

20694

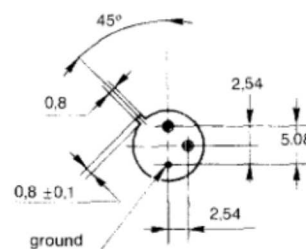
NF C 93217 (RK21)



The RBK series is used in all professional and military applications whenever small size and reliable performance under the most severe environmental conditions, especially external stress, are required.

- VERY HIGH PRECISION
- VERY HIGH STABILITY
- COMPLETE HERMETIC SEALING
- VERY LOW TEMPERATURE COEFFICIENT (0 to ± 5 ppm/ $^{\circ}$ C)
- SMALL DIMENSIONS (T05 housing)
- WIDE RANGE OF OHMIC VALUES

Technical drawing of a mechanical part with dimensions: 12.7 min, 0.7, $\varnothing 8.3 \pm 0.2$, $\varnothing 0.45$, 6.5 ± 0.5 , $\varnothing 9.2 \pm 0.2$.



Dimensions in mm

SPECIFICATIONS

MECHANICAL

MECHANICAL PROTECTION... metal housing T05
RESISTIVE ELEMENT... wire
TERMINAL... kovar
UNIT WEIGHT... 1,6 g max.

ENVIRONMENTAL

TEMPERATURE LIMITS... -55°C +125°C
CLIMATIC CATEGORY... 55 / 100 / 56
SEALING... 10^{-7} atm cm³/s

ELECTRICAL

RESISTANCE VALUE RANGE... 100 Ω - 2 M Ω
RESISTANCE TOLERANCE... $\pm 0,01\%$ - $\pm 1\%$
POWER RATING... 0,25 W at 70°C
TEMPERATURE COEFFICIENT... K6: ± 10 ppm/°C
K8: ± 5 ppm/°C
K9: ± 2 ppm/°C
DIELECTRIC VOLTAGE... 500 V RMS.
INSULATION RESISTANCE... $> 10^3$ M Ω
LIMITING ELEMENT VOLTAGE... 200 V
CRITICAL RESISTANCE... 160 k Ω

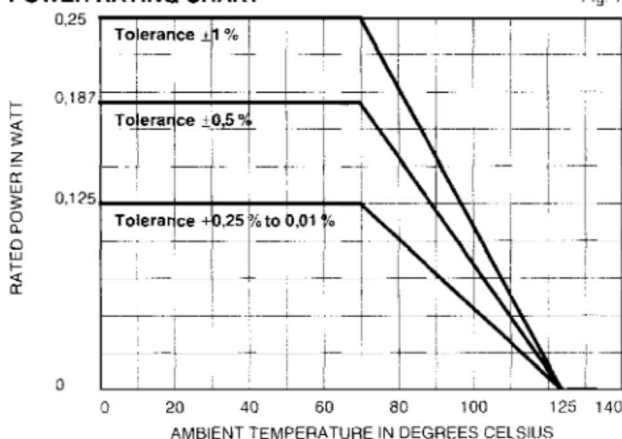
PERFORMANCES

Table 1

TESTS	CONDITIONS	REQUIREMENTS NF C 93217	TYPICAL DRIFTS
OVERLOAD	2 Pr U max. $\leq 2 U_n/10$ mn	$\pm 0,005\%$	$\pm 0,003\%$
TEMPERATURE CYCLING	5 cycles -55°C $+125^{\circ}\text{C}$	$\pm 0,01\%$	$\pm 0,001\%$
TERMINALS STRENGTH	CEI 68.2.21 Test Ua (pulling) Ub (bending) Uc (twisting)	$\pm 0,005\%$	$\pm 0,001\%$
RESISTANCE TO SOLDERING HEAT	$260^{\circ}\text{C}/10$ s CEI 68.2.20A Test TB (Method 1A)	$\pm 0,01\%$	$\pm 0,002\%$
VIBRATIONS	10 Hz to 55 Hz 1,5 mm peak to peak CEI 68.2.6	$\pm 0,01\%$	$\pm 0,001\%$
CLIMATIC SEQUENCE	-55°C $+125^{\circ}\text{C}$ 6 cycles 20 mbar CEI 115	$\pm 0,01\%$ or $0,01\ \Omega$ Insulation resist. $\geq 10^7\ \text{M}\Omega$	$\pm 0,001\%$ Insulation resist. $\geq 10^3\ \text{M}\Omega$
HUMIDITY (STEADY STATE)	56 days 95% RH 40°C CEI 68.2.3	$\pm 0,05\%$ or $0,01\ \Omega$ Insulation resist. $\geq 10^2\ \text{M}\Omega$	$\pm 0,001\%$ Insulation resist. $\geq 10^3\ \text{M}\Omega$
LOAD LIFE	1 cycle $90'/30'$ 2000 h at 70°C	$\pm 0,05\%$	$\pm 0,01\%$
HIGH TEMPERATURE EXPOSURE	2000 h at 125°C	$\pm 0,05\%$	$\pm 0,01\%$
HERMETIC SEAL TEST	CEI 68.2.17 Test QK Helium 5 bars 1 h	$10^{-7}\ \text{atm cm}^3/\text{s}$	$10^{-7}\ \text{atm cm}^3/\text{s}$

POWER RATING CHART

Fig. 1



TEMPERATURE COEFFICIENT

The variation curve of the resistance in relation to temperature is not linear. In the range of temperature 0° $+75^{\circ}\text{C}$ the temperature coefficient is extremely low (practically not measurable). In certain conditions of use, the temperature coefficient can be guaranteed $\leq \pm 2\ \text{ppm}/^{\circ}\text{C}$.

ORDERING PROCEDURE

SERIES	STYLE	OHMIC VALUE	TOLERANCE	TEMPERATURE COEFFICIENT	SPECIAL REQUIREMENTS
RBK	02	150 k Ω	$\pm 0,01\%$	K8	XXX Special matching in tolerance and temperature coefficient

CAPACITANCE

The resistors of the RBK 02 series are progressively capacitive from 10 k Ω . The stray capacitance is less than or equal to 2 pF in the resistance range $R_n < 100\ \text{k}\Omega$. It is less than 5 pF in the resistance range: $100\ \text{k}\Omega < R_n < 2\ \text{M}\Omega$.

RESISTANCE OHMIC RANGE IN RELATION TO TOLERANCE

Table 2

Ohmic range	from 1 k Ω to 2 M Ω	from 500 Ω to 2 M Ω	from 100 Ω to 2 M Ω
Tolerance	$\pm 0,01\%$ to $\pm 1\%$	$+0,02\%$ to $\pm 1\%$	$+0,1\%$ to $\pm 1\%$

RECOMMENDATIONS FOR USE

The comparative measurements and in particular those carried out during initial and final measurements of a complex test must be effected at the same temperature ($\pm 1^{\circ}\text{C}$) and under the same voltage ($\pm 5\%$) between points at a 5 mm distance from the body of the component.

MARKING

SFERNICE trademark, series, RBK 02, nominal resistance (in Ω , k Ω , M Ω), tolerance (in %), temperature coefficient (K6 - K8 - K9), manufacturing date.

Precision
resistors