KOA SPEER ELECTRONICS, INC.

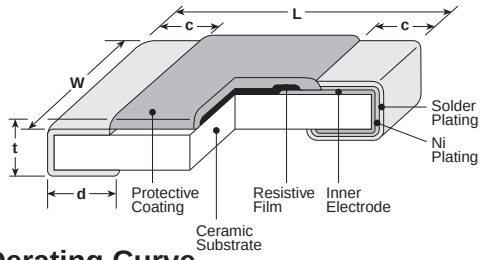
RK73H

precision 0.5%, 1% tolerance thick film chip resistor

features

- 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)

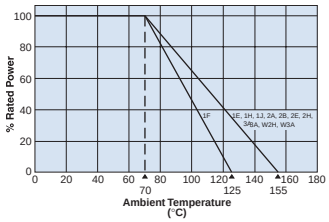
dimensions and construction



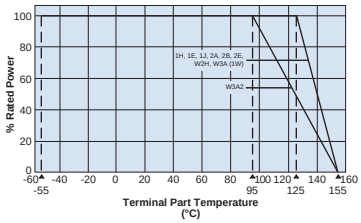
Type* (Inch Size Code)	Dimensions inches (mm) L	W	c	d	t
1F (01005)	.016±.0008 (0.4±0.02)	.008±.0008 (0.2±0.02)	.004±.001 (0.1±0.03)	.004±.001 (0.11±0.03)	.005±.0008 (0.13±0.02)
1H (0201)	.024±.001 (0.6±0.03)	.012±.001 (0.3±0.03)	.004±.002 (0.1±0.05)	.006±.002 (0.15±0.05)	.009±.001 (0.23±0.03)
1E (0402)	.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)
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)
2E (1210)		.102±.008 (2.6±0.2)			
2H (2010)	.197±.008 (5.0±0.2)	.098±.008 (2.5±0.2)			
W2H (2010)				.026±.006 (0.65±0.15)	
3A (2512)	.248±.008 (6.3±0.2)	.122±.008 (3.1±0.2)		.016 +.008 -.004 (0.4 +0.2 -0.1)	
W3A/W3A2 (2512)				.026±.006 (0.65±0.15)	

* Parentheses indicate EIA package size codes.

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.

ordering information

RK73H	2B	T	TD	1003	F
Type	Size	Termination Material	Packaging	Nominal Resistance	Tolerance
	1F 1H 1E 1J 2A 2B 2E W2H W3A 2H 3A W3A2	T: Sn (1F ~ W3A2) Contact factory for below options: L: SnPb (1E, 1J, 2A, 2B, 2E, 2H, 3A) G: Au (1E ~ 2A: 10Ω ~ 1MΩ)	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) TCD: 0201 only: 10" 2mm pitch pressed paper TPD: 0402 only: 10" 2mm pitch plastic embossed 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	3 significant figures + 1 multiplier "R" indicates decimal on value <100Ω	D: ±0.5% F: ±1%

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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 D±0.5% E-24, E-96	Resistance Range F±1% E-24, E-96*	Maximum Working Voltage	Maximum Overload Voltage	Operating Temperature Range
RK73H1F (01005)	0.03W	70°C	—	±200	—	100kΩ - 2MΩ*	20V	30V	-55°C to +125°C
				±250	—	10Ω - 91kΩ*			
RK73H1H (0201)	0.05W		125°C	±200	10Ω - 1MΩ	10Ω - 10MΩ*	25V	50V	-55°C to +155°C
				±400	—	1.0Ω - 9.1Ω*			
RK73H1E (0402)	0.1W			±100	10Ω - 1MΩ	10Ω - 1MΩ	75V	100V	
				±200	—	1.0Ω - 9.76Ω 1.02MΩ - 10MΩ			
RK73H1J (0603)	0.1W			±100	1.02kΩ - 1MΩ	1.02kΩ - 1MΩ	75V		
				±200	—	1.02MΩ - 10MΩ			
	0.125W			±100	10Ω - 1kΩ	10Ω - 1kΩ			
				±200	—	1.0Ω - 9.76Ω			
RK73H2A (0805)	0.25W			±100	10Ω - 1MΩ	10Ω - 1MΩ	150V	200V	
				±200	—	1.0Ω - 9.76Ω			
				±400	—	1.02MΩ - 10MΩ			
RK73H2B (1206)	0.25W			±100	10Ω - 1MΩ	10Ω - 1MΩ	200V	400V	
				±200	—	1.0Ω - 9.76Ω 1.02MΩ - 5.6MΩ			
				±400	—	5.62MΩ - 10MΩ			
RK73H2E (1210)	0.5W			±100	10Ω - 1MΩ	10Ω - 1MΩ			
				±200	—	1.0Ω - 9.76Ω 1.02MΩ - 5.6MΩ			
					—				
				±400	—	5.62MΩ - 10MΩ			
RK73HW2H/2H (2010)	0.75W			±100	10Ω - 1MΩ	10Ω - 1MΩ			
				±200	—	1.0Ω - 9.76Ω 1.02MΩ - 5.6MΩ			
				±400	—	5.62MΩ - 10MΩ			
RK73HW3A/3A (2512)	1.0W			±100	10Ω - 1MΩ	10Ω - 1MΩ	200V	400V	
				±200	—	1.0Ω - 9.76Ω 1.02MΩ - 5.6MΩ			
				±400	—	5.62MΩ - 10MΩ			
RK73HW3A2 (2512)	2.0W	—	95°C	±100	10Ω - 1MΩ	10Ω - 1MΩ	200V	400V	
				±200	—	1.0Ω - 9.76Ω 1.02MΩ - 5.6MΩ			
				±400	—	5.62MΩ - 10MΩ			

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

*1F: E-24. 1H: 1.0~9.1, 1M~10MΩ: E-24. 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 based on 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.

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%	±1%: 1F ±0.5% Another	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%: 1H ~ W3A2 (R<10Ω, R>1MΩ)	±0.5%: 1F ~ W3A2 (10Ω<R<1MΩ); ±1%: 1H ~ W3A2 (R<10Ω, R>1MΩ)	260°C ± 5°C, 10 seconds ± 1 second
Rapid Change of Temperature	±1%: 1F; ±0.5% Another	±0.5%: 1F; ±0.3% Another	-55°C (30 minutes), +125°C (30 minutes), 100 cycles
Moisture Resistance	±2%: 1J, 2A, 2B ±3%: Another	±0.75%: 1J, 2A, 2B; ±1.5%:1F, ±1%: Another	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%: Another	±0.75%: 1J, 2A, 2B; ±1%: Another	70°C ± 2°C, 1000 hours, 1.5 hr ON, 0.5 hr OFF cycle
High Temperature Exposure	±1%	±0.5%: 1F ±0.3%: Another	+125°C, 1000 hours: 1F; +155°C, 1000 hours: 1E, 1H, 1J, 2A, 2B, 2E, 2H/W2H, 3A/W3A/W3A2

2/04/19