulation	Resin filled case

TECHNICAL SPECIFICATIONS			
PARAMETER	500L	500	500HV
Nominal power rating at 70 °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 MΩ at 500 V_{CC}		
Weight (max.)	120 g		

For technical questions, contact: mcbfixedresistors@vishay.com

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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 MΩ	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 Ω (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 J/t = 50 µs

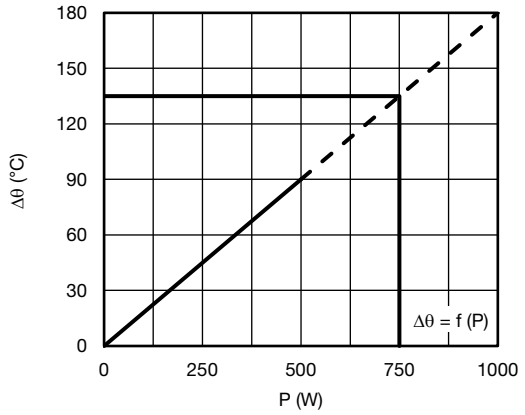
Accidental operation: 100 J/t = 50 µs / 100 impulsions max.

Other t values: contact us

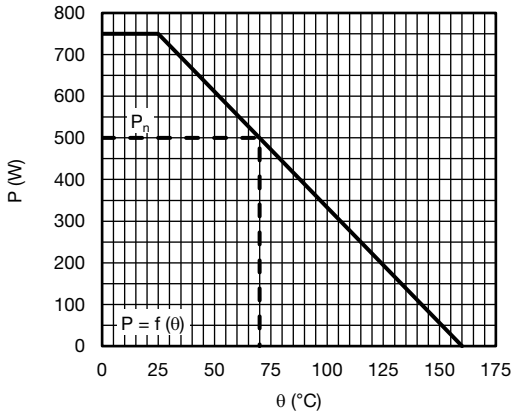
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DISSIPATION

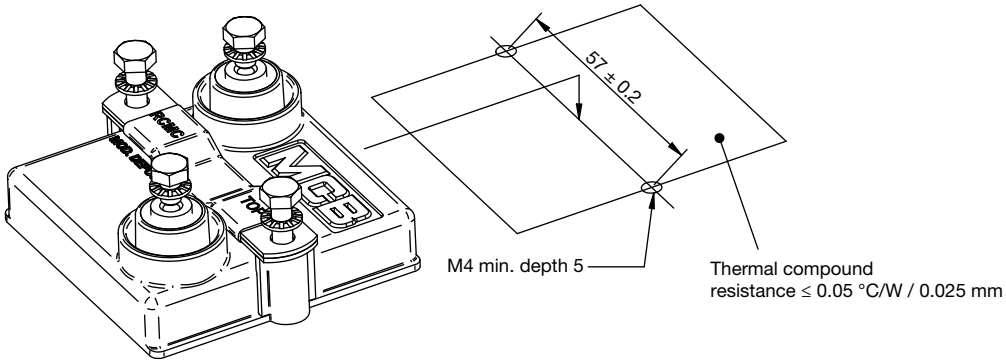


Temperature Rise as a Function of the Power Applied
Overall Thermal Resistance 0.18 °C/W (See Assembly)



Permanent Applicate 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 < 0.025 °C/W / 0.05 mm)

The user must select the thermal resistance of the heatsink according to the power applied

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OPTIONS

- Electrical terminals: M5
- Other terminal size
- Output cable

ORDERING INFORMATION

RCMC	500	HV	10 Ω	10 %	XXX	BO15
MODEL	STYLE	TERMINALS	RESISTANCE VALUE	TOLERANCE	CUSTOM DESIGN	PACKAGING
				± 10 %	Optional On request: special value, shape, M5 terminals, etc.	

GLOBAL PART NUMBER INFORMATION

R	C	M	C	5	0	0	H	V	1	5	R	0	K	B			
1							2		3				4	5	6		

1	2	3	4	5	6
GLOBAL MODEL	LEADS (if applicable)	OHMIC VALUE	TOLERANCE	PACKAGING	INDUSTRIALIZATION NUMBER
RCMC 500	**Standard (no digit)** **HV** **L**	**The first three digits are significant figures and the last specifies the number of zeros to follow, R designates decimal point.** **10R0 = 10 Ω**	**K = 10 %**	**B = box** (24 pcs for standard, and L 15 pcs for HV)	**3 specific digits (if applicable)**

EXAMPLES

MODEL	DESCRIPTION	PART NUMBER
RCMC 500	RCMC 500 HV 15U 10 % BO15	RCMC500HV15R0KB
RCMC 500	RCMC 500 18U 10 % 983 BO15	RCMC50018R0KB983

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