KOA SPEER ELECTRONICS, INC.

RK73G-RT

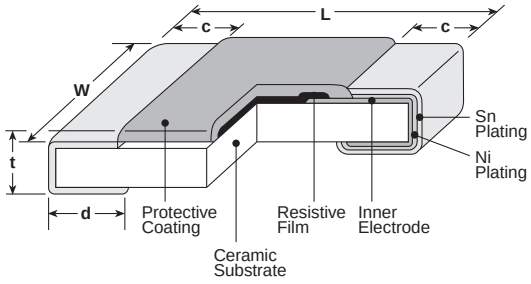
flat chip resistor (ultra precision grade, anti-sulfuration)

EU RoHS COMPLIANT

features

- Excellent anti-sulfuration characteristic due to using high sulfuration-proof inner top electrode material
- Metal-glaze thick film resistor for surface mounting
- High precision resistor with T.C.R. ±50x10^{-6}/K and tolerace ±0.25%
- Suitable for both flow and reflow solderings
- Products with lead-free terminations meet EU RoHS requirements. EU RoHS regulation is not intended for Pb-glass contained in electrode, resistor element and glass.
- AEC-Q200 Tested

dimensions and construction



Type (Inch Size Code)	Dimensions inches (mm) L	W	c	d	t
1E (0402)	.039 $^{+.004}_{-.002}$ (1.0 $^{+0.1}_{-0.05}$)	.02±.002 (0.5±0.05)	.008±.004 (0.2±0.1)	.01 $^{+.002}_{-.004}$ (0.25 $^{+0.05}_{-0.1}$)	.014±.002 (0.35±0.05)
1J (0603)	.063±.008 (1.6±0.2)	.031±.004 (0.8±0.1)	.012±.004 (0.3±0.1)	.012±.004 (0.3±0.1)	.018±.004 (0.45±0.1)
2A (0805)	.079±.008 (2.0±0.2)	.049±.004 (1.25±0.1)	.016±.008 (0.4±0.2)	.012 $^{+.008}_{-.004}$ (0.3 $^{+0.2}_{-0.1}$)	.02±.004 (0.5±0.1)
2B (1206)	.126±.008 (3.2±0.2)	.063±.008 (1.6±0.2)	.02±.012 (0.5±0.3)	.016 $^{+.008}_{-.004}$ (0.4 $^{+0.2}_{-0.1}$)	.024±.004 (0.6±0.1)

ordering information

RK73G	2A	R	T	TD	1002	D
Type	Size	Characteristic	Termination Material	Packaging	Nominal Resistance	Tolerance
	1E 1J 2A 2B	R: Anti-Sulfur	T: Sn	TPL: 0402 only: 2mm pitch punched paper TP: 0402, 0603: 7" 2mm pitch punched paper TD: 0603, 0805, 1206: 7" 4mm pitch punched paper TE: 0805, 1206: 7" 4mm plastic embossed For further information on packaging, please refer to Appendix A	3 significant figures + 1 multiplier "R" indicates decimal on value <100Ω	C: ±0.25% D: ±0.5% F: ±1%

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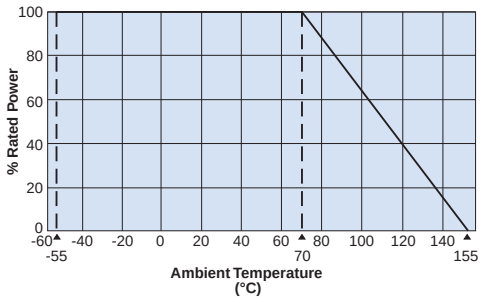
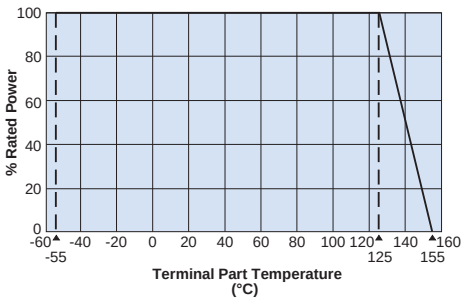
Derating Curve

Ambient Temperature



For resistors operated at an ambient temperature of 70°C or above, a power rating shall be derated in accordance with the derating curve.

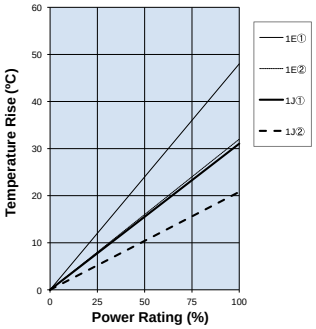
Terminal Part Temperature



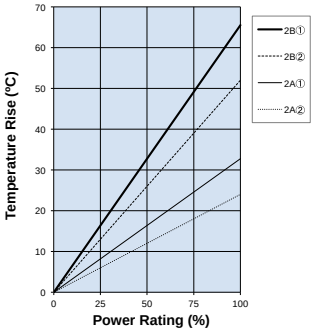
For resistors operated terminal part temperature of described for each size or above, a power rating shall be derated in accordance with the derating curve. Please refer to “Introduction of the derating curve based on the terminal part temperature” in the beginning of our catalog before use.

Temperature Rise

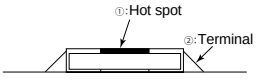
RK73G 1E-1J



RK73G 2A-2B



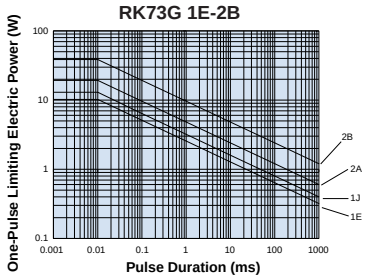
Regarding the temperature rise, the value of the temperature varies per conditions and board for use since the temperature is measured under our measuring conditions.



Measurement condition
Room temperature: 25°C
PCB: FR-4t = 1.6mm
Cu foil thickness: 35µm

One-Pulse Limiting Electric Power

RK73G 1E-2B



The maximum applicable voltage is equal to the max. overload voltage.
Please ask us about the resistance characteristic of continuous applied pulse.
The pulse endurance values are not assured values,so be sure to check the products on actual equipment when you use them.

applications and ratings

Part Designation	Power Rating	Rated Ambient Temp.	Rated Terminal Part Temp.	T.C.R. (X 10^{-6}/K)	Resistance Range E-24, E-96 (C±0.25%)	Resistance Range E-24, E-96 (D±0.5%)	Resistance Range E-24, E-96 (F±1%)	Maximum Working Voltage	Maximum Overload Voltage	Operating Temperature Range
RK73G1E (0402)	0.10W	+70°C	+125°C	±50	—	30Ω - 1MΩ	30Ω - 1MΩ	50V	100V	-55°C to +155°C
RK73G1J (0603)	0.10W				100Ω - 1MΩ			75V	150V	
RK73G2A (0805)	0.125W							150V	200V	
RK73G2B (1206)	0.25W							200V	400V	

Rated voltage = $\sqrt{\text{Power rating x resistance value}}$ or max. working voltage, whichever is lower

If any questions arise whether to use the "Rated Ambient Temperature" or the "Rated Terminal Part Temperature," please give priority to the "Rated Terminal Part Temperature." Prior to use and for more details refer to "Introduction of the derating curves in the terminal part temperature" in the beginning of the catalog.

environmental applications

Performance Characteristics

Parameter	Requirement Δ R ±(%+0.1Ω) Limit	Typical	Test Method
Resistance	Within specified tolerance	—	25°C
T.C.R.	Within specified T.C.R.	—	+25°C/-55°C and +25°C/+125°C
Overload (Short time)	±2%	±0.6%	Rated Voltage x 2.5 for 5 seconds (1E, 2B: Rated Voltage x 2 for 5 seconds)
Resistance to Solder Heat	±1%	±0.4%	260°C ± 5°C, 10 seconds ± 1 second
Rapid Change of Temperature	±0.5%	±0.3%	-55°C (30 minutes) / +125°C (30 minutes), 100 cycles
Moisture Resistance	±2%: 1J, 2A, 2B ±3%: 1E	±0.6%: 1J, 2A, 2B; ±1%: 1E	40°C ± 2°C, 90%-95% RH, 1000 hours, 1.5 hr ON, 0.5 hr OFF cycle
Endurance at 70°C	±2%: 1J, 2A, 2B ±3%: 1E	±0.6%: 1J, 2A, 2B; ±1%: 1E	70°C ± 2°C or rated terminal part temperature ± 2°C 1000 h 1.5 hr ON, 0.5 hr OFF cycle
High Temperature Exposure	±1%	±0.6%	+155°C, 1000 hours
Sulfuration Test	±5%	±0.2%	Soaked in industrial oil with sulfur substance 3.5% contained 105°C ± 3°C, 500 hours

Please refer to conventional products for characteristic data such as temperature rise.

For Surface Temperature Rise Graph see Environmental Applications. Additional environmental applications can also be found at www.koaspeer.com