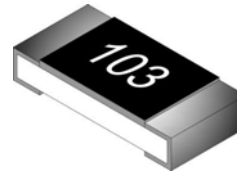


## RST series Anti-Sulfur Chip Resistor



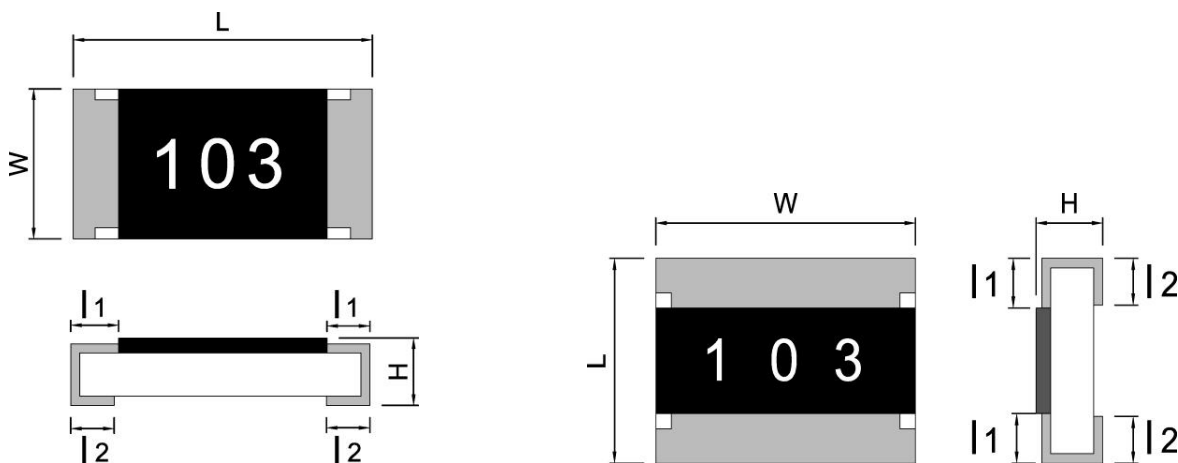
### ◆ Features

- » Small Size and Light Weight
- » Reliability, High Quality
- » Excellent Resistance to Vulcanization (ASTM-B-809-95 and EIA-977 Specification)

### ◆ Applications

- » Industrial Control, System Sensor, Netcom Station
- » Navigation Equipment
- » Measuring Instrument
- » Telecommunication Equipment, Railway Semaphore System

### ◆ Dimension



RST0402 / RST0603 / RST0805 /  
RST1206 / RST1210 / RST1812 / RST2010 /  
RST2512

RST1218

Size	L	W	H	l <sub>1</sub>	l <sub>2</sub>
RST0402	1.00 ± 0.10	0.50 ± 0.05	0.30 ± 0.05	0.15 ± 0.10	0.20 ± 0.10
RST0603	1.60 ± 0.20	0.80 ± 0.15	0.40 ± 0.10	0.30 ± 0.20	0.30 ± 0.10
RST0805	2.00 ± 0.20	1.25 ± 0.15	0.50 ± 0.15	0.30 ± 0.15	0.40 ± 0.15
RST1206	3.05 ± 0.10	1.60 ± 0.20	0.55 ± 0.15	0.40 ± 0.20	0.50 ± 0.20
RST1210	3.05 ± 0.10	2.50 ± 0.20	0.55 ± 0.15	0.50 ± 0.20	0.50 ± 0.20
RST1218	3.10 ± 0.10	4.60 ± 0.10	0.55 ± 0.05	0.40 ± 0.20	0.50 ± 0.20
RST1812	4.50 ± 0.10	3.10 ± 0.20	0.55 ± 0.05	0.55 ± 0.20	0.70 ± 0.20
RST2010	5.00 ± 0.20	2.50 ± 0.20	0.55 ± 0.10	0.60 ± 0.20	0.60 ± 0.20
RST2512	6.30 ± 0.20	3.20 ± 0.20	0.55 ± 0.10	0.60 ± 0.20	0.60 ± 0.20

Unit: mm

### Standard Electrical Specification

Item Type	Rated Power at 70°C		Max Working Voltage	Max Overload Voltage	T.C.R. (PPM/°C)	Resistance Range		
	Standard	High				D(±0.5%)	F(±1%)	J(±5%)
RST0402	0.063 W	0.1 W	50V	100V	±400	-	1Ω~9.9Ω	1Ω~9.9Ω
					±100	-	10Ω~990Ω	10Ω~990Ω
					±100	10Ω~1MΩ	1KΩ~10MΩ	1KΩ~10MΩ
RST0603	0.1 W	0.125 W	75V	150V	±400	-	1Ω~9.9Ω	1Ω~9.9Ω
					±100	10Ω~1MΩ	10Ω~10MΩ	10Ω~10MΩ
RST0805	0.125 W	0.25 W	150V	300V	±400	-	1Ω~9.9Ω	1Ω~9.9Ω
					±100	10Ω~1MΩ	10Ω~10MΩ	10Ω~10MΩ
RST1206	0.25 W	0.5 W	200V	400V	±400	-	1Ω~9.9Ω	1Ω~9.9Ω
					±100	10Ω~1MΩ	10Ω~10MΩ	10Ω~10MΩ
RST1210	0.5 W	0.66 W	200V	400V	±400	-	1Ω~9.9Ω	1Ω~9.9Ω
					±100	10Ω~1MΩ	10Ω~10MΩ	10Ω~10MΩ
RST1218	1 W	-	200V	400V	±400	-	1Ω~9.9Ω	1Ω~9.9Ω
					±100	10Ω~1MΩ	10Ω~10MΩ	10Ω~10MΩ
RST1812	0.75 W	1 W	200V	400V	±400	-	1Ω~9.9Ω	1Ω~9.9Ω
					±100	10Ω~1MΩ	10Ω~10MΩ	10Ω~10MΩ
RST2010	0.75 W	1 W	200V	400V	±400	-	1Ω~9.9Ω	1Ω~9.9Ω
					±100	10Ω~1MΩ	10Ω~10MΩ	10Ω~10MΩ
RST2512	1 W	-	200V	400V	±400	-	1Ω~9.9Ω	1Ω~9.9Ω
					±100	10Ω~1MΩ	10Ω~10MΩ	10Ω~10MΩ

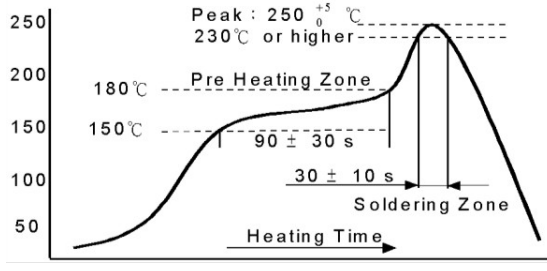
Operating Temperature Range : -55°C~+155°C

Type	0402	0603	0805	1206	1210	1218	1812	2010	2512
Jumper Resistance Value	50mΩ Max								
Jumper Rated Current	1A				2A				

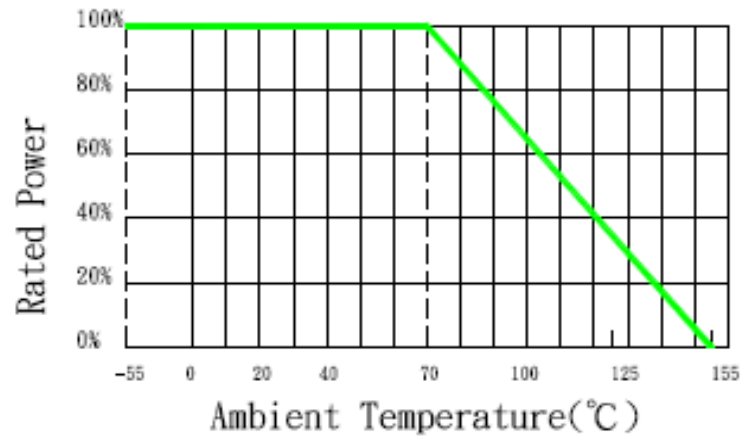
### ◆ Part Number

<u>RST</u>	<u>1206</u>	<u>F</u>	<u>100K</u>	<u>B</u>
Type	Size	Tolerance	R VALUE	Optional
RST	0402	J=5%	1Ω= 1R	Z = 60°C Standard watt
	0603	F=1%	1KΩ= 1K	A=60°C High power
	0805	D=0.5%	2.2MΩ=2M2	B=105°C Standard watt (105°C with AEC-Q200 compatible)
	1206			C=105°C High power (105°C with AEC-Q200 compatible)
	1210			
	1218			
	1812			
	2010			
	2512			

## ◆ Reliability Test and Requirement

Test Item	Test Method	Procedure	Requirements
Temperature Coefficient of Resistance (T.C.R)	JIS C 5201-1 clause 4.8	-55°C or +155°C, 25°C is the reference temperature	Refer to Ratings
Short Time Overload	JIS C 5201-1 clause 4.13	General : 2.5 times RCWV or Max. Overload voltage whichever is less for 5 seconds. High Power : 2.5 times RCWV or Max. Overload voltage whichever is less for 2 seconds.	0.5%、1% : $\pm(1.0\%+0.05\Omega)$ 5% : $\pm(2.0\%+0.10\Omega)$
IR Reflow	Sony SS-00254	 <p>The graph shows a temperature profile for IR reflow. The y-axis is temperature in °C (50 to 250) and the x-axis is Heating Time. Key points include: Pre Heating Zone (150°C to 180°C), a dwell of 90 ± 30 s at 180°C, a peak of 250 ± 5°C (230°C or higher), and a Soldering Zone (30 ± 10 s) at the peak.</p>	0.5%、1% : $\pm(1.0\%+0.05\Omega)$ 5% : $\pm(1.0\%+0.05\Omega)$
Leaching	Sony SS-00254-9	260±5°C for 30 seconds.	>95% Coverage
Soldering Heat	JIS C 5201-1 clause 4.18	260±5°C for 10 seconds.	0.5%、1% : $\pm(0.5\%+0.05\Omega)$ 5% : $\pm(1.0\%+0.05\Omega)$
Temperature Cycling	JIS C 5201-1 clause 4.19	-55°C to +155°C, 5 cycles	0.5%、1% : $\pm(0.5\%+0.05\Omega)$ 5% : $\pm(1.0\%+0.10\Omega)$
Electric Iron	Sony SS-00254-5	Preheating temperature : 350±10°C Electric iron preheating time : 3+1/-0 sec	0.5%、1% : $\pm(1.0\%+0.05\Omega)$ 5% : $\pm(1.0\%+0.05\Omega)$
Resistance to Solvent	JIS C 5201-1 clause 4.29	The tested resistor be immersed into isopropyl alcohol of 20~25°C for 60 secs. Then the resistor is left in the room for 48 hrs.	0.5%、1% : $\pm(0.5\%+0.05\Omega)$ 5% : $\pm(0.5\%+0.05\Omega)$
Load Life in Humidity	JIS C 5201-1 clause 4.24	40±2°C, 90~95% R.H. RCWV or Max. working voltage whichever is less for 1000 hrs with 1.5 hrs "ON" and 0.5 hr "OFF" .	0.5%、1% : $\pm(1.0\%+0.05\Omega)$ 5% : $\pm(2.0\%+0.05\Omega)$
Load Life (Endurance)	JIS C 5201-1 clause 4.25	70±2°C, RCWV or Max. working voltage whichever is less for 1000 hrs with 1.5 hrs "ON" and 0.5 hr "OFF" .	0.5%、1% : $\pm(1.0\%+0.05\Omega)$ 5% : $\pm(3.0\%+0.10\Omega)$
Insulation Resistance	JIS C 5201-1 clause 4.6	100V for 1 minute.	≥ 10GΩ
Terminal Bending Strength	JIS C 5201-1 clause 4.33	Bending once for 5 seconds D : 0201、0402、0603、0805=5mm 1206、1210、1812=3mm 1218、2010、2512=2mm	0.5%、1% : $\pm(1.0\%+0.05\Omega)$ 5% : $\pm(1.0\%+0.05\Omega)$
Sulfur Test	ASTM-B-809-95 EIA-977	60±2°C, no rating power for 1000 hrs	△R : $\pm(1.0\%+0.05\Omega)$
		105±2°C, no rating power for 1000 hrs	△R : $\pm(4.0\%+0.05\Omega)$

### ◆ Power Derating Curve



Power rating or current rating is in the case based on continuous full-load at ambient temperature of 70°C. For operation at ambient temperature in excess of 70°C, the load should be derated in accordance with figure of derating Curve.

### ◆ Voltage Rating or Current Rating

Range:  $\geq 1\Omega$

Rated Voltage: The resistor shall have a DC continuous working voltage or a RMS AC continuous working voltage at commercial-line frequency and wave form corresponding to the power rating, as determined formula as following:

$$E = \sqrt{P \times R}$$

E=Rated voltage (V)  
 P=Power rating (W)  
 R=Nominal resistance( $\Omega$ )