

# RVS series

## Safety Certified Thick Film High Voltage Chip Resistor

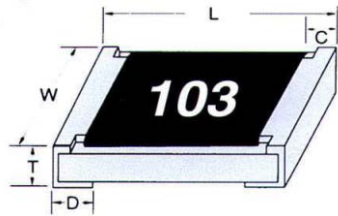
### ◆ Features

- » UL Certified.
- » Compatible with flow and reflow soldering
- » Suitable for lead free soldering
- » Voltage Coefficient Resistance (VCR)  $\leq \pm 300\text{ppm/V}$ .
- » Special material and design for high working voltage require.

### ◆ Application

- » Power supply
- » Automotive industry
- » Measurement instrument

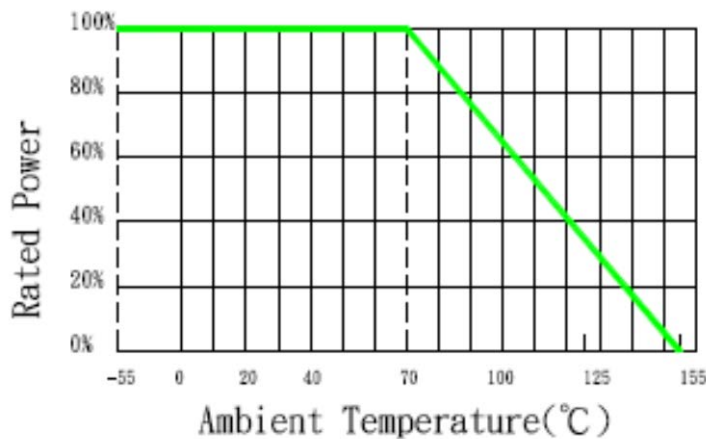
### ◆ Dimensions



Size	L	W	C	D	T
0603	1.60±0.10	0.80±0.10	0.30±0.20	0.30±0.20	0.45±0.10
0805	2.00±0.10	1.25±0.10	0.40±0.20	0.40±0.20	0.50±0.10
1206	3.10±0.10	1.60±0.10	0.50±0.20	0.50±0.20	0.55±0.10
2010	5.00±0.20	2.50±0.20	0.65±0.25	0.60±0.25	0.60±0.10
2512	6.40±0.20	3.20±0.20	0.65±0.25	0.90±0.25	0.60±0.15

Unit: mm

### ◆ Power Derating Curve



## ◆ Rating

Type	Power Rating at 70°C	Max. RCWV	Max. Overload Voltage	Resistance Tolerance (%)	Temperature Coefficient (ppm/°C)	Resistance Range	
						Min.	Max.
RVS0603	1/10W	200V	400V	±1%(F)	±100	100KΩ	10MΩ
				±5%(J)	±200	100KΩ	22MΩ
RVS0805	1/8W	400V	800V	±1%(F)	±100	100KΩ	10MΩ
				±5%(J)	±200	100KΩ	22MΩ
RVS1206	1/4W	800V	1600V	±1%(F)	±100	100KΩ	10MΩ
				±1%(F)	±200	11MΩ	22MΩ
				±5%(J)	±200	100KΩ	100MΩ
RVS2010	1/2W	2000V	3000V	±1%(F)	±100	100KΩ	10MΩ
				±1%(F)	±200	11MΩ	22MΩ
				±5%(J)	±200	100KΩ	100MΩ
RVS2512	1W	3000V	4000V	±1%(F)	±100	100KΩ	10MΩ
				±1%(F)	±200	11MΩ	22MΩ
				±5%(J)	±200	100KΩ	100MΩ

## ◆ Part Number

RVS	2010	J	100K
Type	Size	Tolerance	R Value
RVS	0603	F: ± 1%	2.2MΩ = 2M2
	0805	J: ± 5%	100KΩ = 100K
	1206		
	2010		
	2512		

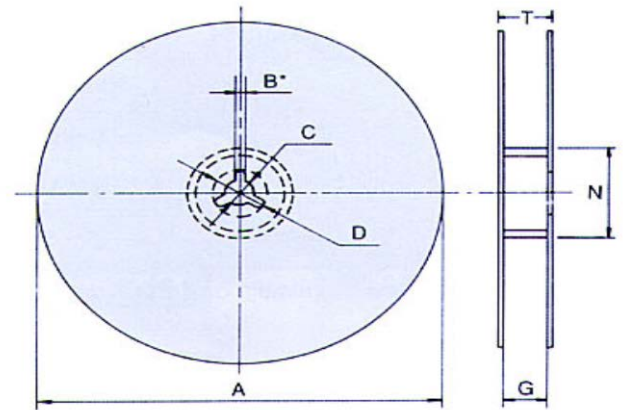
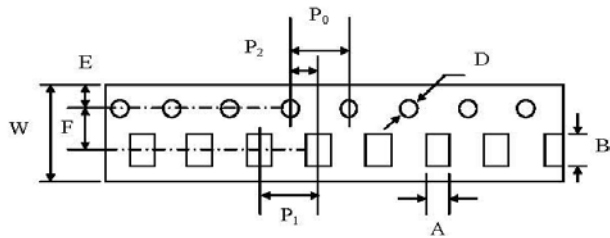
## ◆ Specification

### Specification and Test Method

TEST	SPECIFICATION	TEST METHOD
DC Resistance	F : ±1% ; J : ±5%	IEC 60115-1 / JIS C 5201-1 , Clause 4.5 Measure the resistance Value.
Short Time Overload	$\Delta R \leq \pm(1\% + 0.1\Omega)$ No mechanical damage	IEC 60115-1 / JIS C 5201-1, Clause 4.13 2 × Rated voltage or Max. Overload Voltage for 5 sec. measure resistance after 30 minutes
Solderability	Over 95% of termination must be covered with solder	IEC 60115-1/ JIS C5201-1, Clause 4.17 After immersing flux, dip in the 245±2°C molten solder bath for 3±0.5 sec.
Resistance to solder Heat	$\Delta R \leq \pm(1\% + 0.1\Omega)$ No mechanical damage	IEC 60115-1 / JIS C 5201-1 , Clause 4.18 With 260±5°C for 10 ± 1sec
Load Life Humidity	$\Delta R \leq \pm(5\% + 0.1\Omega)$	IEC 60115-1 / JIS C 5201-1 , Clause 4.24 Maintain the temperature of the resistor at 40±2°C and 90% ~ 95% R.H. with the rated voltage applied. Cycle ON for 1.5 hours and OFF for 0.5 hour for 1000+48/-0 hours. After 1 ~ 4 hours, measure the resistance value.
Temperature Coefficient of Resistance (TCR)	Refer to the rating table.	IEC 60115-1 / JIS C 5201-1 , Clause 4.8 Test temperature : 25°C (T1) ~ -55°C (T2) 25°C (T1) ~ +155°C (T2) $TCR(ppm/^{\circ}C) = \frac{R2 - R1}{R1} \times \frac{1}{T2 - T1} \times 10^6$ T1: 25°C T2: Test temperature R1: Resistance at reference temperature (T1) R2: Resistance at test temperature (T2)
Voltage Coefficient Of resistance (TCR)	$\leq \pm 300ppm/V$	JIS C 5202 5.3 Measuring Voltage 10V/100V
Load Life	5%: $\Delta R \leq \pm(5\% + 0.1\Omega)$ 1%: $\Delta R \leq \pm(1\% + 0.1\Omega)$	IEC 60115-1 / JIS C 5201-1 , Clause 4.25 Permanent resistance change after 1000+48/-0 hours (1.5 hours ON, 0.5hour OFF) at RCWV or Max. Keep the resistor at 70 ± 2°C ambient.
Temperature Cycle	$\Delta R \leq \pm(1\% + 0.05\Omega)$ No mechanical damage	IEC 60115-1 / JIS C 5201-1 , Clause 4.19 Repeat 5 cycles as follows -55°C (30min.) → +25°C (2~3min.) → +155°C (30min.) → +25°C (2~3min.)
Insulation Resistance	Between termination and coating must be over 1000MΩ	IEC 60115-1 / JIS C 5201-1 , Clause 4.6 Test voltage : 100±15V
Bending strength	$\Delta R \leq \pm(1\% + 0.05\Omega)$ No mechanical damage	IEC 60115-1 / JIS C 5201-1 , Clause 4.33 Resistance changes after bended on the 90mm PCB. Bend : 3mm for 0603, 0805 2mm for 1206, 2010, 2512

## ◆ Tape and Reel Package

Taping specs are according to EIA RS-481



Accumulated dimensional tolerance  $40\pm 0.2\text{mm}$

### Tape:

Size	A	B	W	F	E	P1	P2	P0	D
0603	$1.10\pm 0.20$	$1.90\pm 0.20$	$8.00\pm 0.30$	$3.50\pm 0.05$	$1.75\pm 0.10$	$4.00\pm 0.10$	$2.00\pm 0.05$	$4.00\pm 0.10$	$1.50+0.10/-0$
0805	$1.65\pm 0.20$	$2.40\pm 0.20$	$8.00\pm 0.30$	$3.50\pm 0.05$	$1.75\pm 0.10$	$4.00\pm 0.10$	$2.00\pm 0.05$	$4.00\pm 0.10$	$1.50+0.10/-0$
1206	$2.00\pm 0.20$	$3.57\pm 0.20$	$8.00\pm 0.30$	$3.50\pm 0.05$	$1.75\pm 0.10$	$4.00\pm 0.10$	$2.00\pm 0.05$	$4.00\pm 0.10$	$1.50+0.10/-0$
2010	$2.80\pm 0.20$	$5.50\pm 0.20$	$12.00\pm 0.30$	$5.50\pm 0.05$	$1.75\pm 0.10$	$4.00\pm 0.10$	$2.00\pm 0.05$	$4.00\pm 0.10$	$1.50+0.10/-0$
2512	$3.50\pm 0.20$	$6.70\pm 0.20$	$12.00\pm 0.30$	$5.50\pm 0.05$	$1.75\pm 0.10$	$4.00\pm 0.10$	$2.00\pm 0.05$	$4.00\pm 0.10$	$1.50+0.10/-0$

Unit: mm

### Reel:

Size	Packing Q'ty	A	N	C	D	B	G	T
0603 0805 1206	5kpcs/Reel (7")	$178.0\pm 2.0$	$60.0\pm 0.5$	$13.0\pm 0.5$	20(Min.)	$2.0\pm 0.5$	$10.0\pm 1.5$	14.9max.
2010 2512	4kpcs/Reel (7")	$178.0\pm 2.0$	$60.0\pm 0.5$	$13.0\pm 0.5$	20(Min.)	$2.0\pm 0.5$	$13.8\pm 1.5$	16.7max.

Unit: mm