

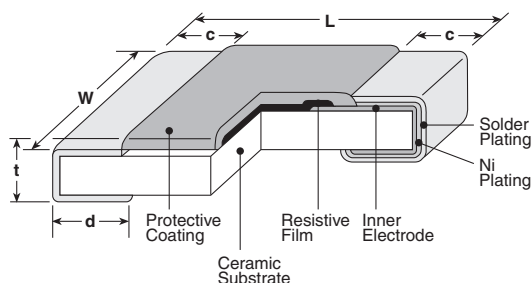
## flat chip resistors (anti-sulfuration)

### features

- Excellent anti-sulfuration characteristic due to using high sulfuration-proof inner top electrode material
- Excellent heat resistance and weather resistance are ensured by the use of metal glaze thick film
- High stability and high reliability with the triple-layer structure of electrode
- 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 (W2H), 2512 (W3A)



### dimensions and construction



Type (Inch Size Code)	Dimensions inches (mm)				
	L	W	c	d	t
<b>1F</b> (01005)	.016±.001 (0.4±0.02)	.008±.001 (0.2±0.02)	.004±.001 (0.1±0.03)	.004±.001 (0.11±0.03)	.005±.001 (0.13±0.02)
<b>1H</b> (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)
<b>1E</b> (0402)	.039 <sup>+0.004</sup> <sub>-0.002</sub> (1.0 <sup>+0.1</sup> <sub>-0.05</sub> )	.02±.002 (0.5±0.05)	.008±.004 (0.2±0.1)	.01 <sup>+0.002</sup> <sub>-0.004</sub> (0.25 <sup>+0.05</sup> <sub>-0.1</sub> )	.014±.002 (0.35±0.05)
<b>1J</b> (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)
<b>2A</b> (0805)	.079±.008 (2.0±0.2)	.049±.004 (1.25±0.1)	.016±.008 (0.4±0.2)	.012 <sup>+0.008</sup> <sub>-0.004</sub> (0.3 <sup>+0.2</sup> <sub>-0.1</sub> )	.02±.004 (0.5±0.1)
<b>2B</b> (1206)	.126±.008 (3.2±0.2)	.063±.008 (1.6±0.2)		.016 <sup>+0.008</sup> <sub>-0.004</sub> (0.4 <sup>+0.2</sup> <sub>-0.1</sub> )	
<b>2E</b> (1210)		.102±.008 (2.6±0.2)			
<b>W2H</b> (2010)	.197±.008 (5.0±0.2)	.098±.008 (2.5±0.2)	.02±.012 (0.5±0.3)	.023±.006 (0.65±0.15)	.024±.004 (0.6±0.1)
<b>W3A/ W3A2*</b> (2512)	.248±.008 (6.3±0.2)	.122±.008 (3.1±0.2)			

\* RK73Z exempt

### ordering information

RK73H	2A	RT	TD	1002	F
<b>Type</b>	<b>Power Rating</b>	<b>Termination Surface Material</b>	<b>Packaging</b>	<b>Nominal Resistance</b>	<b>Resistance Tolerance</b>
RK73B RK73H RK73Z	1F 1H 1E 1J 2A 2B 2E W2H W3A W3A2	RT: Sn Anti-Sulfur	TX: 01005 only: 4mm width - 1mm pitch plastic embossed TBL: 01005 only: 2mm pitch pressed paper TC: 0201 only: 7" 2mm pitch pressed paper (TC: 10,000 pcs/reel, TCM: 15,000 pcs/reel) TPL: 0402 only: 2mm pitch punch paper TP: 0402, 0603, 0805: 7" 2mm pitch punch paper TD: 0603, 0805, 1206, 1210: 7" 4mm pitch punched paper TDD: 0603, 0805, 1206, 1210: 10" paper tape TE: 0805, 1206, 1210, 2010 & 2512: 7" embossed plastic TED: 0805, 1206, 1210, 2010 & 2512: 10" embossed plastic For further information on packaging, please refer to Appendix A	RK73B: 3 digits RK73H: 4 digits RK73Z: None	D: ±0.5% F: ±1% G: ±2% J: ±5%

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

10/25/18

### applications and ratings

#### RK73B/RK73H

Part Designation	Power Rating	Rated Ambient Temp.	Rated Terminal Part Temp.	T.C.R. (ppm/°C) Max.	Resistance Range				Maximum Working Voltage	Maximum Overload Voltage	Operating Temp. Range
					RK73H		RK73B				
					D±0.5% E24, E96	F±1% E24, E96*	G±2% E24	J±5% E24			
1F	0.03W	70°C	—	±200	—	100kΩ - 2MΩ*	100kΩ - 1MΩ	100kΩ - 10MΩ	20V	30V	-55°C to +125°C
				±250		10Ω - 91kΩ*	10Ω - 91kΩ	10Ω - 91kΩ			
				0 - +300		—	1Ω - 9.1Ω	1Ω - 9.1Ω			
1H	0.05W	70°C	125°C	±200	100Ω - 100kΩ	100Ω - 1MΩ	—	100 - 1M	25V	50V	-55°C to +155°C
±300	—			10Ω - 97.6Ω	—	10Ω - 91Ω					
1E	0.1W			±100	100Ω - 1MΩ	10Ω - 1MΩ	—	—	75V	100V	
1J	0.1W			±200	—	1.02MΩ - 10MΩ	10Ω - 10MΩ	1Ω - 10MΩ			
				±100	1.02kΩ - 1MΩ	1.02kΩ - 1MΩ	—	—			
	±200			—	1.02MΩ - 10MΩ	1.1kΩ - 10MΩ	1.1kΩ - 10MΩ				
	±100			100Ω - 1kΩ	10Ω - 1kΩ	—	—				
±200	—			—	10Ω - 1kΩ	1Ω - 1kΩ					
2A	0.25W			±100	100Ω - 1MΩ	10Ω - 1MΩ	—	—	150V	200V	
±200	—			1.02MΩ - 10MΩ	10Ω - 10MΩ	1Ω - 10MΩ					
2B	0.25W			±100	100Ω - 1MΩ	10Ω - 1MΩ	—	—	200V	400V	
±200	—			1.02MΩ - 10MΩ	10Ω - 10MΩ	1Ω - 10MΩ					
2E	0.5W	±100	100Ω - 1MΩ	10Ω - 10MΩ	—	—					
W2H	0.75W	±200	—	—	10Ω - 1MΩ	1Ω - 1MΩ					
		±100	10Ω - 1MΩ	10Ω - 1MΩ	—	—					
W3A	1W	±200	—	1 - 9.76	1Ω - 10MΩ	1Ω - 10MΩ					
		±100	10Ω - 1MΩ	10Ω - 1MΩ	—	—					
W3A2	2W	±200	—	1.02MΩ - 10MΩ	10Ω - 10MΩ	1Ω - 10MΩ					
		±100	10Ω - 1MΩ	10Ω - 1MΩ	—	—					

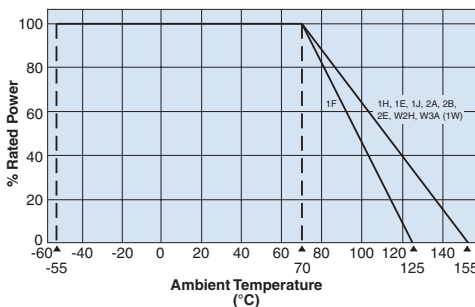
Rated voltage =  $\sqrt{\text{Power rating} \times \text{resistance value}}$  or max. working voltage, whichever is lower

\*The nominal resistance value for RK73H1F (F:±1%) is E24

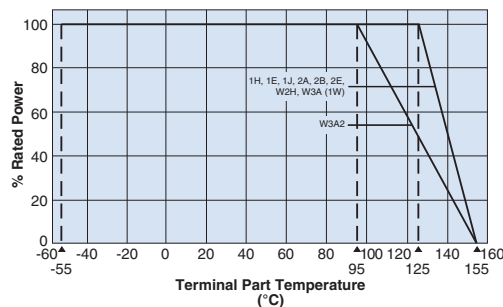
If any questions arise whether to use the "Rated Ambient Temperature" or the "Rated Terminal Part Temperature," please give priority to the "Rated Terminal Part Temperature." Prior to use and for more details refer to "Introduction of the derating curves in the terminal part temperature" in the beginning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

While using under high power, the temperature of the product may increase depending on the condition of heat dissipation from PCB. Be sure to check the terminal part temperature as well as precautions to use on delivery specification before use.

### Derating Curve



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



For resistors operated at a terminal part temperature of described for each size or above, a power rating shall be derated in accordance with the above derating curve.

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

### applications and ratings (continued)

#### RK73Z

Part Designation	Rated Ambient Temperature	Rated Terminal Part Temperature	Resistance	Current Rating	Maximum Surge Current	Operating Temperature Range
1H	+70°C	+125°C	100mΩ max.	0.5A	1A	-55°C to +155°C
1E			50mΩ max.	1A	2A	
1J				2A	5A	
2A			10A			
2B						
2E						
W2H						
W3A						

### environmental applications

#### Performance Characteristics

Parameter	RK73H, RK73B Requirement $\Delta R$ $\pm(\%+0.1\Omega)$		RK73Z Requirement		Test Method
	Limit	Typical	Limit	Typical	
Resistance	Within specified tolerance	—	R $\leq$ 100mΩ: 1H R $\leq$ 50mΩ: All others	R $\leq$ 90mΩ: 1H R $\leq$ 40mΩ: All others	25°C
T.C.R.	Within specified T.C.R.	—	—	—	+25°C/-55°C and +25°C/+125°C
Overload (Short time)	$\pm 2\%$	$\pm 1\%$ : 1F $\pm 0.8\%$ : All others	R $\leq$ 100mΩ: 1H R $\leq$ 50mΩ: All others	R $\leq$ 90mΩ: 1H R $\leq$ 40mΩ: All others	RK73B, RK73H Rated Voltage x 2.5 for 5 seconds (1E, 2B, W3A2: Rated Voltage x 2 for 5 seconds) RK73Z: Max. overload current for 5 seconds
Resistance to Solder Heat	$\pm 1\%$ : 10Ω $\leq$ R $\leq$ 1MΩ $\pm 3\%$ : R $<$ 10Ω, R $>$ 1MΩ	$\pm 1\%$ : R $<$ 10Ω, R $>$ 1MΩ $\pm 0.5\%$ : All others	R $\leq$ 100mΩ: 1H R $\leq$ 50mΩ: All others	R $\leq$ 90mΩ: 1H R $\leq$ 40mΩ: All others	260°C $\pm$ 5°C, 10 seconds $\pm$ 1 second
Rapid Change of Temperature	$\pm 1\%$ : 1F $\pm 0.5\%$ : All others	$\pm 0.5\%$ : 1F $\pm 0.3\%$ : All others	R $\leq$ 100mΩ: 1H R $\leq$ 50mΩ: All others	R $\leq$ 90mΩ: 1H R $\leq$ 40mΩ: All others	-55°C (30 minutes), +125°C (30 minutes), 100 cycles
Moisture Resistance	$\pm 2\%$ : 1J, 2A, 2B $\pm 3\%$ : All others	$\pm 0.75\%$ : 1J, 2A, 2B $\pm 1.5\%$ : 1F $\pm 1\%$ : All others	R $\leq$ 150mΩ: 1H R $\leq$ 100mΩ: All others	R $\leq$ 100mΩ: 1H R $\leq$ 50mΩ: All others	40°C $\pm$ 2°C, 90%-95% RH, 1000 hours, 1.5 hr ON, 0.5 hr OFF cycle
Endurance at 70°C	$\pm 2\%$ : 1J, 2A, 2B $\pm 3\%$ : All others	$\pm 0.75\%$ : 1J, 2A, 2B $\pm 1\%$ : All others	R $\leq$ 150mΩ: 1H R $\leq$ 100mΩ: All others	R $\leq$ 100mΩ: 1H R $\leq$ 50mΩ: All others	70°C $\pm$ 2°C, 1000 hours, 1.5 hr ON, 0.5 hr OFF cycle
High Temperature Exposure	$\pm 1\%$	$\pm 0.5\%$	R $\leq$ 150mΩ: 1H R $\leq$ 100mΩ: All others	R $\leq$ 100mΩ: 1H R $\leq$ 50mΩ: All others	+125°C, 1000 hours: 1F; +155°C, 1000 hours: 1H, 1E, 1J, 2A, 2B, 2E, W2H, W3A
Sulfuration Test	$\pm 5\%$	$\pm 0.3\%$ : 1F, 1H $\pm 0.2\%$ : All others	R $\leq$ 150mΩ: 1H R $\leq$ 100mΩ: All others	R $\leq$ 100mΩ: 1H R $\leq$ 50mΩ: All others	Soaked in industrial oil with 3.5% sulfur concentration 105°C $\pm$ 3°C, 500 hours