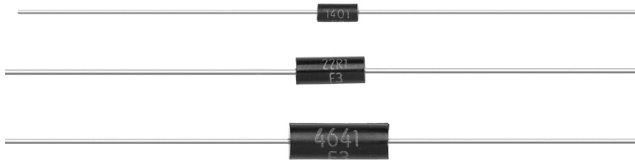


Molded Metal Film Very High Stability (< 0.25 % after 1000 h) and Precision (up to 0.1 %) Resistors

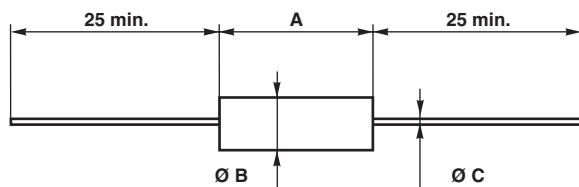


FEATURES

- 0.1 W to 2 W at 70 °C
- EN140-201
- CECC 40 100
- Very high stability: Drift < 0.25 % after 1000 h
- Reduced total excursion: High initial precision (to $\pm 0.1\%$) with low temperature coefficient (down to ± 15 ppm/°C)
- The models in this series are the first ones qualified by the CNES for spatial applications (certificate N°4 dated October 22, 1972)
- Wide range ohmic values 1 Ω to 5 M Ω
- Accurate dimensions, high insulation and great mechanical strength
- High climatic performances: - 65 °C/+ 155 °C/56 days
- Matching tolerance: 0.1 %
- Tracking TCR: 5 ppm/°C
- Termination: Pure matte tin
- Compliant to RoHS directive 2002/95/EC


RoHS
COMPLIANT

DIMENSIONS in millimeters



SERIES	A max.	Ø B max.	Ø C	WEIGHT g
RCMA02	6.7	2.5	0.6	0.26
RCMA05	10.4	4.2	0.6	0.46
RCMA08	16.5	6.4	0.8	1.3
RCMA1	19.3	6.4	0.8	1.5
RCMA2	29	10.2	0.8	4.4
RCMA4	54	10.2	0.8	13

TECHNICAL SPECIFICATIONS

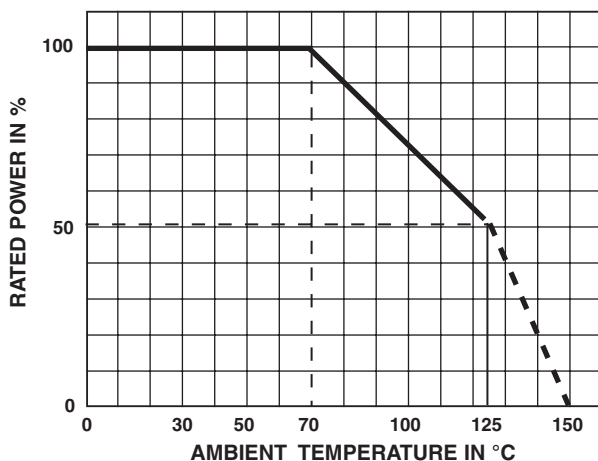
VISHAY SFERNICE SERIES		RCMA02	RCMA05	RCMA08	RCMA1	RCMA2	RCMA4	
NF C 83-230		RS58P ^{K4}	RS63P ^{K4}	RS68P	-	-	-	
CECC 40 100-803		BE	CE	DE	-	-	-	
Power Rating at 70 °C		0.125 W	0.250 W	0.500 W	0.75 W	1 W	2 W	
Resistance Value Range in Relation to - Tolerance - Temperature Coefficient	K3	$\pm 0.2\%$	10 Ω to 332 k Ω	10 Ω to 332 k Ω	10 Ω to 1 M Ω	10 Ω to 1 M Ω	10 Ω to 2.5 M Ω	
		$\pm 0.5\% \pm 1\%$	1 Ω to 1 M Ω	1 Ω to 1 M Ω	1 Ω to 1.5 M Ω	1 Ω to 2 M Ω	1 Ω to 2.5 M Ω	1 Ω to 5 M Ω
	K4	$\pm 0.1\% \pm 0.2\%$	10 Ω to 332 k Ω	10 Ω to 332 k Ω	10 Ω to 1 M Ω	10 Ω to 1 M Ω	10 Ω to 1 M Ω	10 Ω to 2.5 M Ω
		$\pm 0.5\% \pm 1\%$	1 Ω to 1 M Ω	1 Ω to 1 M Ω	1 Ω to 1.5 M Ω	1 Ω to 2 M Ω	1 Ω to 2.5 M Ω	1 Ω to 5 M Ω
	K5	$\pm 0.1\% \pm 0.2\%$	10 Ω to 332 k Ω	10 Ω to 332 k Ω	10 Ω to 750 k Ω	10 Ω to 750 k Ω	10 Ω to 1 M Ω	10 Ω to 2 M Ω
	$\pm 0.5\% \pm 1\%$	10 Ω to 1 M Ω	10 Ω to 1 M Ω	10 Ω to 1.5 M Ω	10 Ω to 2 M Ω	10 Ω to 2.5 M Ω	10 Ω to 2.5 M Ω	
Maximum Voltage		300 V	350 V	400 V	500 V	600 V	800 V	
Critical Resistance		720 k Ω	490 k Ω	320 k Ω	333 k Ω	360 k Ω	320 k Ω	
Temperature Coefficient	Rated in the range - 55 °C to + 155 °C	K3 $\leq \pm 50$ ppm/°C			K4 $\leq \pm 25$ ppm/°C			
	Typical in the range 0 °C to + 155 °C	K5 $\leq \pm 15$ ppm/°C						
Insulation Resistance		$> 10^7$ M Ω						
Voltage Coefficient		0.0001 %/V						
Environmental Specifications		- 65 °C/+ 155 °C/56 days						

Note

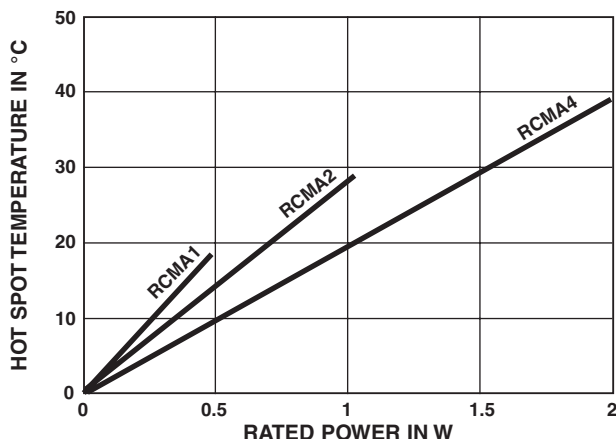
- Undergoes European Quality Insurance System (CECC)

PERFORMANCE				
TESTS	CECC 40 100	EN 140-201	TYPICAL VALUES AND DRIFTS	
	CONDITIONS STD 202			REQUIREMENTS
Load Life at Maximum Category Temperature	1000 h at 125 °C 50 % of P_n		$\leq \pm 1 \%$ Insulation resistance > 1 G Ω	$\pm 0.25 \%$ or 0.05 Ω
Short Time Overload	2.5 $U_m/5$ s limited to 2 U_n		$\leq \pm (0.25 \% + 0.05 \Omega)$	$\pm 0.1 \%$ or 0.05 Ω
Damp Heat Humidity (Steady State)	56 days with low load		$\leq \pm (1 \% + 0.05 \Omega)$ Insulation resistance > 1 G Ω	$\pm 0.2 \%$ or 0.05 Ω
Rapid Temperature Change	- 55 °C + 155 °C		$\leq \pm (0.25 \% + 0.05 \Omega)$	$\pm 0.1 \%$ or 0.05 Ω
Climatic Sequence	- 65 °C + 155 °C		$\leq \pm (1 \% + 0.05 \Omega)$ Insulation resistance > 1 G Ω	$\pm 0.25 \%$ or 0.05 Ω Insulation resistance 10 ⁶ M Ω
Terminal Strength	Pull - twist - 2 bends		$\leq \pm (0.25 \% + 0.05 \Omega)$	$\pm 0.05 \%$ or 0.05 Ω
Vibration	10 Hz to 500 Hz		$\leq \pm (0.25 \% + 0.05 \Omega)$	$\pm 0.05 \%$ or 0.05 Ω
Soldering (Thermal Shock)	+ 260 °C 10 s		$\leq \pm (0.25 \% + 0.05 \Omega)$	$\pm 0.05 \%$ or 0.05 Ω
Load Life	Cycle 90'/30' 1000 h at P_n at 70 °C		$\leq \pm (1 \% + 0.05 \Omega)$ Insulation resistance > 1 G Ω	$\pm 0.1 \%$ or 0.05 Ω
Shelf Life	1 year ambient temperature		-	$\pm 0.1 \%$ or 0.05 Ω

POWER RATING



TEMPERATURE RISE



PRACTICAL OPERATING TOLERANCES

Table 2 and 3 show the basic characteristics and maximum values under different stresses. In fact, the values and drifts are maintained to within narrower limits.

Temperature coefficient between - 10 °C and + 70 °C	K5 $\leq \pm 10$ ppm/°C K4 $\leq \pm 15$ ppm/°C	
LONG LIFE 90'/30' cycles ambient temperature 70 °C	1000 h at P_r	$\pm 0.05 \%$
	10 000 h at P_r	$\pm 0.15 \%$

So, in operation under the specified conditions (P_r at 70 °C) the total drift (load life + TCR) of a RCMA K4 does not exceed $\pm 0.25 \%$.

SPECIAL APPLICATIONS

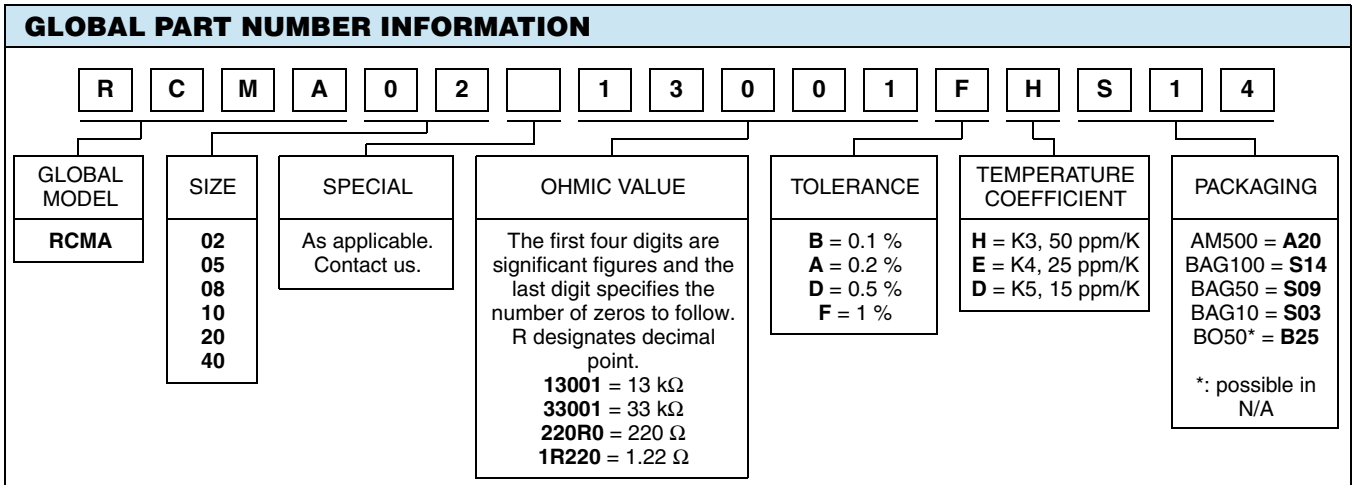
Temperature coefficient tracking to 5 ppm/°C.
Tolerance matching to 0.05 %.
Selection of positive or negative TCR in temperature range of - 20 °C to + 125 °C.
For these applications and other requirements consult Vishay Sfernice.

MARKING

Printed: Vishay Sfernice trademark, series, style (due to lack of space RCMA02 is printed MA02), ohmic value (in Ω), tolerance (in %), temperature coefficient, manufacturing date.



Molded Metal Film Very High Stability (< 0.25 % after 1000 h) Vishay Sfernice and Precision (up to 0.1 %) Resistors





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