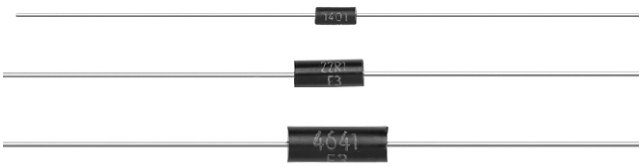
Molded Metal Film Very High Stability (< 0.25 % after 1000 h) and Precision (up to 0.1 %) Resistors



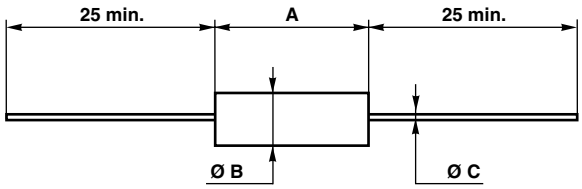
FEATURES

- 0.1 W to 2 W at 70 °C
- EN 140-201
- CECC 40 100
- Very high stability: drift < 0.25 % after 1000 hours
- Reduced total excursion: high initial precision (to ± 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 MΩ
- 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

Pb-free

RoHS COMPLIANT

DIMENSIONS in millimeters



DIMENSIONS \ SERIES	RCMA 02	RCMA 05	RCMA 08	RCMA 1	RCMA 2	RCMA 4
A max.	6.7	10.4	16.5	19.3	29	54
Ø B max.	2.5	4.2	6.4	6.4	10.2	10.2
Ø C	0.6	0.6	0.8	0.8	0.8	0.8
Unit weight in g	0.26	0.46	1.3	1.5	4.4	13

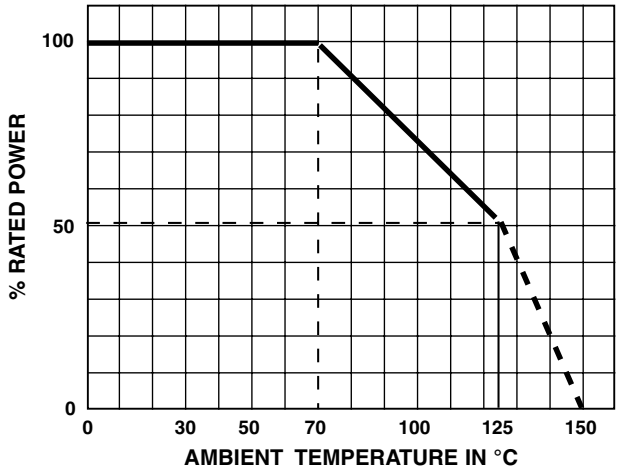
TECHNICAL SPECIFICATIONS

VISHAY SFERNICE SERIES			RCMA 02	RCMA 05	RCMA 08	RCMA 1	RCMA 2	RCMA 4
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**	**± 0.2 %**	10 Ω 332 kΩ	10 Ω 332 kΩ	10 Ω 1 MΩ	10 Ω 1 MΩ	10 Ω 1 MΩ	10 Ω 2.5 MΩ
		± 0.5 % ± 1 %	1 Ω 1 MΩ	1 Ω 1 MΩ	1 Ω 1.5 MΩ	1 Ω 2 MΩ	1 Ω 2.5 MΩ	1 Ω 5 MΩ
	K4	**± 0.1 % ± 0.2 %**	10 Ω 332 kΩ	10 Ω 332 kΩ	10 Ω 1 MΩ	10 Ω 1 MΩ	10 Ω 1 MΩ	10 Ω 2.5 MΩ
		± 0.5 % ± 1 %	1 Ω 1 MΩ	1 Ω 1 MΩ	1 Ω 1.5 MΩ	1 Ω 2 MΩ	1 Ω 2.5 MΩ	1Ω 5MΩ
	K5	**± 0.1 % ± 0.2 %**	10 Ω 332 kΩ	10 Ω 332 kΩ	10 Ω 750 kΩ	10 Ω 750 kΩ	10 Ω 1 MΩ	10 Ω 2 MΩ
		± 0.5 % ± 1 %	10 Ω 1 MΩ	10 Ω 1 MΩ	10 Ω 1.5 MΩ	10 Ω 2 MΩ	10 Ω 2.5 MΩ	10 Ω 2.5 MΩ
Maximum Voltage			300 V	350 V	400 V	500 V	600 V	800 V
Critical Resistance			720 kΩ	490 kΩ	320 kΩ	333 kΩ	360 kΩ	320 kΩ
Temperature Coefficient	**rated in the range - 55 °C/+ 155 °C**		K3 ≤ ± 50 ppm/°C			K4 ≤ ± 25 ppm/°C		
	typical in the range 0 °C/+ 155 °C		K5 ≤ ± 15 ppm/°C					
Insulation Resistance			> 10^7 MΩ					
Voltage Coefficient			0.0001 % Volt					
Environmental Specifications			- 65 °C/+ 155 °C/56 days					

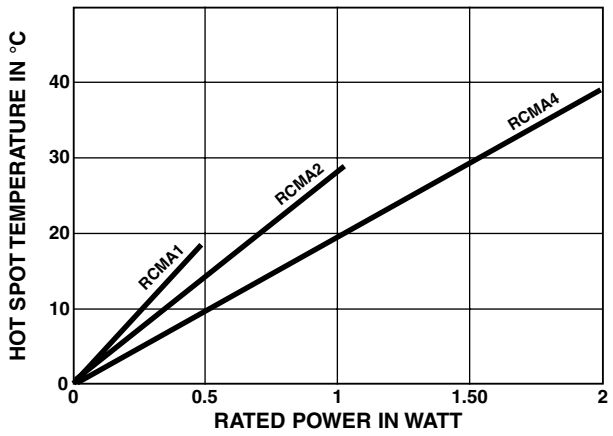
Undergoes European Quality Insurance System (CECC)

PERFORMANCE			
	CECC 40 100 EN 140-201		TYPICAL VALUES AND DRIFTS
TESTS	CONDITIONS STD 202	REQUIREMENTS	
Load Life at max. Category Temperature	1000 h at 125 °C 50 % of Pn	≤ ± 1 % Insulation resist. > 1 GΩ	± 0.25 % or 0.05 Ω
Short Time Overload	2.5 Um/5 s limited to 2 Un	≤ ± (0.25 % + 0.05 Ω)	± 0.1 % or 0.05 Ω
Damp Heat Humidity (Steady State)	56 days with low load	≤ ± (1 % + 0.05 Ω) Insulation resist. > 1 GΩ	± 0.2 % or 0.05 Ω
Rapid Temperature Change	- 55 °C + 155 °C	≤ ± (0.25 % + 0.05 Ω)	± 0.1 % or 0.05 Ω
Climatic Sequence	- 65 °C + 155 °C	≤ ± (1 % + 0.05 Ω) Insulation resist. > 1 GΩ	± 0.25 % or 0.05 Ω Insulation resist. 10^6 MΩ
Terminal Strength	Pull - Twist - 2 bends	≤ ± (0.25 % + 0.05 Ω)	± 0.05 % or 0.05 Ω
Vibration	10 to 500 Hz	≤ ± (0.25 % + 0.05 Ω)	± 0.05 % or 0.05 Ω
Soldering (Thermal Shock)	+ 260 °C 10 s	≤ ± (0.25 % + 0.05 Ω)	± 0.05 % or 0.05 Ω
Load Life	cycle 90'/30' 1000 h at Pn at 70 °C	≤ ± (1 % + 0.05 Ω) Insulation resist. > 1 GΩ	± 0.1 % or 0.05 Ω
Shelf Life	1 year ambient temperature	-	± 0.1 % or 0.05 Ω

POWER RATING CHART



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 ≤ ± 10 ppm/°C K4 ≤ ± 15 ppm/°C	
LONG LIFE 90'/30' cycles ambient temperature 70 °C	1000 hours at Pr	± 0.05 %
	10 000 hours at Pr	± 0.15 %

So, in operation under the specified conditions (Pr at 70 °C) the total drift (load life + TCR) of a RCMA K4 does not exceed ± 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: SFERNICE trademark, series, style (due to lack of space RCMA 02 is printed MA 02), ohmic value (in Ω), tolerance (in %), temperature coefficient, manufacturing date.

ORDERING INFORMATION

RCMA	02		100K	1 %	K6	AM500	e3
MODEL	SIZE	SPECIAL DESIGN Method N° Optional	OHMIC VALUE	TOLERANCE	TEMPERATURE COEFFICIENT	PACKAGING Ammo-pack: Tape in a box or tape and reel	LEAD (Pb)-FREE

SAP PART NUMBERING GUIDELINES

RCMA	02	10002	F	Y	A20
MODEL	SIZE	OHMIC VALUE	TOLERANCE	TEMPERATURE COEFFICIENT	PACKAGING

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