

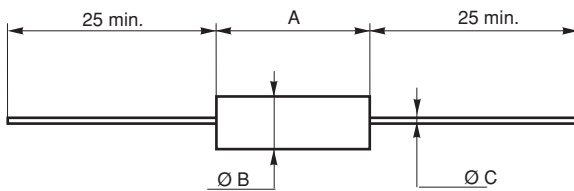
Molded Metal Film Very High Stability and Precision Resistors



FEATURES

- 0.1W to 2W at 70°C
- NF C 83-230
- CECC 40 100
- Very high stability: drift <0.1% after 1000 hours
- Reduced total excursion: high initial precision (to $\pm 0.1\%$) with low temperature coefficient (down to $\pm 15\text{ppm}/^\circ\text{C}$)
- High reliability
- These models of this series have been the first ones qualified by the CNES for spatial applications (certificate N°4 dated October 22, 1972)
- Wide range ohmic values 1 Ω to 5M Ω
- Accurate dimensions, high insulation and great mechanical strength
- High climatic performances: $-65^\circ\text{C}/+155^\circ\text{C}/56$ days
- Matching tolerance: 0.1%
- Tracking T.C.: 5ppm/ $^\circ\text{C}$

DIMENSIONS in millimeters



SERIES 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	3.66	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

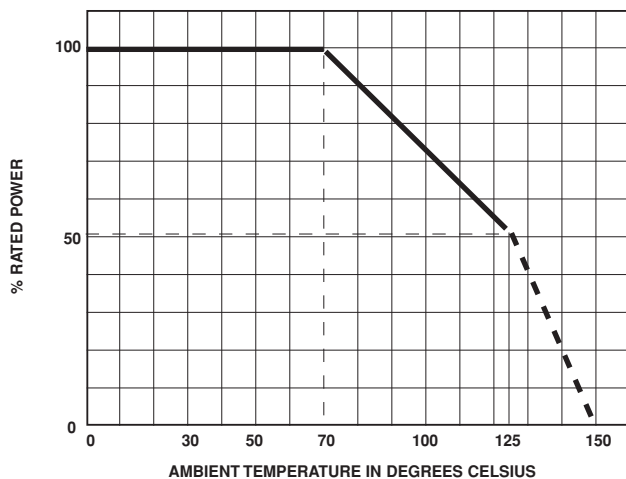
VISHAY SFERNICE SERIES	RCMA 02		RCMA 05		RCMA 08		RCMA 1		RCMA 2		RCMA 4		
NF C 83-230	RS58P K4		RS63P K4		RS68P		-		-		-		
CECC 40 100-803	BE		CE		DE		-		-		-		
Power Rating at 70°C	0.125W		0.250W		0.500W		0.75W		1W		2W		
Resistance Value Range in Relation to - Tolerance - Temperature Coefficient	K3	$\pm 0.2\%$	10 Ω	332k Ω	10 Ω	332k Ω	10 Ω	1M Ω	10 Ω	1M Ω	10 Ω	2.5M Ω	
		$\pm 0.5\%$ $\pm 1\%$	1 Ω	1M Ω	1 Ω	1M Ω	1 Ω	1.5M Ω	1 Ω	2M Ω	1 Ω	5M Ω	
	K4	$\pm 0.1\%$ $\pm 0.2\%$	10 Ω	332k Ω	10 Ω	332k Ω	10 Ω	1M Ω	10 Ω	1M Ω	10 Ω	2.5M Ω	
		$\pm 0.5\%$ $\pm 1\%$	1 Ω	1M Ω	1 Ω	1M Ω	1 Ω	1.5M Ω	1 Ω	2M Ω	1 Ω	5M Ω	
	K5	$\pm 0.1\%$ $\pm 0.2\%$	10 Ω	332k Ω	10 Ω	332k Ω	10 Ω	750k Ω	10 Ω	750k Ω	10 Ω	1M Ω	
	$\pm 0.5\%$ $\pm 1\%$	10 Ω	1M Ω	10 Ω	1M Ω	10 Ω	1.5M Ω	10 Ω	2M Ω	10 Ω	2.5M Ω	10 Ω	2.5M Ω
Maximum Voltage	300V		350V		400V		500V		600V		800V		
Critical Resistance	720k Ω		490k Ω		320k Ω		333k Ω		360k Ω		320k Ω		
Temperature Coefficient	rated in the range $-55^\circ\text{C}/+155^\circ\text{C}$ typical in the range $0^\circ\text{C}/+155^\circ\text{C}$												
	K3 $\leq \pm 50\text{ppm}/^\circ\text{C}$						K4 $\leq \pm 25\text{ppm}/^\circ\text{C}$						
	K5 $\leq \pm 15\text{ppm}/^\circ\text{C}$												
Insulation Resistance	$> 10^7\text{M}\Omega$												
Voltage Coefficient	0.0001% Volt												
Environmental Specifications	$-65^\circ\text{C}/+155^\circ\text{C}/56$ days												

Undergoes European Quality Insurance System (CECC)

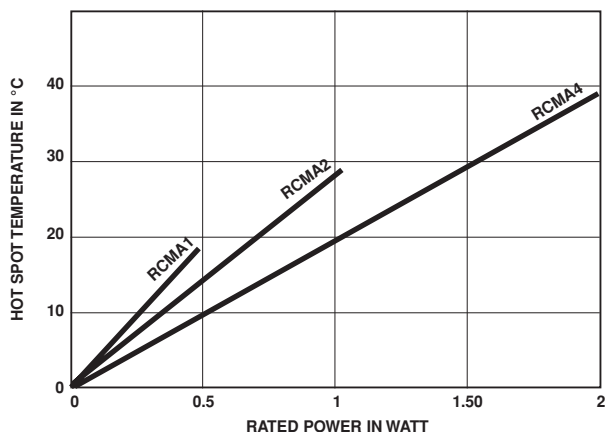


PERFORMANCE			
NF C 83-230 - CECC 40 100			TYPICAL VALUES AND DRIFTS
TESTS	CONDITIONS STD 202	REQUIREMENTS	
Load Life at max. Category Temperature	1000 h at 125°C 50% of Pn	≤ ± 1% Insulation resist. >1GΩ	± 0.25% or 0.05Ω
Short Time Overload	2.5 Um/5 s limited to 2 Un	≤ ± (0.25% + 0.05Ω)	± 0.1% or 0.05Ω
Damp Heat Humidity (Steady State)	56 days with low load	≤ ± (1% + 0.05Ω) Insulation resist. >1GΩ	± 0.2% or 0.05Ω
Rapid Temperature Change	- 55°C + 155°C	≤ ± (0.25% + 0.05Ω)	± 0.1% or 0.05Ω
Climatic Sequence	- 65°C + 155°C	≤ ± (1% + 0.05Ω) Insulation resist. >1GΩ	± 0.25% or 0.05Ω Insulation resist. 106MΩ
Terminal Strength	Pull - Twist - 2 bends	≤ ± (0.25% + 0.05Ω)	± 0.05% or 0.05Ω
Vibration	10 to 500Hz	≤ ± (0.25% + 0.05Ω)	± 0.05% or 0.05Ω
Soldering (Thermal Shock)	+ 260°C 10 s	≤ ± (0.25% + 0.05Ω)	± 0.05% or 0.05Ω
Load Life	cycle 90'/30' 1000 h at Pn at 70°C	≤ ± (1% + 0.05Ω) Insulation resist. > 1GΩ	± 0.1% or 0.05Ω
Shelf Life	1 year ambient temperature	-	± 0.1% or 0.05Ω

POWER RATING CHART



TEMPERATURE RISE



PRACTICAL OPERATING TOLERANCES

Tables 2 and 3 show the basic characteristics and max. 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 ≤ ± 10ppm/°C K4 ≤ ± 15ppm/°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 + T.C.) of a RCMA K4 does not exceed ± 0.25%.

SPECIAL APPLICATIONS

Temperature coefficient tracking to 5ppm/°C.

Tolerance matching to 0.05%.

Selection of positive or negative T.C. 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		100kΩ	± 0.1%	K5	AMMO-PACK
SERIES	STYLE	SPECIAL DESIGN Method N° Optional	OHMIC VALUE	TOLERANCE	TEMPERATURE COEFFICIENT	PACKAGING Ammo-pack: Tape in a box or tape and reel



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