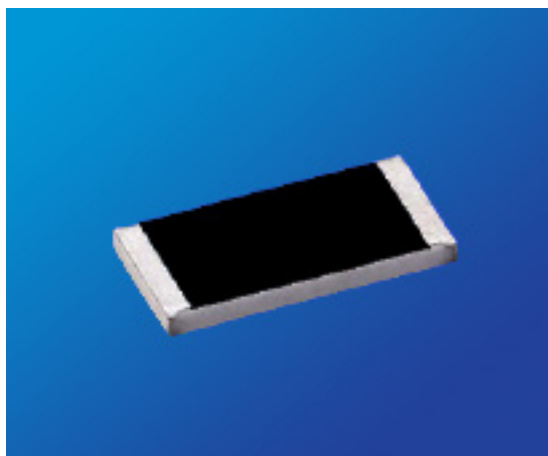


RESISTOR THICK FILM, HIGH TEMPERATURE

RKS SERIES



KEY FEATURES

- Resistances from 10M to 1TOhms
- Resistance Tolerances to $\pm 0.25\%$
- Power Rating 0.05 to 2 Watts
- Non-Magnetic
- TCR's to $\pm 25\text{ppm}/^\circ\text{C}$
- Special High Temperature Version to 300°C
- High Value Thick Film Resistance Element
- Available in sizes 0420, 0603, 0805, 1206, 1210, 2512, 4020

APPLICATIONS

- Engine Sensors
- Data Recorders
- Surge Protection
- Temperature Sensors

PRODUCT SUMMARY

PRODUCT SERIES (RKS)	SIZE	POWER RATING (W) ¹	WORKING VOLTAGE (VAC)		TEMPERATURE RANGE ²
			TRIMMED	UNTRIMMED ($\geq 5\%$)	
RKS07	0402	0.050	30	60	• - 55°C to + 155°C (Standard Version) • - 55°C to + 300°C (High Temperature Version TCR valid + 25°C to + 125°C)
RKS14	0603	0.1	75	150	
RKS15	0805	0.125	100	200	
RKS18	1206	0.25	200	400	
RKS41	1210	0.35	300	600	
RKS20	2512	1.00	1500	2000	
RKS21	4020	2.00	4000	6000	

¹ Solder Pads must have sufficient heat conduction

² See Power Derating Curve

- **TEMPERATURE COEFFICIENT:** $\pm 25\text{ppm}/^\circ\text{C}$ to $\pm 3000\text{ppm}/^\circ\text{C}$
- **TOLERANCE RANGE:** $\pm 0.25\%$ to $\pm 30\%$

AVAILABLE OPTIONS (Consult Factory)

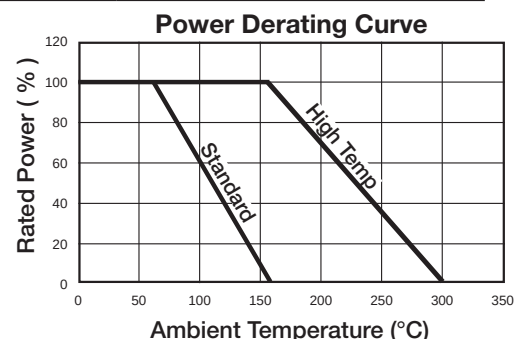
- Special Testing Requirements

HOW TO ORDER

RKS	21	W	N	038M0	K	E
RESISTOR THICK FILM	PACKAGE CODE	OPERATING TEMPERATURE	TEMPERATURE COEFFICIENT OF RESISTANCE (TCR)	RESISTANCE	TOLERANCE	PACKING
	07 = 0402 14 = 0603 15 = 0805 18 = 1206 41 = 1210 20 = 2512 21 = 4020	S = -55°C to + 155°C W = -55°C to + 300°C	T = $\pm 25\text{ppm}/^\circ\text{C}$ Q = $\pm 50\text{ppm}/^\circ\text{C}$ N = $\pm 100\text{ppm}/^\circ\text{C}$ K = $\pm 250\text{ppm}/^\circ\text{C}$ J = $\pm 500\text{ppm}/^\circ\text{C}$ H = $\pm 1000\text{ppm}/^\circ\text{C}$ G = $\pm 2000\text{ppm}/^\circ\text{C}$ F = $\pm 3000\text{ppm}/^\circ\text{C}$	038M0 = $38.0\text{M}\Omega$ 380M0 = $380\text{M}\Omega$ 00368 = 3.86Ω 03860 = 386Ω 001T0 = $1.0\text{T}\Omega$ Letter denotes decimal place. "M" 10^6 , "G" 10^9 , "T" 10^{12} Remaining 4 digits are significant or placeholders.	C = $\pm 0.25\%$ D = $\pm 0.50\%$ F = $\pm 1.0\%$ G = $\pm 2.0\%$ J = $\pm 5.0\%$ K = $\pm 10.0\%$ M = $\pm 20.0\%$ N = $\pm 30.0\%$	E = Embossed Tape & Reel

Silver Termination Finish: Plat/Silver

Example P/N: RKS21WN038M0KE is Resistor Thick Film, size 4020, -55°C to + 300°C , $\pm 100\text{ppm}/^\circ\text{C}$, $38.0\text{M}\Omega$, $\pm 10.0\%$, embossed tape & reel



RESISTOR THICK FILM, HIGH TEMPERATURE RKS SERIES



ELECTRICAL CHARACTERISTICS

Package Size	Tolerances Available (%) Temperature Coefficients Available ($\pm$ ppm/ $^{\circ}$ C) ² Voltage Coefficients Available (ppm / V) ²					
	Resistance Ranges (W)					
	10M - 100M	>100M - 500M	>500M - 1G	>1G - 10G	>10G - 100G	>100G - 1T
0402	5 to 20% 50, 100 500ppm/V	5% to 20% 100, 250 1000ppm/V	5% to 20% 250, 500 1000ppm/V	10% to 30% 1000, 2000 2000ppm/V	10% to 30% 2000, 3000 5000ppm/V	Contact Factory
0603	1 to 20% 50, 100 500ppm/V	2% to 20% 100, 250 500ppm/V	5% to 20% 250, 500 1000ppm/V	5% to 30% 500, 1000 2000ppm/V	10% to 30% 2000, 3000 5000ppm/V	Contact Factory
0805	0.5 to 20% 50, 100 500ppm/V	2% to 20% 100, 250 500ppm/V	5% to 20% 250, 500 500ppm/V	5% to 20% 500, 1000 1000ppm/V	10% to 30% 1000, 2000 3000ppm/V	-
1206	0.5% to 20% 25, 50, 100 250ppm/V	2% to 20% 50, 100, 250 500ppm/V	5% to 20% 100, 250 500ppm/V	5% to 20% 500, 1000 500ppm/V	10% to 30% 1000, 2000 1000ppm/V	-
1210	0.5% to 20% 25, 50, 100 25ppm/V	2% to 20% 50, 100, 250 250ppm/V	5% to 20% 100, 250 250ppm/V	5% to 20% 250, 500 250ppm/V	5% to 20% 500, 1000 500ppm/V	10% to 30% 1000, 2000 2000ppm/V
2512 ¹	0.5% to 20% 25, 50, 100 25ppm/V	1% to 20% 25, 50, 100 50ppm/V	1% to 20% 100, 250 50ppm/V	2% to 20% 100, 250 100ppm/V	5% to 20% 250, 500 250ppm/V	10% to 30% 500, 1000 1000ppm/V
4020 ¹	0.25% to 10% 25, 50, 100 10ppm/V	0.5% to 20% 25, 50, 100 25ppm/V	1% to 20% 25, 50, 100 25ppm/V	2% to 20% 50, 100 50ppm/V	5% to 30% 100, 250 100ppm/V	10% to 30% 500, 1000 500ppm/V

¹ TCR in ppm/K; +25 $^{\circ}$ C to +125 $^{\circ}$ C; TCR below standard TCR (highest value) and values >100G; +25 $^{\circ}$ C to +85 $^{\circ}$ C

² VCR: typical values, all negative, not for all TCR values available

ENVIRONMENTAL CHARACTERISTICS

Specification	Value
Solderability	250 $^{\circ}$ C, 3s
Max Soldering Temperature	260 $^{\circ}$ C, 10s
Climatic Category	55 / 155 / 56

Long Term Stability	Max ΔR		
	<1 G W	1 G W - 10 G W	>10 G W
Storage 125°C, 1000h	<1%	<2%	<5%
Load Life 70°C, 1000h	<0.5%	<1%	<2%
Maximum Voltage, 1000h	<0.5%	<1%	<2%

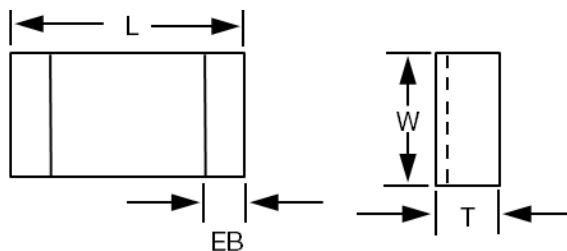


RESISTOR THICK FILM, HIGH TEMPERATURE

RKS SERIES



MECHANICAL CHARACTERISTICS



Package Size	Dimensions			
	L (Length) Inches [mm]	W (Width) Inches [mm]	T (Thickness) Inches [mm]	EB (End Band) Inches [mm]
0402	0.037 ±0.002 [0.95 ±0.05]	0.018 ±0.002 [0.48 ±0.10 / -0.05]	0.012 ±0.002 [0.3 ±0.05]	0.004 +0.004 / -0.002 [0.1 +0.10 / -0.05]
0603	0.060 +0.006 / -0.002 [1.5 +0.15 / -0.05]	0.030 +0.008 / -0.002 [0.8 +0.15 / -0.05]	0.016 +0.006 / -0.002 [0.4 +0.15 / -0.05]	0.008 +0.008 / -0.004 [0.2 +0.2 / -0.1]
0805	0.080 +0.006 / -0.002 [2.0 +0.15 / -0.05]	0.050 +0.006 / -0.002 [1.25 +0.15 / -0.05]	0.016 +0.006 / -0.002 [0.4 +0.15 / -0.05]	0.012 +0.008 / -0.004 [0.3 +0.2 / -0.1]
1206	0.126 +0.006 / -0.002 [3.2 +0.15 / -0.05]	0.060 +0.008 / -0.002 [1.5 +0.2 / -0.05]	0.016 +0.006 / -0.002 [0.4 +0.15 / -0.05]	0.012 +0.008 / -0.004 [0.3 +0.2 / -0.1]
1210	0.126 +0.006 / -0.002 [3.2 +0.15 / -0.05]	0.098 +0.008 / -0.002 [2.5 +0.2 / -0.05]	0.020 +0.006 / -0.002 [0.5 +0.15 / -0.05]	0.032 ±0.008 [0.8 ±0.2]
2512	0.250 +0.006 / -0.002 [6.3 +0.15 / -0.05]	0.138 +0.008 / -0.002 [3.5 +0.2 / -0.05]	0.024 +0.006 / -0.002 [0.6 +0.15 / -0.05]	0.035 ±0.008 [0.9 ±0.2]
4020	0.400 +0.006 / -0.002 [10.2 +0.15 / -0.05]	0.200 +0.008 / -0.002 [5.1 +0.2 / -0.05]	0.024 +0.006 / -0.002 [0.6 +0.15 / -0.05]	0.035 ±0.008 [0.9 ±0.2]

PACKAGING INFORMATION

Bulk or Blister tape to IEC 60286-3

- Tape width 8mm / Reel Diameter 180 or 330mm
- Minimum quantity Bulk / 100 pieces per value (30 pieces per value for sizes 4020 and 2512)
- Minimum quantity Tape & Reel / 500 pieces per value
(Note: Except size 0402 / 1000 pieces per value)

Moisture Sensitivity Level: MSL-1

This datasheet is subject to change without notice.

Mouser Electronics

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Johanson:

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