Molded Precision Wirewound Resistors Axial Leads



FEATURES

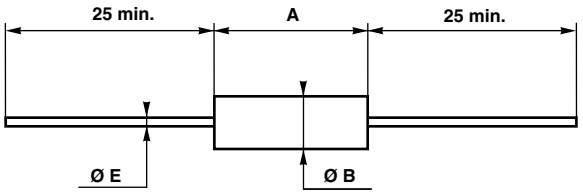
- 0.75 W to 3 W at 25 °C
- NF C 83-210
- CECC 40201-005
- Low temperature coefficient ≤ ± 50 ppm/°C
- Low ohmic values 15 mΩ available
- Excellent behavior against humidity
- Electrical insulation
- Mechanical strength
- Accurate sizes
- Termination = Sn/Ag/Cu or pure matte tin according to the ohmic value
- Material categorization: For definitions of compliance please see www.vishay.com/doc?99912

Pb-free

RoHS COMPLIANT

High stability and low temperature coefficient are the main features of the precision wirewound resistors type RMB RMBS models just as maintenance parts. Their performances can be compared with those of the best film resistors but they have in addition a greater power rating. RMBS styles meet the more severe requirements of NF C 83-210 (all RMBS styles are approved) and characteristic U of MIL-R-26 E (approximate size of RW 70 and 79 resistors) specifications. The two models RMB and RMBS have a similar construction. RMBS are submitted, in addition to a process which further increases the stability. On request, non-inductive resistors are available under the reference RMB NI.

DIMENSIONS in millimeters



SERIES AND STYLE	A max.	Ø B max.	E ± 0.1	WEIGHT g
RMB0.75 RMBS0.5	7	2.5	0.6	0.3
RMB1.5 RMBS1	10.2	4	0.6	0.7
RMB3 RMBS2	16.2	6.4	0.8	1.5

STANDARD ELECTRICAL SPECIFICATIONS

MODEL	SIZE	RESISTANCE RANGE Ω	RATED POWER $P_{25\,°C}$ W	LIMITING ELEMENT VOLTAGE V	TOLERANCE ± %
RMB0.75	075	0.1 to 2K	0.75	n/a	0.1, 0.5, 1, 2, 5
RMB1.5	105	0.1 to 6.81K	1.5	120	0.1, 0.5, 1, 2, 5
RMB3	300	0.051 to 13K	3	200	0.1, 0.5, 1, 2, 5
RMBS0.5 e	05	0.1 to 2K	0.5	n/a	0.1, 0.5, 1, 2, 5
RMBS1 e	10	0.1 to 6.81K	1	120	0.1, 0.5, 1, 2, 5
RMBS2 e	20	0.015 to 13K	2	200	0.1, 0.5, 1, 2, 5

Note

- e Undergoes European Quality Insurance System (CECC)

For technical questions, contact: sferfixedresistors@vishay.com

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TECHNICAL SPECIFICATIONS

VISHAY SFERNICE SERIES AND STYLE		RMB0.75	RMB1.5	RMB3	RMBS0.5	RMBS1	RMBS2
NF C 83-210		-	-	-	RP1	RP2	RP3
CECC 40201-005		-	-	-	A	B	C
Power Rating	at 25 °C	0.75 W	1.5 W	3 W	0.5 W	1 W	2 W
	at 70 °C	0.6 W	1.2 W	2.4 W	0.4 W	0.8 W	1.6 W
Ohmic Range in Relation to Tolerance	± 5 % E24	0.1 Ω to 2 kΩ	0.1 Ω to 6.81 kΩ	0.051 Ω to 13 kΩ	0.1 Ω to 2 kΩ	0.1 Ω to 6.81 kΩ	0.015 Ω to 13 kΩ
	± 2 % E48	0.1 Ω to 2 kΩ	0.1 Ω to 6.81 kΩ	0.08 Ω to 12.3 kΩ	0.1 Ω to 2 kΩ	0.1 Ω to 6.81 kΩ	0.078 Ω to 12.4 kΩ
	± 1 % E96	0.1 Ω to 2 kΩ	0.1 Ω to 6.81 kΩ	0.1 Ω to 12.4 kΩ	0.1 Ω to 2 kΩ	0.1 Ω to 6.81 kΩ	0.1 Ω to 12.4 kΩ
	± 0.5 % E96	0.4 Ω to 2 kΩ	0.4 Ω to 6.81 kΩ	0.3 Ω to 12.4 kΩ	0.4 Ω to 2 kΩ	0.4 Ω to 6.81 kΩ	0.3 Ω to 12.4 kΩ
	± 0.1 %	Please consult Vishay Sfernice					
Qualified Ohmic Range NF C 83-210		-	-	-	1 Ω to 174 Ω	1 Ω to 590 Ω	1 Ω to 1.3 kΩ
Limiting Element Voltage		Not applicable	120 V	200 V	Not applicable	120 V	200 V
Critical Resistance		Out of nominal ohmic range					

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PERFORMANCE

TESTS	CONDITIONS	REQUIREMENTS		TYPICAL VALUES AND DRIFTS	
		MIL-R-26 E	NF C 83-210	RMB	RMBS
Dielectric W/s Voltage	500 V_{RMS}	± (0.1 % + 0.05 Ω)	-	± (0.05 % + 0.01 Ω)	± (0.05 % + 0.01 Ω)
Short Time Overload	5 P_n at 25 °C/5 s	± (0.2 % + 0.05 Ω)	± 0.25 % + 0.05 Ω	± (0.1 % + 0.01 Ω)	± (0.05 % + 0.01 Ω)
Climatic Sequence	NF C 83-210 -55 °C / +200 °C 5 cycles	-	± 0.25 % + 0.05 Ω Insulation R > 100 MΩ	± (0.1 % + 0.01 Ω) > 10^4 MΩ	± (0.05 % + 0.01 Ω) > 10^4 MΩ
Humidity (Steady State)	NF C 83-210 56 days 95 % RH	-	± 0.25 % + 0.05 Ω Insulation R > 100 MΩ	± (0.1 % + 0.01 Ω) > 10^4 MΩ	± (0.05 % + 0.01 Ω) > 10^4 MΩ
Thermal Shock	Load at 100 % P followed by cold temp. exposure at -55 °C	± (0.2 % + 0.05 Ω)	-	± (0.2 % + 0.01 Ω)	(0.1 % + 0.01 Ω)
Vibration	MIL-STD-202 Method 204 - Test D: 20 *g* 10/2000 Hz	± (0.2 % + 0.05 Ω)	± 0.25 % + 0.05 Ω	± (0.01 % + 0.01 Ω)	± (0.01 % + 0.01 Ω)
Load Life	MIL-STD-202 Method 108 Pr 2000 h	± (0.5 % + 0.05 Ω)	± 0.25 % + 0.05 Ω 1000 h at 25 °C	± (1 % + 0.01 Ω)	± (0.15 % + 0.01 Ω)
Moisture Resistance	MIL-STD-202 Method 106	± (0.2 % + 0.05 Ω) Insulation resistance > 100 MΩ	-	± (0.1 % + 0.01 Ω) > 10^3 MΩ	± (0.05 % + 0.01 Ω) > 10^3 MΩ
High Temperature	1000 h at +200 °C	± (0.5 % + 0.05 Ω)	± 0.5 % + 0.05 Ω Insulation R > 1 GΩ	± 1 %	± 0.3 %
Shock	MIL-STD-202 100 *g* Method 205 Test C	± (0.1 % + 0.05 Ω)	± 0.25 % + 0.05 Ω	± 0.05 %	± 0.05 %

TEMPERATURE COEFFICIENT IN THE RANGE -55 °C TO +200 °C

OHMIC RANGE	REQUIREMENTS NF C 83-210 MIL-R-26E	TYPICAL VALUES SFERNICE
	MIL	
R_n < 1	≤ ± 100 ppm/°C	± 50 ppm/°C
1 ≤ R_n < 10	≤ ± 50 ppm/°C	
R_n ≥ 10	≤ ± 25 ppm/°C	+0 °C to -20 ppm/°C

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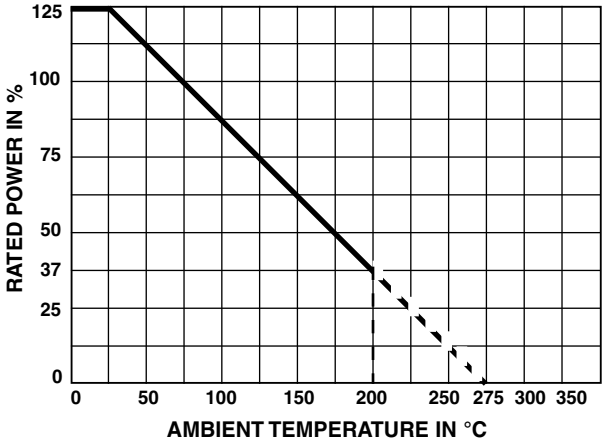
STABILITY AND POWER RATING

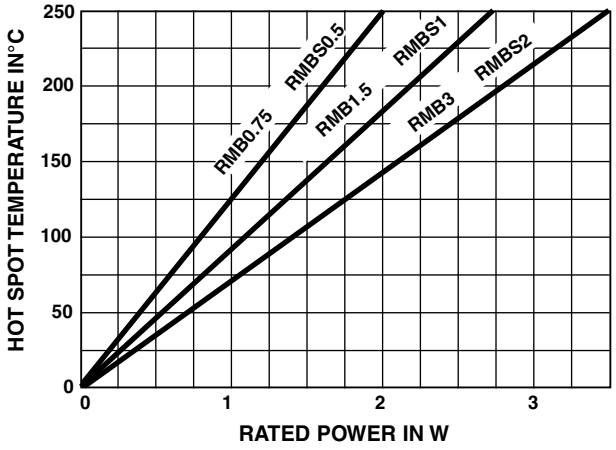
Stability changes slightly according to power rating and ambient temperature. This fact is specially important for users needing a life drift lower than the initial resistance tolerance. Typical drifts, after 2000 h life test made under the 90'/30' conditions and at a 25 °C ambient temperature are:

MODEL STYLE	RMBS 0.5	RMBS 1	RMBS 2	*R* %/*R* %	MODEL STYLE	RMB 0.75	RMB 1.5	RMB 3	*R* %/*R* %
P_n	0.5 W	1 W	2 W	0.15 %	$P_{max.}$	1 W	2 W	3.5 W	1 %
1/2 P_n	0.25 W	0.5 W	1 W	0.075 %	P_n	0.75 W	1.5 W	3 W	0.5 %
					1/3 P_n	0.4 W	0.75 W	1.5 W	0.3 %

POWER RATING



TEMPERATURE RISE



MARKING

Vishay Sfernice trademark, model, style, CECC style (if applicable) nominal resistance (in Ω), tolerance (in %), manufacturing date.

ORDERING INFORMATION

RMB	**105**	**R5000**	**J**	**S00**
RMBS	**05**	**22R00**	**J**	**S14**
MODEL	STYLE	OHMIC VALUE	TOLERANCE	PACKAGING

GLOBAL PART NUMBER INFORMATION

R	M	B	1	0	5	3	0	0	R	0	J	S	0	0

GLOBAL MODEL	SIZE	OPTION	OHMIC VALUE	TOLERANCE	PACKAGING	SPECIAL
RMB **RMBS**	**RMB:** 075 105 300 **RMBS:** 05 10 20	**N** = Non inductive winding	The first four digits are significant figures and the last digit specifies the number of zeros to follow. R designates decimal point. **300R0** = 300 Ω **680R0** = 680 Ω **20301** = 20.3 kΩ **88R88** = 88.88 Ω ...	**F** = 1 % **J** = 5 %	**Standard Packaging:** **RMB:** Size 075 and 105: S14 = Bag, 100 pieces Size 300: S09 = Bag, 50 pieces **RMBS:** Size 05 and 10: S14 = Bag, 100 pieces Size 20: S09 = Bag, 50 pieces **Other packagings available**	As applicable **Ex** = MEX

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