

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

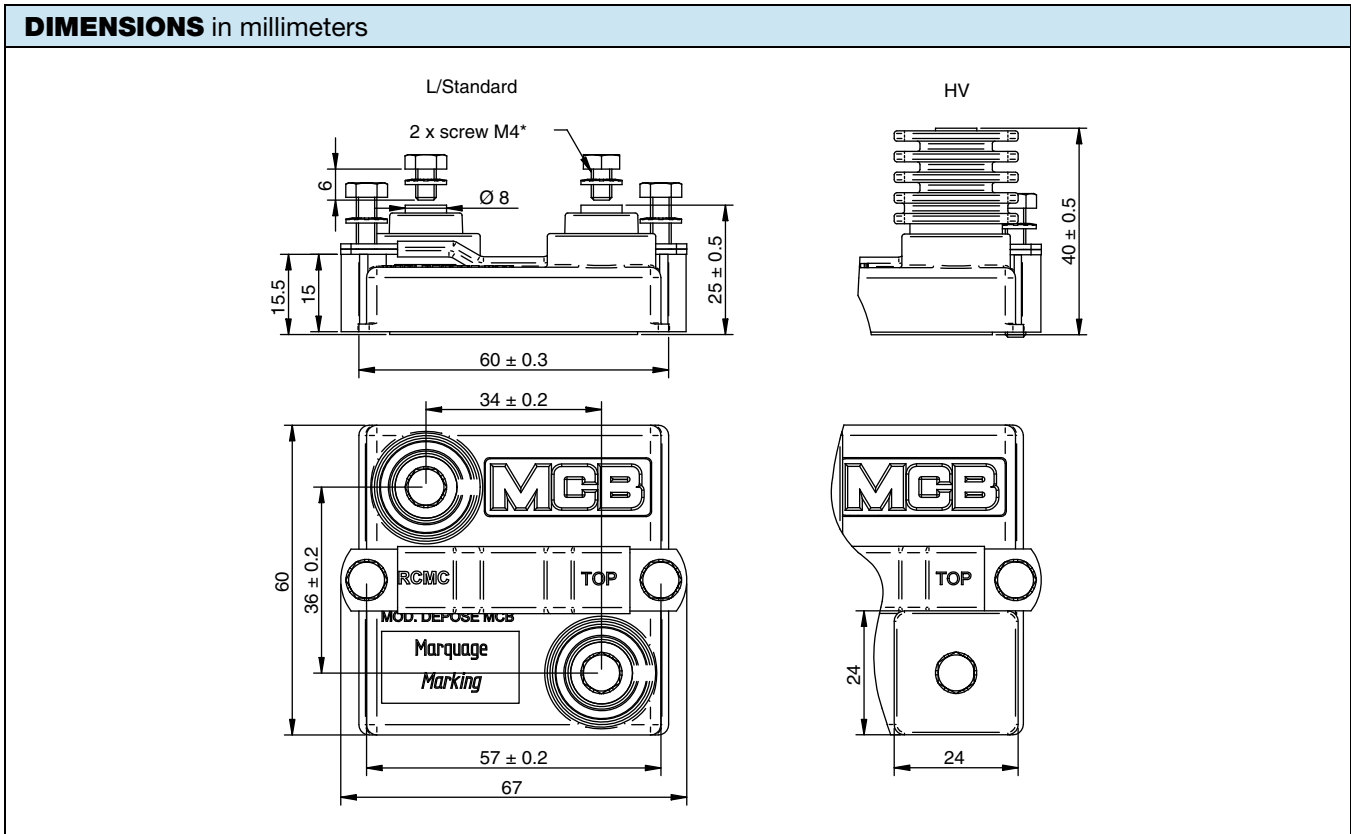
MODEL	RESISTANCE RANGE Ω	MAX. RATED POWER $P_{25\text{ }^\circ\text{C}}$ W	TOLERANCE \pm %	TEMPERATURE COEFFICIENT \pm ppm/ $^\circ\text{C}$	E-SERIES OHMIC VALUES
RCMC	0.27 to 18	750	10	150	E 12

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_{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 Ω at 500 V_{CC}		
Weight (max.)	120 g		



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/s ² / 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/s ² 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

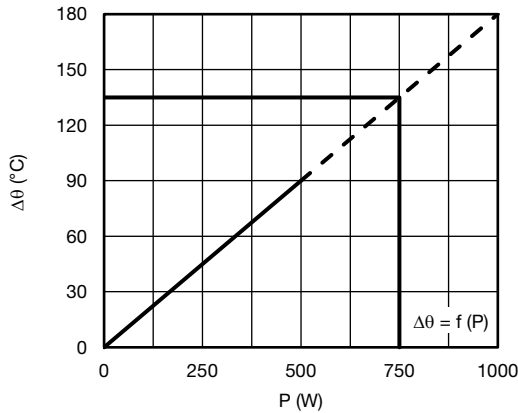
ENERGY ABSORPTION

Repetitive operation: 25 J/t = 50 μs

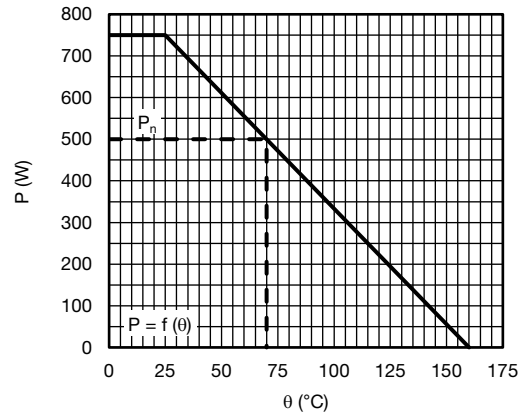
Accidental operation: 100 J/t = 50 μs / 100 impulsions max.

Other t values: contact us

DISSIPATION

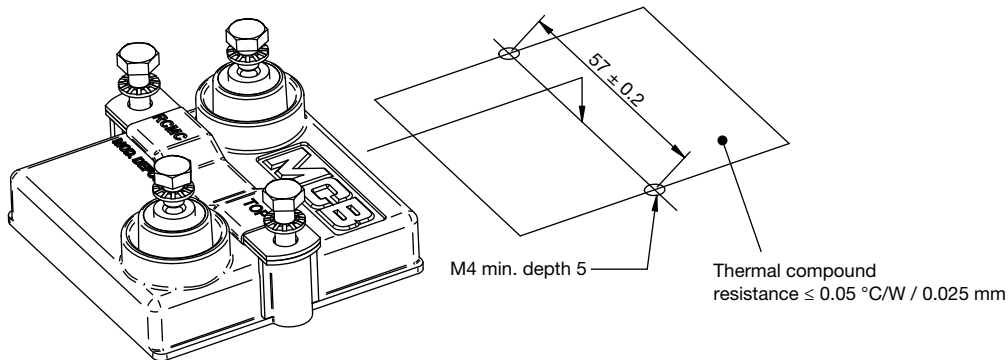


Temperature Rise as a Function of the Power Applied
Overall Thermal Resistance 0.18 °C/W (See Assembly)



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

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

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	



Disclaimer

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product.

Vishay makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Vishay disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Vishay's knowledge of typical requirements that are often placed on Vishay products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and / or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer's technical experts. Product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein.

Except as expressly indicated in writing, Vishay products are not designed for use in medical, life-saving, or life-sustaining applications or for any other application in which the failure of the Vishay product could result in personal injury or death. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay. Product names and markings noted herein may be trademarks of their respective owners.