

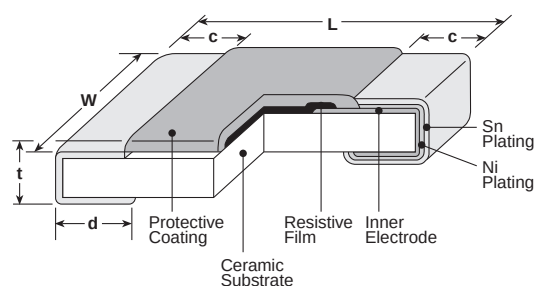
anti-surge endured pulse power thick film chip resistor



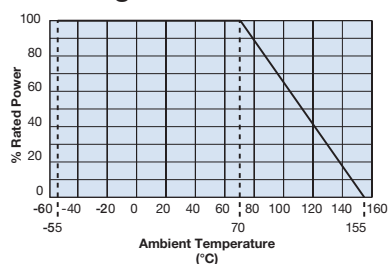
features

- Superior to RK73B/RK73H series in pulse withstanding voltage and high power
- Down to $\pm 0.5\%$ tolerance
- Suitable for both reflow and flow 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

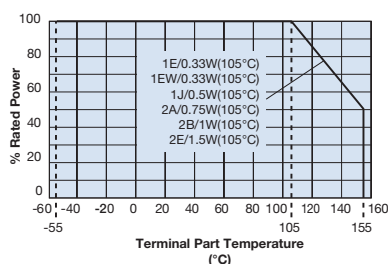
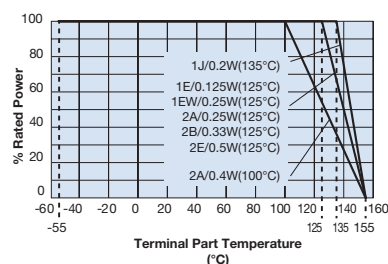
dimensions and construction



Derating Curve



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



When the terminal part temperature of the resistor exceeds the rated terminal part temperature in the Applications and Ratings chart, the power shall be derated according to the derating curves on the left.

If you want to use the rated power of ^{#1}, ^{#3}, please use the derating curve based on the terminal part temperature in the far left graph. Please refer to "Introduction of the derating curve based on the terminal part temperature" in the beginning of our catalog before use.

Type (Inch Size Code)	L	W	c	d	t
SG73P1E (0402)	.039 ^{+0.004} / _{-0.002} (1.0 ^{+0.1} / _{-0.05})	.02±.002 (0.5±0.05)	.006±.004 (0.15±0.1)	.010 ^{+0.002} / _{-0.004} (0.25 ^{+0.05} / _{-0.1})	.014±.002 (0.35±0.05)
SG73P1EW (0402)	.039 ^{+0.004} / _{-0.002} (1.0 ^{+0.1} / _{-0.05})	.02±.002 (0.5±0.05)	.006±.004 (0.15±0.1)	.010 ^{+0.002} / _{-0.004} (0.25 ^{+0.05} / _{-0.1})	.014±.002 (0.35±0.05)
SG73P1J (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)
SG73P1J AT (0603)			.014±.006 (0.35±0.15)	.02±.008 (0.5±0.2)	
SG73P2A (0805)	.079±.008 (2.0±0.2)	.049±.004 (1.25±0.1)	.012 ^{+0.008} / _{-0.004} (0.3 ^{+0.2} / _{-0.1})	.012 ^{+0.008} / _{-0.004} (0.3 ^{+0.2} / _{-0.1})	.02±.004 (0.5±0.1)
SG73P2A AT (0805)			.018±.010 (0.45±0.25)	.024±.008 (0.6±0.2)	.022±.004 (0.55±0.1)
SG73P2B (1206)	.126±.008 (3.2±0.2)	.063±.008 (1.6±0.2)	.016 ^{+0.008} / _{-0.004} (0.4 ^{+0.2} / _{-0.1})	.016 ^{+0.008} / _{-0.004} (0.4 ^{+0.2} / _{-0.1})	.024±.004 (0.6±0.1)
SG73P2B AT (1206)			.022±.014 (0.55±0.35)	.031±.008 (0.8±0.2)	
SG73P2E (1210)		.102±.008 (2.6±0.2)	.016 ^{+0.008} / _{-0.004} (0.4 ^{+0.2} / _{-0.1})	.016 ^{+0.008} / _{-0.004} (0.4 ^{+0.2} / _{-0.1})	

ordering information

SG73P	2B		T	TD	1001	F
Type	Size	Characteristic	Termination Material	Packaging	Nominal Resistance	Tolerance
SG73P	1E 1EW 1J 2A 2B 2E	Nil: Standard A: Heat shock resistance* *1J, 2A, and 2B are available for heat shock resistance. Contact us when you have control request for environmental hazardous material other than the substance specified by EU RoHS. For further information on packaging, please refer to Appendix A	T: Sn	TP: 0402, 0603, 0805: 2mm pitch punch paper TD: 0603, 0805, 1206, 1210: 4mm pitch punched paper TE: 0805, 1206, 1210: 4mm embossed plastic	±0.5%, ±1%: 3 significant figures + 1 multiplier "R" indicates decimal on value <100Ω ±2%, ±5%: 2 significant figures + 1 multiplier "R" indicates decimal on value <10Ω	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.

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anti-surge endured pulse power thick film chip resistor

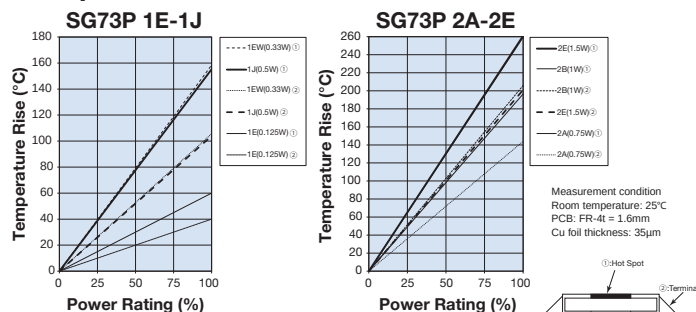
applications and ratings

Part Designation	Power Rating	Rated Ambient Temp.	Rated Terminal Part Temp.	T.C.R. (ppm/°C) Max.	Resistance Range (Ω)			Absolute Maximum Working Voltage	Absolute Maximum Overload Voltage	Operating Temp. Range
					(E-24)/E-96 (D±0.5%)	(E-24)/E-96 (F±1%)	(E-24) (G±2%, J±5%)			
1E	0.125W	70°C	125°C	±200	10 - 1M	1 - 1M	1 - 10M	75V	100V	-55°C to +155°C
	0.33W	—	105°C		±100	10 - 1M	10 - 1M			
1EW	0.25W*1	70°C	125°C	±200	—	1 - 9.76	1 - 9.1 1.1M - 10M	75V	100V	
				±100	10 - 1M	10 - 1M	10 - 1M			
	0.33W	—	105°C	±200	—	1 - 9.76	1 - 9.1 1.1M - 10M			
				±100	10 - 1M	10 - 1M	10 - 1M			
1J	0.2W	70°C	135°C	±100	510 - 576k	510 - 576k	510 - 560k	150V	200V	
				±100*2	10 - 499 590k - 1M	1 - 499 590k - 1M	1 - 470 620k - 10M			
	0.5W	—	105°C	±100	510 - 576k	510 - 576k	510 - 560k			
				±100*2	10 - 499 590k - 1M	1 - 499 590k - 1M	1 - 470 620k - 10M			
2A	0.25W	70°C	125°C	±100	100 - 100k	100 - 100k	100 - 100k	400V	600V (800V)*3	
				±200	10 - 97.6 102k - 1M	1 - 97.6 102k - 1M	1 - 91 110k - 10M			
	0.75W	—	105°C	±100	100 - 100k	100 - 100k	100 - 100k			
				±200	10 - 97.6 102k - 1M	1 - 97.6 102k - 1M	1 - 91 110k - 10M			
2B	0.33W	70°C	125°C	±100	300 - 1M	300 - 1M	300 - 1.1M	200V	400V	
				±200	10 - 294	1 - 294	1 - 270 1.2M - 10M			
	1W	—	105°C	±100	300 - 1M	300 - 1M	300 - 1.1M			
				±200	10 - 294	1 - 294	1 - 270 1.2M - 10M			
2E	0.5W	70°C	125°C	±200	10 - 1M	1 - 1M	1 - 10M	200V	400V	
	1.5W	—	105°C							

Parentheses indicate EIA package size codes. Rated voltage = $\sqrt{\text{Power rating} \times \text{resistance value or max. working voltage, whichever is lower}}$. ^{*1} Rated power derating applies only if permitted Terminal Part Temp is not exceeded. ^{*2} Cold T.C.R. (-55°C ~ +25°C) is $+150 \times 10^{-6}/\text{K}$. ^{*3} Applies when power rating is 0.4W or lower. Please contact KOA Speer for how to handle a specific surge/pulse. If any questions should 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 on the terminal part temperature" in the beginning of the catalog.

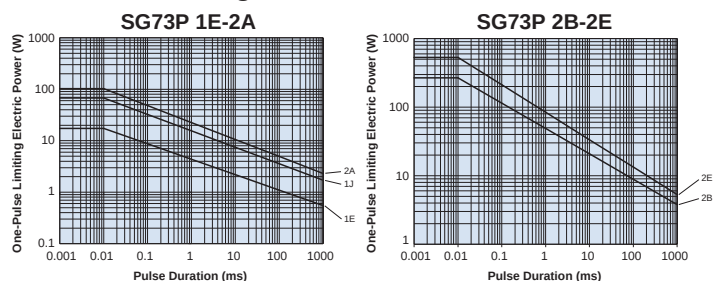
environmental applications

Temperature Rise



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



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)		Test Method						
	Limit	Typical							
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%	±0.5%	Overload for 5 seconds						
			Type	1E	1EW	1J	2A	2B	2E
			Overload	1.25W	1.25W	2.063W	2W(1.6W*)	3W	4W
Resistance to Solder Heat	±1%	±0.75%	260°C ± 5°C, 10 seconds ± 1 second						
Rapid Change of Temperature	±0.5%: Characteristic (Nil) Standard ±1%: Characteristic (A) Heat Shock Resistance	±0.3%: Characteristic (Nil) Standard ±0.5%: Characteristic (A) Heat Shock Resistance	Characteristic (Nil) Standard: -55°C (30 min.)/+125°C (30 min.) 100 cycles Characteristic (A) Heat Shock Resistance: -55°C (30 min.)/+125°C (30 min.) 1000 cycles						
Moisture Resistance	±3%	±0.75%	40°C ± 2°C, 90%~95%RH, 1000 hours; 1.5 hr ON, 0.5 hr OFF cycle						
Endurance at 70°C	±3%	±0.75%	70°C ± 2°C, 1000 hours, 1.5 hr ON, 0.5 hr OFF cycle						
High Temperature Exposure	±1%	±0.3%	+155°C, 1000 hours						

Additional environmental applications can also be found at www.koaspeer.com

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