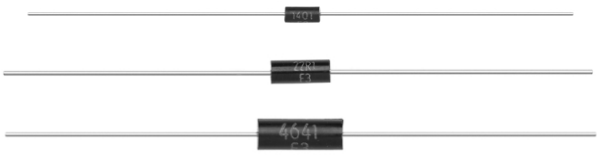
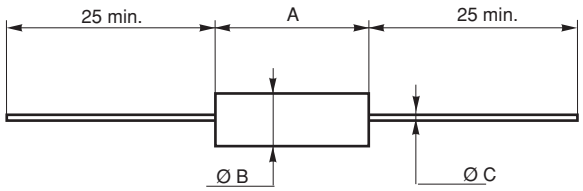
Molded Metal Film Very High Stability and Precision Resistors



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 ± 0.1%) with low temperature coefficient (down to ± 15ppm/°C)
- High reliability
- These models of this series have been the first ones qual ified by the CNES for spatial applications (certificate N°4 dated October 22, 1972)
- Wide range ohmic values 1Ω to 5MΩ
- Accurate dimensions, high insulation and great mechanical strength
- High climatic performances: – 65°C/+ 155°C/56 days
- Matching tolerance: 0.1%
- Tracking T.C.: 5ppm/°C

DIMENSIONS in millimeters



SERIES / DIMENSIONS	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

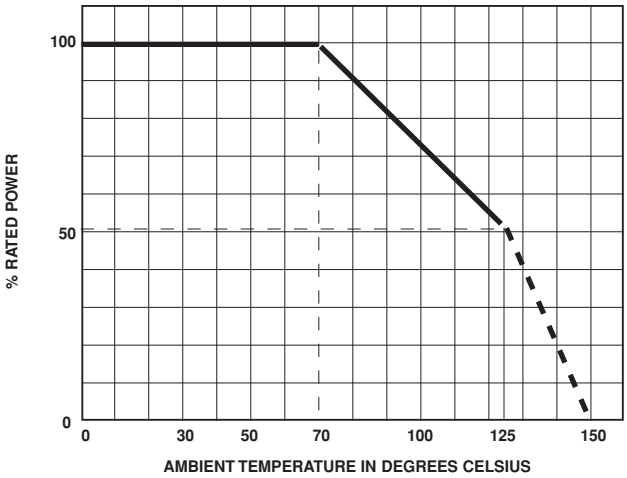
VISHAY SFERNICE SERIES		RCMA 02	RCMA 05	RCMA 08	RCMA 1	RCMA 2	RCMA 4
NF C 83-230		RS58P K4	RS63P K4	RS68P	–	–	–
CECC 40 100-803		BE	CE	DE	–	–	–
Power Rating at 70°C		0.125W	0.250W	0.500W	0.75W	1W	2W
Resistance Value Range in Relation to – Tolerance – Temperature Coefficient	K3 ± 0.2%	10Ω 332kΩ	10Ω 332kΩ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

Undergoes European Quality Insurance System (CECC)

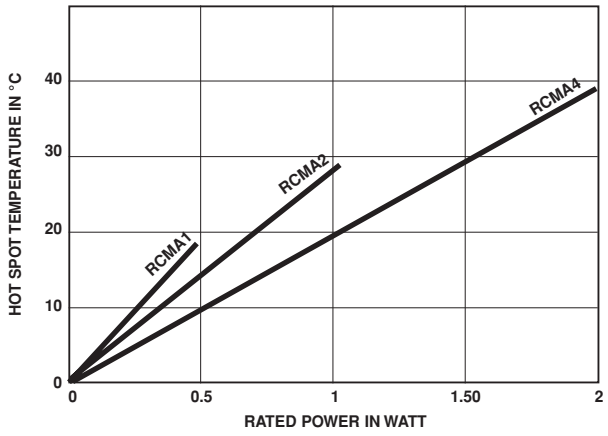
PERFORMANCE

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

Notice

Specifications of the products displayed herein are subject to change without notice. Vishay Intertechnology, Inc., or anyone on its behalf, assumes no responsibility or liability for any errors or inaccuracies.

Information contained herein is intended to provide a product description only. No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document. Except as provided in Vishay's terms and conditions of sale for such products, Vishay assumes no liability whatsoever, and disclaims any express or implied warranty, relating to sale and/or use of Vishay products including liability or warranties relating to fitness for a particular purpose, merchantability, or infringement of any patent, copyright, or other intellectual property right.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications. Customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify Vishay for any damages resulting from such improper use or sale.