KOA SPEER ELECTRONICS, INC.

SG73-RT

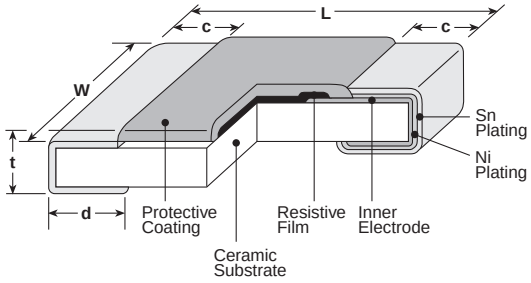
surge current flat chip resistors (anti-surge, anti-sulfuration)

EU RoHS COMPLIANT

features

- Excellent anti-sulfuration characteristic due to using high sulfuration-proof inner top electrode material/pulse
- Superior to RK73 series chip resistors in pulse withstanding voltage
- 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
SG73 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)
SG73 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)
SG73 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)
SG73 2E (1210)		.102±.008 (2.6±0.2)			
SG73 W2H (2010)	.197±.008 (5.0±0.2)	.098±.008 (2.5±0.2)		.026±.006 (0.65±0.15)	
SG73 W3A (2512)	.248±.008 (6.3±0.2)	.122±.008 (3.1±0.2)			

ordering information

SG73	2A	R	T	TD	103	K
Type	Power Rating	Characteristic	Termination Material	Packaging	Nominal Resistance	Resistance Tolerance
SG73	1J 2A 2B 2E W2H W3A	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, 2010 & 2512: 7" 4mm embossed plastic For further information on packaging, please refer to Appendix A	±10%, ±20%: 2 significant figures + 1 multiplier "R" indicates decimal on value <10Ω	K: ±10% M: ±20%

11/30/22

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applications and ratings

Part Designation	Power Rating	Rated Ambient Temp.	Rated Terminal Part Temp.	T.C.R. (ppm/°C) Max.	Resistance Range K: ±10% M: ±20% E-12	Maximum Working Voltage	Maximum Overload Voltage	Operating Temp. Range
SG73 1J (0603)	0.1W	70°C	125°C	±400	1Ω - 8.2Ω	50V	100V	-55°C to +155°C
				±200	10Ω - 1MΩ			
SG73 2A (0805)	0.125W	70°C	125°C	±400	1Ω - 8.2Ω	150V	200V	
				±200	10Ω - 1MΩ			
SG73 2B (1206)	0.33W	70°C	125°C	±400	1Ω - 8.2Ω	200V	400V	
				±200	10Ω - 1MΩ			
SG73 2E (1210)	0.50W	70°C	125°C	±400	1Ω - 8.2Ω			
				±200	10Ω - 1MΩ			
SG73 W2H (2010)	0.75W	70°C	125°C	±400	1Ω - 8.2Ω			
				±200	10Ω - 1MΩ			
SG73 W3A (2512)	1W	70°C	125°C	±400	1Ω - 8.2Ω			
				±200	10Ω - 1MΩ			

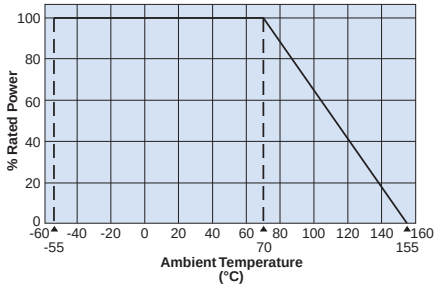
Rated voltage = $\sqrt{\text{Power rating x resistance value}}$ or max. working voltage, whichever is lower

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.

environmental applications

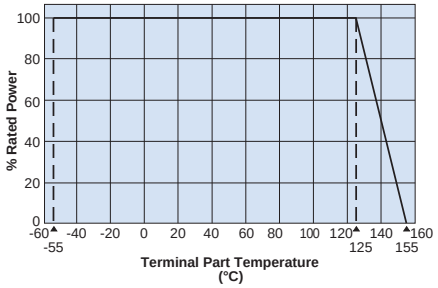
Derating Curve

Ambient Temperature



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

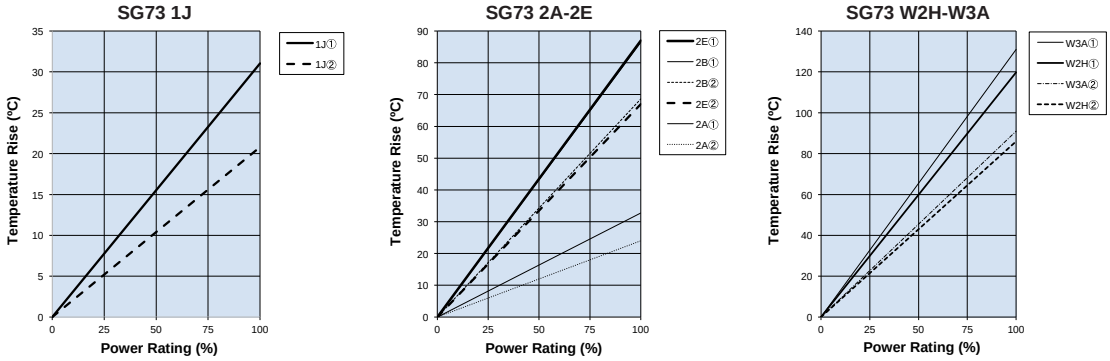
Terminal Part Temperature



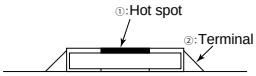
For resistors operated at a terminal part temperature of described for each size or above, a power rating shall be derated in accordance with the derating curve.

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

Temperature Rise

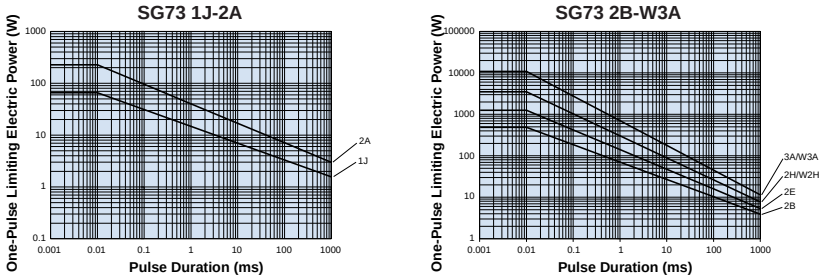


Regarding the temperature rise, the value of the temperature varies per conditions and board for use since the temperature is measured under our measuring conditions.



Measurement condition
Room temperature: 25°C
PCB: FR-4t = 1.6mm
Cu foil thickness: 35µm

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) 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%	±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 or rated terminal part temperature ± 2°C 1000h 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

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