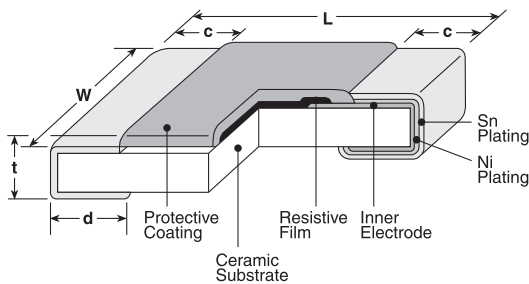


### features

- Excellent anti-sulfuration characteristic due to using high sulfuration-proof inner top electrode material
- Superior to RK73 series chip resistors in pulse withstanding voltage and high power
- SG73P (for pulse) are able to select resistance tolerance is available from  $\pm 0.5\%$
- 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 Tested

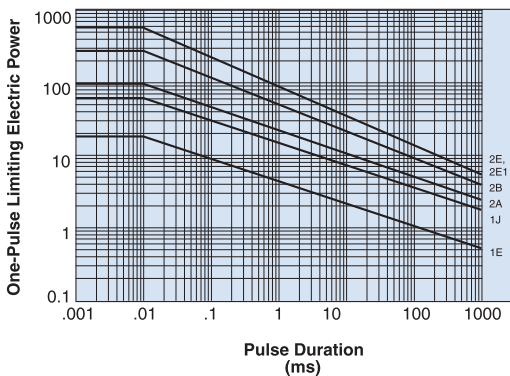


### dimensions and construction



Type (Inch Size Code)	Dimensions inches (mm)				
	L	W	c	d	t
<b>SG73P 1E (0402)</b>	.039 <sup>+0.004</sup> <sub>-.002</sub> (1.0 <sup>+0.1</sup> <sub>-.05</sub> )	.020 $\pm$ .002 (0.5 $\pm$ 0.05)	.006 $\pm$ .004 (0.15 $\pm$ 0.1)	.010 <sup>+0.002</sup> <sub>-.004</sub> (0.25 <sup>+0.05</sup> <sub>-.1</sub> )	.014 $\pm$ .002 (0.35 $\pm$ 0.05)
<b>SG73P 1J (0603)</b>	.063 $\pm$ .008 (1.6 $\pm$ 0.2)	.031 $\pm$ .004 (0.8 $\pm$ 0.1)	.012 $\pm$ .004 (0.3 $\pm$ 0.1)	.012 $\pm$ .004 (0.3 $\pm$ 0.1)	.018 $\pm$ .004 (0.45 $\pm$ 0.1)
<b>SG73P 2A (0805)</b>	.079 $\pm$ .008 (2.0 $\pm$ 0.2)	.049 $\pm$ .004 (1.25 $\pm$ 0.1)	.012 <sup>+0.008</sup> <sub>-.004</sub> (0.3 <sup>+0.2</sup> <sub>-.1</sub> )	.012 <sup>+0.008</sup> <sub>-.004</sub> (0.3 <sup>+0.2</sup> <sub>-.1</sub> )	.020 $\pm$ .004 (0.5 $\pm$ 0.1)
<b>SG73P 2B (1206)</b>	.126 $\pm$ .008 (3.2 $\pm$ 0.2)	.063 $\pm$ .008 (1.6 $\pm$ 0.2)	.016 <sup>+0.008</sup> <sub>-.004</sub> (0.4 <sup>+0.2</sup> <sub>-.1</sub> )	.016 <sup>+0.008</sup> <sub>-.004</sub> (0.4 <sup>+0.2</sup> <sub>-.1</sub> )	.024 $\pm$ .004 (0.6 $\pm$ 0.1)
<b>SG73P 2E SG73P 2E1 (1210)</b>		.102 $\pm$ .008 (2.6 $\pm$ 0.2)			

### One-Pulse Limiting Electric Power



The maximum applicable voltage is equal to the max. overload voltage. Please contact factory for the resistance characteristics of continuous applied pulse.

### ordering information

<b>SG73P</b>	<b>2A</b>	<b>R</b>	<b>T</b>	<b>TD</b>	<b>103</b>	<b>J</b>
<b>Type</b>	<b>Power Rating</b>	<b>Characteristic</b>	<b>Termination Material</b>	<b>Packaging</b>	<b>Nominal Resistance</b>	<b>Resistance Tolerance</b>
SG73P	1E 1J 2A 2B 2E1	R: Anti-Sulfur	T: Sn	TP: 0402, 0603, 0805: 7" 2mm pitch punch paper TD: 0603, 0805, 1206, 1210: 7" 4mm pitch punched paper TE: 0805, 1206, 1210: 7" 4mm embossed plastic For further information on packaging, please refer to Appendix A	$\pm 0.5\%$ , $\pm 1\%$ : 3 significant figures + 1 multiplier $\pm 2\%$ , $\pm 5\%$ : 2 significant figures + 1 multiplier "R" indicates decimal on value $< 10\Omega$	D: $\pm 0.5\%$ F: $\pm 1\%$ G: $\pm 2\%$ J: $\pm 5\%$

## endured pulse power flat chip resistors (anti-surge, anti-sulfuration)

### applications and ratings

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
					D: ±0.5% E-24, E-96	F: ±1% E-24, E-96	G: ±2% E-24	J: ±5% E-24			
SG73P 1E	0.125W 0.2W* <sup>2</sup>	70°C	125°C	±200	100Ω - 1MΩ	10Ω - 1MΩ	10Ω - 10MΩ	1Ω - 10MΩ	75V	100V	-55°C to +155°C
SG73P 1J	0.2W 0.33W* <sup>2</sup>		135°C						±100* <sup>1</sup>	150V	
SG73P 2A	0.25W 0.5W* <sup>2</sup>	70°C	125°C	±200					400V	600V (800V)* <sup>3</sup>	
SG73P 2B	0.33W 0.75W* <sup>2</sup>		125°C						100°C	200V	
SG73P 2E	0.5W 0.75W* <sup>2</sup>	70°C	125°C	±200					200V		
SG73P 2E1	1.0W* <sup>2</sup>		110°C							95°C	

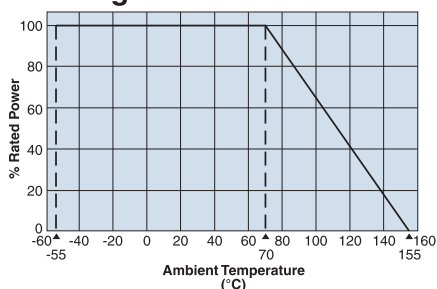
\*<sup>1</sup> Cold T.C.R. (-55°C ~ +25°C) is  $\pm 150 \times 10^{-6}/K$  \*<sup>2</sup> If you want to use the rated power of \*<sup>2</sup>, \*<sup>3</sup> please reference below. \*<sup>3</sup> Applies when power rating is 0.4W or lower.

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

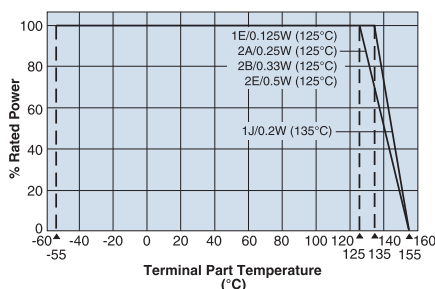
If any questions should arise whether to use the "Rated Ambient Temperature" or the "Rated Terminal Part Temperature," please give priority to the "Rated Terminal Part Temperature." Prior to use and for more details refer to "Introduction of the derating curves on the terminal part temperature" in the beginning of the catalog. Also, contact KOA prior to usage and for the max. working voltage and max. overload voltage.

### environmental applications

#### Derating Curve



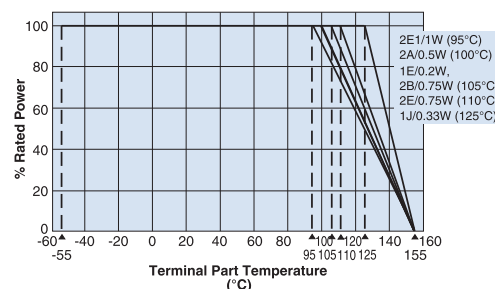
For resistors operated at an ambient temperature of 70°C or above, a power rating shall be derated in accordance with the derating curve.



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 derating curve.

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

\*<sup>2</sup>, \*<sup>3</sup> If you want to use the rated power of \*<sup>2</sup>, \*<sup>3</sup> please use the derating curve based on the terminal part temperature on the right hand side.



#### Performance Characteristics

Parameter	Requirement $\Delta R \pm(\%+0.1\Omega)$		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%	Rated Voltage x 2.5 for 5 seconds (2A: 0.4W, 0.5W; 2B: 0.75W; 2E: 0.75W; 2E1: 1W x 2 for 5 seconds)
Resistance to Solder Heat	±1%	±0.75%	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	±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
Sulfuration Test	±5%	±0.2%	Soaked in industrial oil with 3.5% sulfur concentration 105°C ± 3°C, 500 hours

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

Additional environmental applications can also be found at [www.koaspeer.com](http://www.koaspeer.com)

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

3/26/20