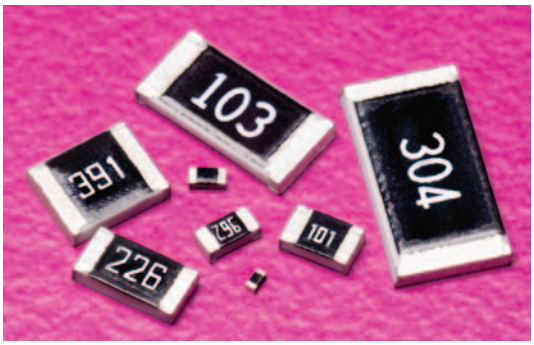
KOA SPEER ELECTRONICS, INC.

RK73B

general purpose 2%, 5% tolerance thick film chip resistor

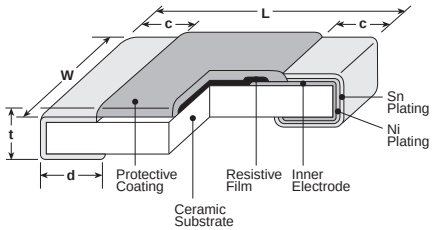
EU RoHS COMPLIANT



features

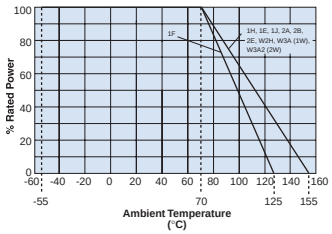
- Wide lineup from 01005 to 2512 size
- Excellent heat resistance and weather resistance are ensured by the use of metal glaze thick film
- Suitable for both flow and reflow solderings
- Products with lead-free terminations meet EU RoHS requirements. EU RoHS regulation is not intended for Pb-glass contained in electrode, resistor element and glass.
- AEC-Q200 Qualified: 0201 (1H), 0402 (1E), 0603 (1J), 0805 (2A), 1206 (2B), 1210 (2E), 2010 (2H/W2H), 2512 (3A/W3A/W3A2)

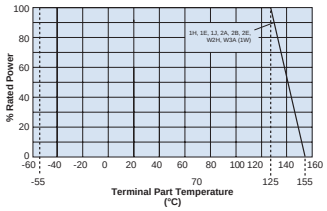
dimensions and construction

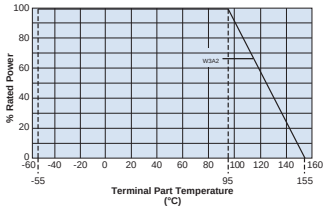


Type*1 (Inch Size Code)	Dimensions inches (mm) L	W	c	d	t
1F (01005)	.015±.001 (0.4±0.02)	.007±.001 (0.2±0.02)	.004±.001 (0.10±0.03)	.004±.001 (0.11±0.03)	.005±.001 (0.13±0.02)
1H (0201)	.024±.001 (0.6±0.03)	.012±.001 (0.3±0.03)	.004±.002 (0.1±0.05)	.006±.002 (0.15±0.05)	.009±.001 (0.23±0.03)
1E (0402)	.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)
1E AT (0402)			.01±.004 (0.25±0.1)	.012±.0046 (0.3±0.15)	
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)
1J AT (0603)			.014±.006 (0.35±0.15)	.02±.008 (0.5±0.2)	
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)
2A AT (0805)			.018±.010 (0.45±0.25)	.024±.008 (0.6±0.2)	.022±.004 (0.55±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)
2B AT (1206)			.022±.012 (0.55±0.35)	.031±.008 (0.8±0.2)	
2E (1210)		.102±.008 (2.6±0.2)	.02±.012 (0.5±0.3)	.016 +.008 -.004 (0.4 +0.2 -0.1)	
2H (2010)	.197±.008 (5.0±0.2)	.098±.008 (2.5±0.2)			
W2H*2 (2010)				.026±.006 (0.65±0.15)	
3A*2 (2512)	.248±.008 (6.3±0.2)	.122±.008 (3.1±0.2)		.016 +.008 -.004 (0.4 +0.2 -0.1)	
W3A/W3A2*2 (2512)				.026±.006 (0.65±0.15)	

Derating Curve







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

When the terminal part temperature of the resistor exceeds the rated terminal part temperature shown above, the power shall be derated according to the derating curve.

Please refer to "Introduction of the derating curves based on the terminal part temperature" on the beginning of our catalog before use

*1 Parentheses indicate EIA package size codes.

*2 RK73B 2H, 3A and 3A2 are also still available (different "d" dimensions = 0.4 +0.2/-0.1mm)

ordering information

RK73B	2B		T	TD	102	J
Type	Size	Characteristics	Termination Material	Packaging	Nominal Resistance	Tolerance
	1F 2E 1H W2H 1E W3A 1J 2H 2A 3A 2B W3A2	Nil: Standard A: Heat shock resistance *2	T: Sn G: Au *3 (L: Sn/Pb*4)	TX: 4mm width - 1mm pitch plastic embossed TBL - TCM: 2mm pitch press paper *5 TPL - TP: 2mm pitch punch paper. TD: 4mm pitch punch paper TE: 4mm pitch plastic embossed Other non-standard reel sizes available, contact factory for other options.	2 significant figures + 1 multiplier "R" indicates decimal on value <10Ω	G: ±2% J: ±5%

*2 With type A only T is available as the terminal surface material.

*3 Products with gold plated electrodes are also available with 1E, 1J and 2A types (10Ω~1MΩ), so please consult with us.

*4 With type 1F, 1H, W2H, W3A, W3A2 only T is available as the terminal surface material.

The terminal surface material lead free is standard. For further information on packaging, please refer to Appendix A

*5 Standard taping specification of 1H is TCM. Previously available "TC (10,000pcs/Reel)" is not recommended for new designs.

Specifications given herein may be changed at any time without prior notice. Please confirm technical specifications before you order and/or use.

10/26/25

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applications and ratings

Part Designation	Power Rating	Rated Ambient Temp.	Rated Terminal Part Temp.	T.C.R. (x10^{-6}/K)	Resistance Range G±2% E-24	Resistance Range J±5% E-24	Maximum Working Voltage	Maximum Overload Voltage	Operating Temperature Range
RK73B1F (01005)	0.03W	70°C	—	±200	100kΩ - 1MΩ	100kΩ - 10MΩ	20V	30V	-55°C to +125°C
				±250	10Ω - 91kΩ	10Ω - 91kΩ			
				0~+300	1Ω - 9.1Ω	1Ω - 9.1Ω			
RK73B1H (0201)	0.05W		125°C	±200	10Ω - 10MΩ	10Ω - 10MΩ	25V	50V	-55°C to +155°C
				±400	—	1Ω - 9.1Ω			
RK73B1E (0402)	0.1W			±200	1Ω - 10MΩ	1Ω - 10MΩ	75V	100V	
RK73B1J (0603)	0.1W			±200	1.1kΩ - 1MΩ	1.1kΩ - 10MΩ	75V		
	0.125W			±400	—	11MΩ - 22MΩ			
RK73B2A (0805)	0.25W			±200	1Ω - 1kΩ	1Ω - 1kΩ			
				±200	1Ω - 1MΩ	1Ω - 1MΩ	150V	200V	
				±400	1.1MΩ - 10MΩ	1.1MΩ - 10MΩ			
RK73B2B (1206)	0.25W			±200	1Ω - 5.6MΩ	1Ω - 5.6MΩ	200V	400V	
				±400	6.2MΩ - 10MΩ	6.2MΩ - 22MΩ			
RK73B2E (1210)	0.50W			±200	10Ω - 5.6MΩ	1Ω - 5.6MΩ			
				±400	—	6.2MΩ - 10MΩ			
RK73BW2H/2H (2010)	0.75W			±200	10Ω - 5.6MΩ	1Ω - 5.6MΩ			
				±400	—	6.2MΩ - 22MΩ			
RK73BW3A/3A (2512)	1.0W			±200	10Ω - 5.6MΩ	1Ω - 5.6MΩ	200V	400V	
				±400	—	6.2MΩ - 22MΩ			
RK73BW3A2 (2512)	2.0W		95°C	±200	10Ω - 5.6MΩ	1Ω - 5.6MΩ	200V	400V	
				±400	—	6.2MΩ - 22MΩ			

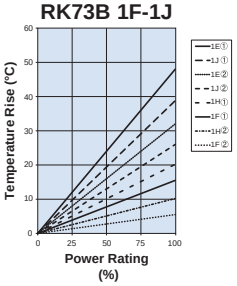
Rated voltage = $\sqrt{\text{Power rating x resistance value}}$ or max. working voltage, whichever is lower

If any questions arise on whether to use the "Rated Ambient Temperaute" or the "Rated Terminal Part Temperature" in your usage conditions, please give priority to the "Rated Terminal Part Temperature." Prior to use and for more details, refer to "Introduction of the derating curves based on the terminal part temperature" in the beginning of our catalog. Temperature rise at high power will depend on PCB layout. Be sure to contact factory prior to use and monitor terminal part temperature.

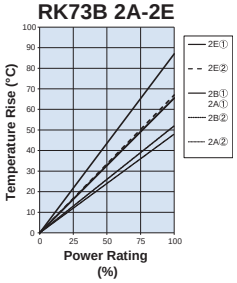
environmental applications

Temperature Rise

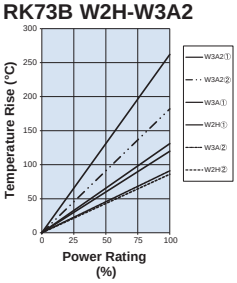
RK73B 1F-1J



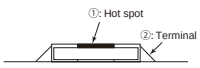
RK73B 2A-2E



RK73B W2H-W3A2



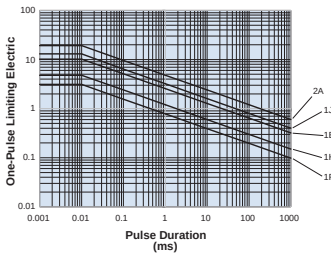
Measurement condition
Room temperature: 25°C
PCB: FR-4t = 1.6mm
Cu foil thickness: 35μm



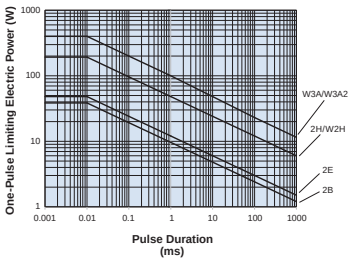
Regarding the temperature rise, the value of the temperature varies per conditions and board for use since the temperature is measured under our measuring conditions.

One-Pulse Limiting Electric Power

RK73B 1F-2A



RK73B 2B-W3A2



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.

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%	±1%: 1F ±0.5%: Others	Rated Voltage x 2.5 for 5 seconds (1E, 2B, W3A2: Rated Voltage x 2 for 5 seconds)
Resistance to Soldering Heat	±1%: 1F~W3A2 (10Ω≤R≤1MΩ) ±3%: 1F~W3A2 (R<10Ω, R>1MΩ)	±0.5%: 1F~W3A2 (10Ω≤R≤1MΩ); ±1%: 1F~W3A2 (R<10Ω, R>1MΩ)	260°C ± 5°C, 10 seconds ± 1 second
Rapid Change of Temperature	±1%: 1F, Characteristic (A) Heat Shock Resistance ±0.5%: Others	±0.5%: 1F, Characteristic (A) Heat Shock Resistance ±0.3%: Others	Characteristic (Nil) Standard: -55°C (30 minutes), +125°C (30 minutes), 100 cycles Characteristic (A) Heat Shock Resistance: -55°C (30 minutes), +125°C (30 minutes), 1000 cycles
Moisture Resistance	±2%: 1J, 2A, 2B ±3%: Others	±0.75%: 1J, 2A, 2B ±1.5%: 1F; ±1%: Others	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%: Others	±0.75%: 1J, 2A, 2B ±1%: Others	70°C ± 2°C or rated terminal part temperature ± 2°C, 1000 hours, 1.5 hr ON, 0.5 hr OFF cycle
High Temperature Exposure	±1%	±0.5%: 1F ±0.3%: Others	+125°C, 1000 hours: 1F +155°C, 1000 hours: 1H, 1E, 1J, 2A, 2B, 2E, W2H, W3A, W3A2

Specifications given herein may be changed at any time without prior notice. Please confirm technical specifications before you order and/or use. 4/26/22