

RSV Series

Lead Free High Voltage Power Chip Resistors

TRIGON
COMPONENTS



FEATURES

- Special material and design for high working voltage require.
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APPLICATIONS

- Back light inverter
- Power supply
- Measurement instrument
- Automotive industry
- Medical or military equipment

ORDERING CODE

RSV 1206 J 103 T E
(1) (2) (3) (4) (5) (6)

(1) Series Name

(2) Size

1206, 1210, 2512

(3) Tolerance

J=±5%

Is available by request.

(4) Nominal Resistance

3 Digit Code (E24)

Ref. Appendix

(5) Packing Style

T = Plastic Tape (5Kpcs),

P = Plastic Tape (4Kpcs)

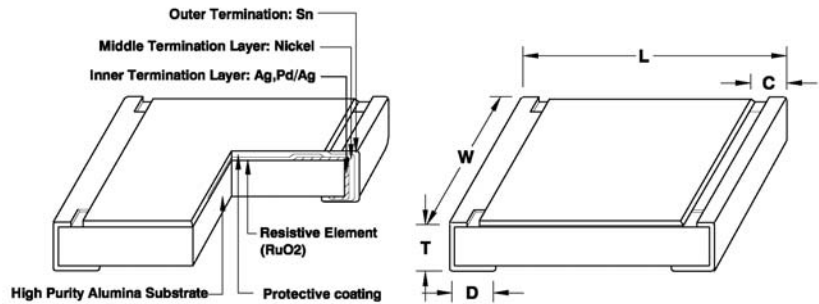
(6) Temp. Coefficient

Blank – Standard

Ref. Table below.

※Please refer to complete

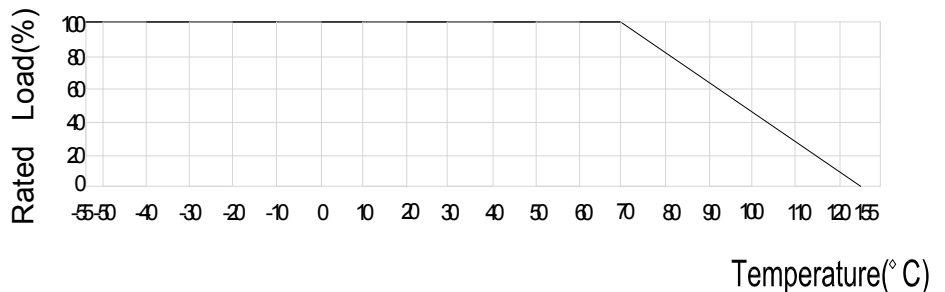
Ordering Code (RSV-Ord) for more ordering options.



DIMENSIONS (mm)

STYLE	L	W	C	D	T
RSV1206	3.10 ±0.15	1.60 ±0.15	0.50 ±0.25	0.50 ±0.25	0.55±0.10
RSV2010	5.00 ±0.20	2.50 ±0.20	0.60 ±0.25	0.60 ±0.25	0.60±0.10
RSV2512	6.30 ±0.20	3.10 ±0.20	0.60 ±0.25	0.60 ±0.25	0.60±0.15

POWER DERATING CURVE



For resistors operated in ambient temperatures over 70° C ,
Power rating shall be derated in accordance with the curve above.

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Specification And Test Methods

ITEM	Test Method	Specification
DC Resistance	JIS-C-5202 5.1 / IEC 60115-1 4.5 Measure the resistance value	J: ±5%
Short Time Overload	IEC 60115-1 4.13/JIS C 5020 5.5 2 x Rated voltage or Max. Overload Voltage for 5 sec. Measure resistance after 30 minutes.	J: $\Delta R \leq \pm(1\%+0.1\Omega)$ No mechanical damage
Solderability	JIS-C-5202 6.5 / IEC 60115-1 4.17 After immersing flux, dip in the 245 ± 5°C molten solder bath for 2 ± 0.5 sec.	Over 95% of termination must be covered with (Sn+Ag+Cu).
Resistance to Solder Heat	JIS-C-5202 6.4 / IEC 60115-1 4.18 With 260 ± 5°C for 10 ± 1 sec.	J: $\Delta R \leq \pm(1\%+0.1\Omega)$ No mechanical damage
Temperature Coefficient of Resistance (TCR)	JIS-C-5202 5.2 / IEC 60115-1 4.8.4.2 T1 T2 Test Temperature: 25°C ~ -55°C 25°C ~ +125°C $TCR(\text{ppm}/^\circ\text{C}) = \frac{R2 - R1}{R1} \times \frac{1}{T2 - T1} \times 10^6$ T1: 25°C, T2: Test temperature R1: Resistance at reference temperature (T1) R2: Resistance at test temperature (T2)	J: ±200 ppm/°C
Load Life Humidity	JIS-C-5202 7.9 / IEC 60115-1 4.24.2 Maintain the temperature of the resistor at 40±2 °C and 90~95% RH 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.	J: $\Delta R \leq \pm(5\%+0.1\Omega)$
Load Life	JIS-C-5202 7.10 / IEC 60115-1 4.25.1 Permanent resistance change after 1000+48/-0 hours (1.5 hours ON, 0.5 hours OFF) at RCWV or Max., Keep the resistor at 70 ±2°C ambient.	J: $\Delta R \leq \pm(5\%+0.1\Omega)$
Temperature Cycle	JIS-C-5202 7.4 / IEC 60115-1 4.19 Repeat 5 cycles as follows -55°C (30 min.) + 25°C (2~3 min.) +125°C (30 min.) + 25°C (2~3 min.)	J: $\Delta R \leq \pm(1\%+0.05\Omega)$ No mechanical damage
Insulation Resistance	JIS-C-5202 5.6 / IEC 60115-1 4.6.1.1 Test voltage: 100 ± 15 V	Between termination and coating must be over 1,000MΩ
Bending Strength	IEC 60115-1 4.33 Resistance change after bended on the 90mm PCB. Bend : 2mm for 1206 , 2010 , 2512	J: $\Delta R \leq \pm(1\%+0.05\Omega)$ No mechanical damage

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Rating:

HIGH VOLTAGE POWER CHIP RESISTORS

Type	Power Rating at 70 °C	Max RCWV	Max. Overload Voltage	Resistance Tolerance (%)	Temperature Coefficient (TCR; ppm/ °C)	Resistance Range		Standard Resistance Values
						Min.	Max.	
RSV1206	1/4W	800V	1600V	±5% (J)	±200	100KΩ	1MΩ	E-24
RSV2010	1/2W	1500V	3000V					
RSV2512	1W	2000V	4000V					

Dissipation

The rated power that the resistor can dissipate depends on the operating temperature
 $P_{rated} = (\text{Working Voltage})^2 / \text{resistance value}$

Resistance Marking

E-24 SERIES



3 digit marking for ±5% 1206 2010 2512
Examples: 106 $10 \times 10^6 = 10 \text{ M}\Omega$

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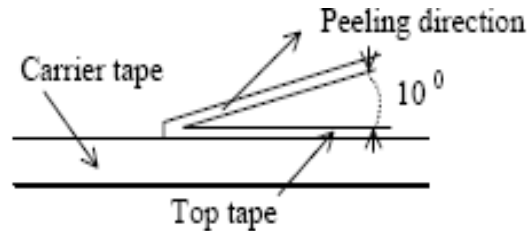
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Taping specification

- **Ability**

Peel force is 0.2N to 0.1N at peel off speed of 300mm/minute, and doesn't have flash and tear under the following test method.



- **Minimum Bending radius**

When carrier tape is bent by min. bending radius (15min) only one time, no deflection of chip and no break of carrier tape.

- **Temperature test of top tape**

Top tape doesn't peel after 120 hours exposure at 60°C, 90-95% R.H.

- **Taping package condition**

Resistance side is facing up

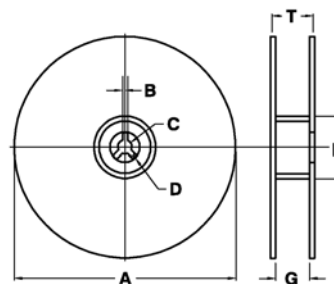
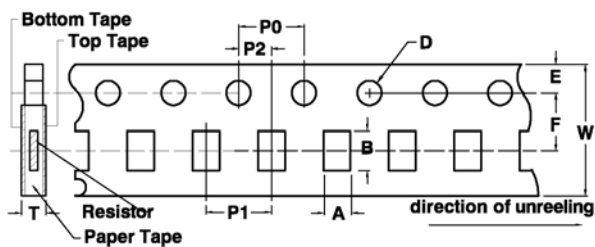
Chip resistor is free, not sticking to top tape and bottom tape

Chip resistor is easy to take out from carrier tape and chip hole have no mechanical damage.

- **Tape and reel package**

Taping specs are according to EIA RS-481

Paper Tape



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

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Tape : mm

SIZE	A	B	W±0.30	F±0.05	E±0.10	P1±0.10	P2±0.05	P0±0.10	D
RSN1206	2.00±0.20	3.57±0.20	8.00	3.50	1.75	4.00	2.00	4.00	1.50 +0.10/-0
RSN2010	2.80±0.20	5.50±0.20	12.00	5.50	1.75	4.00	2.00	4.00	1.50 +0.10/-0
RSN2512	3.50±0.20	6.70±0.20	12.00	5.50	1.75	4.00	2.00	4.00	1.50 +0.10/-0

Reel : mm

SIZE	Packing Q'ty	A	N	C	D	G	T	B
RSN1206	5KPcs/Reel	178.0±2.0	60.0±0.5	13.0±0.5	20 min.	10.0±1.5	14.9 max	2.00±0.5
RSN2010	4 KPcs/Reel	178.0±2.0	60.0±0.5	13.0±0.5	20 min.	13.8±1.5	16.7 max	2.00±0.5
RSN2512								