

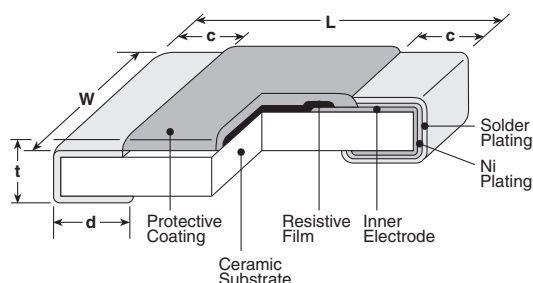
SG73P - endured pulse power thick film chip resistor
SG73S - endured surge voltage thick film chip resistor



features

- Superior to RK73B/RK73H series in surge/pulse withstanding voltage
- SG73P: Pulse withstanding; down to $\pm 0.5\%$ tolerance
 SG73S: ESD withstanding; down to $\pm 0.5\%$ tolerance
- Marking: SG73P: Black three-digit on green protective coating
 SG73S: White three-digit on green protective coating
 SG73P/S 1E, 1J: no marking
 SG73P/S 1E: Black coating
- 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: 0402(1E), 0603(1J), 0805(2A), 1206(2B), 1210(2E)

dimensions and construction



Type (Inch Size Code)	Dimensions inches (mm)				
	L	W	c	d	t
SG73P1E, SG73S1E (0402)	.039 $\begin{smallmatrix} +.004 \\ -.002 \end{smallmatrix}$ (1.0 $\begin{smallmatrix} +.01 \\ -.005 \end{smallmatrix}$)	.02 \pm .002 (0.5 \pm 0.05)	.006 \pm .004 (0.15 \pm 0.1)	.010 $\begin{smallmatrix} +.002 \\ -.004 \\ -.01 \end{smallmatrix}$ (0.25 $\begin{smallmatrix} +.005 \\ -.01 \end{smallmatrix}$)	.014 \pm .002 (0.35 \pm 0.05)
SG73P1J SG73S1J (0603)	.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)
SG73P2A, SG73S2A (0805)	.079 \pm .008 (2.0 \pm 0.2)	.049 \pm .004 (1.25 \pm 0.1)	.012 $\begin{smallmatrix} +.008 \\ -.004 \end{smallmatrix}$ (0.3 $\begin{smallmatrix} +.02 \\ -.01 \end{smallmatrix}$)	.012 $\begin{smallmatrix} +.008 \\ -.004 \end{smallmatrix}$ (0.3 $\begin{smallmatrix} +.02 \\ -.01 \end{smallmatrix}$)	.02 \pm .004 (0.5 \pm 0.1)
SG73P2B, SG73S2B (1206)	.126 \pm .008 (3.2 \pm 0.2)	.063 \pm .008 (1.6 \pm 0.2)	.016 $\begin{smallmatrix} +.008 \\ -.004 \end{smallmatrix}$ (0.4 $\begin{smallmatrix} +.02 \\ -.01 \end{smallmatrix}$)	.016 $\begin{smallmatrix} +.008 \\ -.004 \end{smallmatrix}$ (0.4 $\begin{smallmatrix} +.02 \\ -.01 \end{smallmatrix}$)	.024 \pm .004 (0.6 \pm 0.1)
SG73P2E, SG73S2E (1210)		.102 \pm .008 (2.6 \pm 0.2)			

New Part #

SG73S	2B	T	TD	102	K
Type	Size	Termination Material	Packaging	Nominal Resistance	Tolerance
SG73P SG73S	1E 1J 2A 2B 2E	T: Sn	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: 7" embossed plastic TED: 0805, 1206, 1210: 10" embossed plastic For further information on packaging, please refer to Appendix A	$\pm 0.5\%$, $\pm 1\%$: 3 significant figures + 1 multiplier "R" indicates decimal on value <100 Ω $\pm 2\%$, $\pm 5\%$: 2 significant figures + 1 multiplier "R" indicates decimal on value <10 Ω	D: $\pm 0.5\%$ F: $\pm 1\%$ G: $\pm 2\%$ J: $\pm 5\%$

applications and ratings

Part Designation	Power Rating @ 70°C	Rated Ambient Temp.	Rated Terminal Part Temp.	T.C.R. (ppm/°C) Max.	Resistance Range			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%)			
SG73P1E SG73S1E (0402)	0.125W	70°C	125°C	±200	10Ω - 1MΩ	1Ω - 1MΩ	1Ω - 10MΩ	50V	100V	
	0.2W* ²	—	105°C							
SG73P1J SG73S1J (0603)	0.2W	70°C	125°C	±100*	10Ω - 1MΩ	1Ω - 1MΩ	1Ω - 10MΩ	150V	200V	-55°C to +155°C
	0.25W* ²	—	100°C							
SG73S2A SG73P2A (0805)	0.25W	70°C	125°C	±200	10Ω - 1MΩ	1Ω - 1MΩ	1Ω - 10MΩ	200V	400V	
	0.5W* ²	—	100°C							
SG73S2B SG73P2B (1206)	0.33W	70°C	125°C	±200	10Ω - 1MΩ	1Ω - 1MΩ	1Ω - 10MΩ	200V	400V	
	0.5W* ²	—	120°C							
SG73S2E SG73P2E (1210)	0.5W	70°C	125°C	±200	10Ω - 1MΩ	1Ω - 1MΩ	1Ω - 10MΩ			

Parentheses indicate EIA package size codes.

* Cold T.C.R. of 1.02mΩ ~ +150 x 10⁻⁶/K

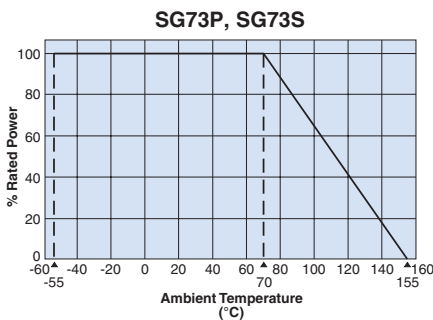
Rated voltage = √Power rating x resistance value or max. working voltage, whichever is lower

Please contact KOA Speer for how to handle a specific surge/pulse

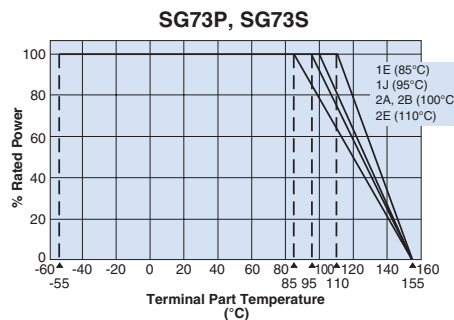
If any questions should arise whether to use the "Rated Ambient Temperature" or the "Rated Terminal Part Temperature," please give priority to the "Rated Terminal Part Temperature." Prior to use and for more details refer to "Introduction of the derating curves on the terminal part temperature" in the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

environmental applications

Derating Curve



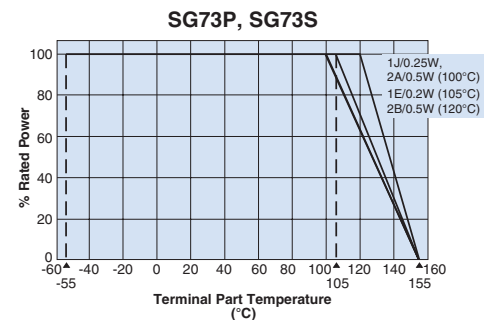
For resistors operated at an ambient temperature of 70°C or above, a power rating shall be derated in accordance with the derating curve.



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.

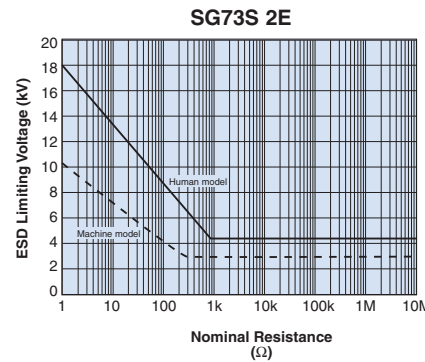
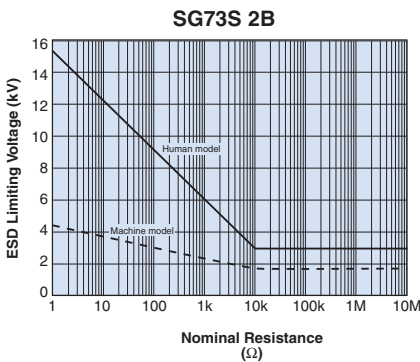
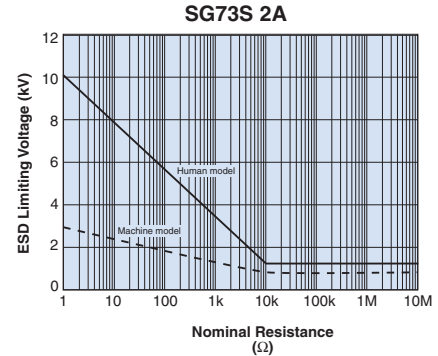
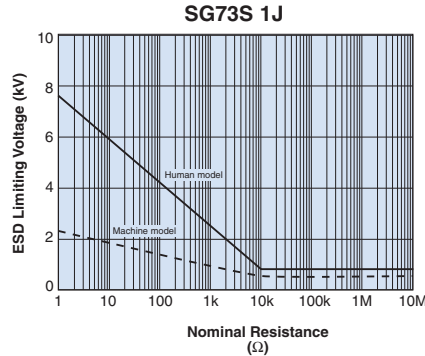
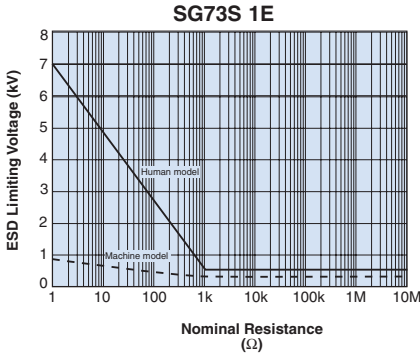
Please refer to "Introduction of the derating curve based on the terminal part temperature" on the beginning of our catalog before use.

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

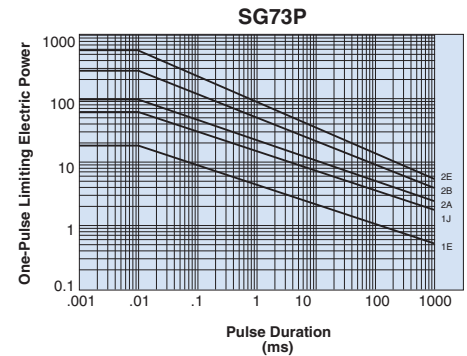


environmental applications

ESD Limiting Voltage



One-Pulse Limiting Electric Power



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
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