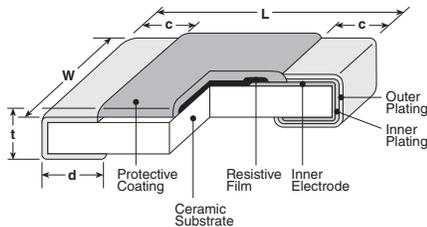


### features

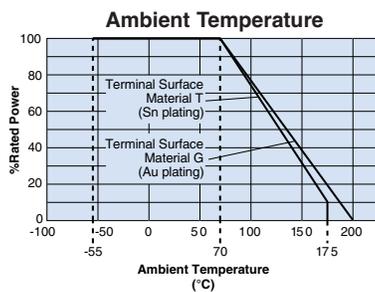
- High heat resistance that can be used even at high temperatures of 155°C or higher. The maximum operating temperature of Sn plating products compatible with solder mounting is 175°C, and Au plating products compatible with conductive glue mounting is 200°C.
- Excellent heat resistance and weather resistance are ensured by the use of metal glaze thick film
- High stability and high reliability with the triple-layer structure of electrode
- Superior to RK73 series chip resistors pulse withstanding voltage and high power
- Applicable to various kinds of automatic mounters for taping, etc
- Products 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



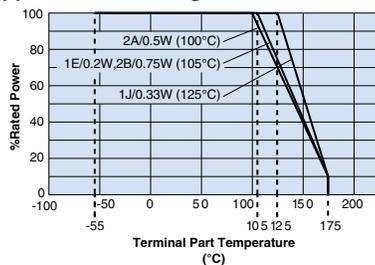
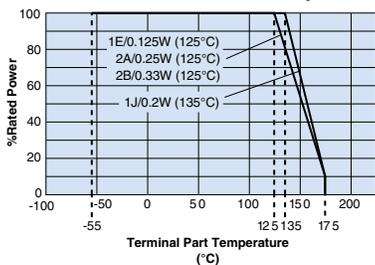
### Derating Curve



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

Type (Inch Size Code)	Dimensions inches (mm)				
	L	W	c	d	t
<b>1E (0402)</b>	.039 <sup>+0.003</sup> <sub>-.002</sub> (1.0 <sup>+0.1</sup> <sub>-0.05</sub> )	.020±.002 (0.5±0.05)	.008±.006 (0.2±0.15)	.010 <sup>+0.002</sup> <sub>-.004</sub> (0.25 <sup>+0.05</sup> <sub>-0.1</sub> )	.014±.002 (0.35±0.05)
<b>1E AT (0402)</b>				.012±.006 (0.3±0.15)	
<b>1J (0603)</b>	.063±.008 (1.6±0.2)	.031±.004 (0.8±0.1)	.012±.006 (0.3±0.15)	.012±.004 (0.3±0.1)	.018±.004 (0.45±0.1)
<b>1J AT (0603)</b>				.014±.006 (0.35±0.15)	
<b>2A (0805)</b>	.079±.008 (2.0±0.2)	.049±.004 (1.25±0.1)	.016±.010 (0.4±0.25)	.012 <sup>+0.008</sup> <sub>-.004</sub> (0.3 <sup>+0.2</sup> <sub>-0.1</sub> )	.02±.004 (0.5±0.1)
<b>2A AT (0805)</b>				.018±.010 (0.45±0.25)	
<b>2B (1206)</b>	.126±.008 (3.2±0.2)	.063±.008 (1.6±0.2)	.022±.014 (0.55±0.35)	.016 <sup>+0.008</sup> <sub>-.004</sub> (0.4 <sup>+0.2</sup> <sub>-0.1</sub> )	.024±.004 (0.6±0.1)
<b>2B AT (1206)</b>				.031±.008 (0.8±0.2)	

### Terminal Part Temperature Applied to Sn Plating Products



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. If you want to use at the rated power of \*1, please use the derating curves based on the terminal part temperature of right side. Please refer to "Introduction of the derating curves based on the terminal part temperature" in the beginning of our catalog before use.

### ordering information

<b>HSG73P</b>	<b>2B</b>		<b>G</b>	<b>TD</b>	<b>103</b>	<b>J</b>
<b>Type</b>	<b>Power Rating</b>	<b>Characteristic</b>	<b>Terminal Surface Material</b>	<b>Packaging</b>	<b>Nominal Resistance</b>	<b>Tolerance</b>
	1E: 0.125W, 0.2W 1J: 0.2W, 0.33W 2A: 0.25W, 0.5W 2B: 0.33W, 0.75W	Nil: Standard A: Heat Shock Resistance*1	T: Sn G: Au	TP: 2mm pitch punch paper TD: 4mm pitch punched paper For further information on packaging, please refer to Appendix A	F: 4 digits J: 3 digits	F: ±1% J: ±5%

\*1 With type A only T is available as the terminal surface material.

Contact us when you have control request for environmental hazardous material other than the substance specified by EU RoHS.

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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### applications and ratings

Part Designation	Power Rating	Rated Ambient Temp.		Rated Term. Part Temp.		T.C.R. (x10 <sup>-6</sup> /K) Max.	Resistance Range		Maximum Working Voltage	Maximum Overload Voltage
		Term. Surf. Material: T (Sn plating)	Term. Surf. Material: G (Au plating)	Term. Surf. Material: T (Sn plating)	Term. Surf. Material: G (Au plating)		F: ±1% E24	J: ±5% E24		
HSG73P1E (0402)	0.125W	70°C	70°C	125°C	—	±200	10Ω~1MΩ	1Ω~10MΩ	75V	100V
	0.2W <sup>1</sup>	70°C	—	105°C	—					
HSG73P1J (0603)	0.2W	70°C	70°C	135°C	—	±200	10Ω~1MΩ	1Ω~10MΩ	150V	200V
	0.33W <sup>1</sup>	70°C	—	125°C	—					
HSG73P2A (0805)	0.25W	70°C	70°C	125°C	—	±200	10Ω~1MΩ	1Ω~10MΩ	200V	400V
	0.5W <sup>1</sup>	70°C	—	100°C	—					
HSG73P2B (1206)	0.33W	70°C	70°C	125°C	—	±200	10Ω~1MΩ	1Ω~10MΩ	200V	400V
	0.75W <sup>1</sup>	70°C	—	105°C	—					

Operating Temperature Range : -55°C ~ +175°C (Terminal Surface Material: T), -55°C ~ +200°C (Terminal Surface Material: G)

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

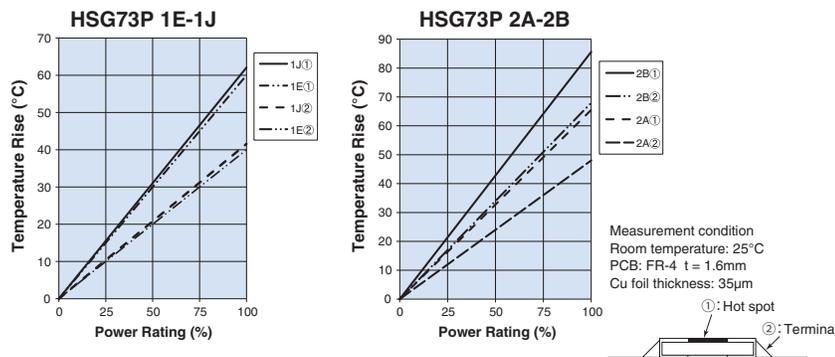
\*1 If you use at the rated power, please keep the condition that the terminal of the resistor is below the rated terminal part temperature.

Please refer to the derating curves based on the terminal temperature.

If any questions arise whether to use the "Rated Ambient Temperature" or the "Rated Terminal Part Temperature" in your usage conditions, please give priority to the "Rated Terminal Part Temperature"

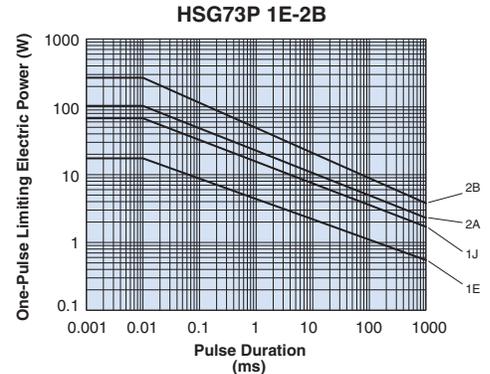
### environmental applications

#### 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.

### 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.	—	Characteristic (Nil) Standard: +25°C/-55°C, +25°C/+125°C Characteristic (A) Heat shock resistance: +25°C/-55°C, +25°C/+175°C
Overload (Short time)	±2%	±0.5%	Rated Voltage x 2.5 for 5 seconds (2A: 0.5W; 2B: 0.75W Rated Voltage x 2 for 5 seconds)
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.)/+175°C (30 min.) 1000 cycles
Moisture Resistance	±2%: 1J, 2A, 2B ±3%: 1E	±0.75%: 1J, 2A, 2B ±1%: 1E	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%: 1E	±0.75%: 1J, 2A, 2B ±1%: 1E	70°C ± 2°C, 1000 hours, 1.5 hr ON, 0.5 hr OFF cycle
High Temperature Exposure	±2%	±0.5%	+200°C, 1000 hours (Terminal Surface Material [G]: Au plating products)
Endurance at 175°C	±1%	±0.3%	+175°C, 1000 hours, Power Rating×10% (Terminal Surface Material [T]: Sn plating products)

For Surface Temperature Rise Graph see Environmental Applications. 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.

11/09/22