

RPS series High Power Anti-Surge Chip Resistor

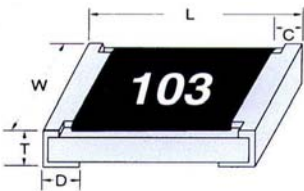
◆ Features

- » Small size and lightweight with size range per int'l standard
- » Highly stable in auto-placement surface mounting application
- » Suitable for withstanding circuit for surge voltage
- » RoHS compliant & Halogen Free

◆ Application

- » CD-ROM
- » Power Supply
- » Automotive Industry
- » Measurement instrument
- » Medical Equipment
- » Electronic watch and camera

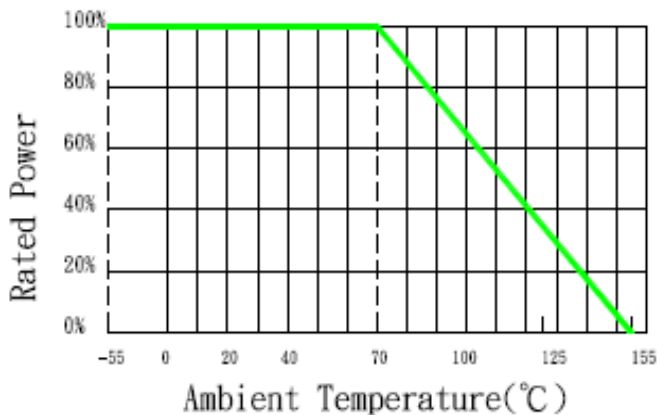
◆ Dimensions



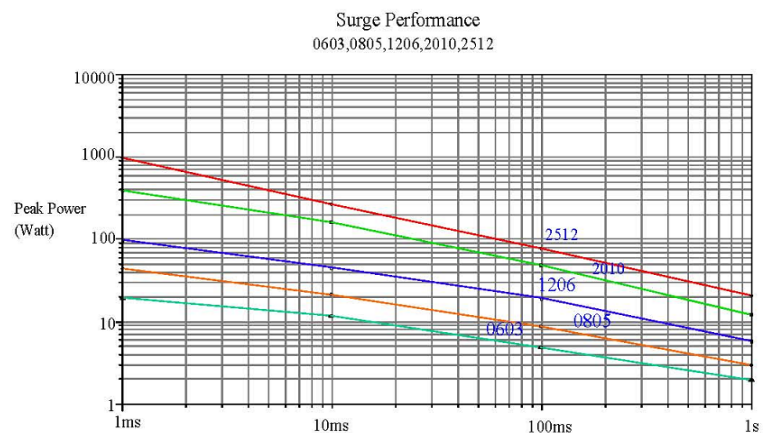
Size	L	W	C	D	T
0603	1.60±0.10	0.80±0.10	0.30±0.20	0.30±0.20	0.45±0.10
0805	2.00±0.10	1.25±0.10	0.40±0.20	0.40±0.20	0.50±0.10
1206	3.10±0.10	1.60±0.10	0.50±0.20	0.50±0.25	0.6±0.10
1210	3.10±0.10	2.60±0.15	0.50±0.25	0.50±0.25	0.55±0.10
2010	5.00±0.20	2.50±0.20	0.60±0.25	0.60±0.25	0.55±0.10
2512	6.40±0.20	3.20±0.20	0.60±0.25	1.80±0.25	0.60±0.15

Unit: mm

◆ Power Derating Curve



◆ Surge Performance



◆ Rating

Type	Power Rating at 70°C	Max. RCWV	Max. Overload Voltage	Resistance Tolerance (%)	Temperature Coefficient (ppm/°C)	Resistance Range		Standard Resistance Values
						Min.	Max.	
RPS0603	1/8W	50V	100V	± 5% (J) ± 1% (F) ± 0.5% (D)	± 200	1Ω	9.9Ω	E-24/E-96
RPS0805	1/4W	150V	300V		± 100	10Ω	1MΩ	
RPS1206	1/2W	200V	400V					
RPS1210	1/2W	200V	400V					
RPS2010	1W	200V	400V					
RPS2512	2W	300V	600V					

*special resistances please contact Faithful Link.

◆ Part Number

RPS	0805	J	47K	□	□□
Type	Size	Tolerance	R Value	Reel Size	Package Quantity
RPS	0603	F: ± 1%	0Ω = 0R	Blank = 7"	(Standard package As below) 10=10K per reel 20= 20K per reel 08= 8K per reel 16= 16K per reel
	0805	J: ± 5%	10KΩ = 10K	B= 13"	
	1206	D: 0.5%	2.2MΩ = 2M2	C= 10"	
	1210				
	2010				
	2512				

» Standard Package Q'ty for each size is as following.

TYPE	Standard Package Q'ty
RPS0603	5K per reel
RPS0805	5K per reel
RPS1206	5K per reel
RPS1210	5K per reel
RPS2010	4K per reel
RPS2512	4K per reel

◆ Specification

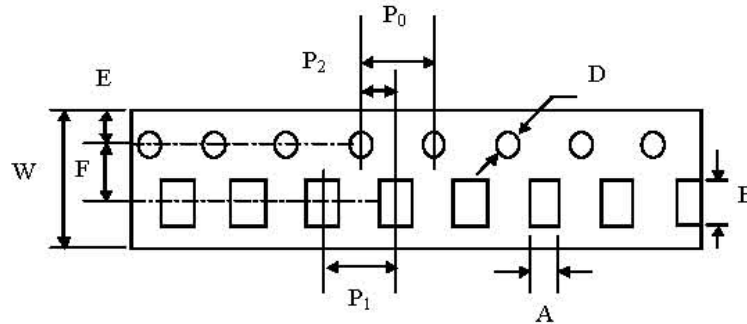
Specification and Test Method

TEST	SPECIFICATION	TEST METHOD
DC Resistance	J : ±5% , F : ±1% , D ±0.5%	IEC 60115-1 / JIS C 5201-1 , Clause 4.5 Measure the resistance Value.
Short Time Overload	$\Delta R \leq \pm (2\% + 0.1\Omega)$	IEC 60115-1 / JIS C 5201-1 , Clause 4.13 2.5 × Rated power for 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 C 5201-1, 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	$\Delta R \leq \pm (3\% + 0.1\Omega)$	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)	± 100 ppm/ °C ± 200 ppm/ °C	IEC 60115-1 / JIS C 5201-1 , Clause 4.8 Test temperature : 25°C(T1) → -55°C(T2) 25°C(T1) → +155°C(T2) $TCR(\text{ppm}/^\circ\text{C}) = \frac{R2 - R1}{R1} \times \frac{1}{T2 - T1} \times 10^6$ T1: 25°C T2: Test temperature R1: Resistance at reference temperature (T1) R2: Resistance at test temperature (T2)
Load Life	$\Delta R \leq \pm(3\% + 0.1\Omega)$	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	$\Delta R \leq \pm (1\% + 0.1\Omega)$ 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	$\Delta R \leq \pm(1\% + 0.1\Omega)$ 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, 1210, 2010, 2512

◆ Packing

Tape Packaging Dimensions

Taping specs are according to EIA RS-481

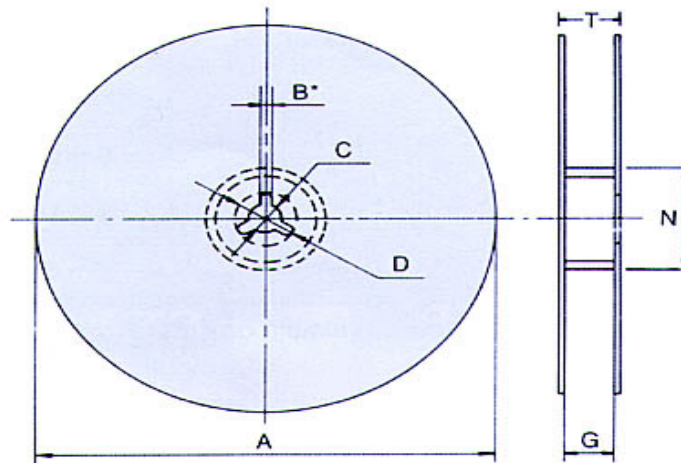


Accumulated dimensional tolerance $40\pm 0.2\text{mm}$

Size	A	B	W	F	E	P1	P2	P0	D
0603	1.10 ± 0.20	1.90 ± 0.20	8.00 ± 0.30	3.50 ± 0.05	1.75 ± 0.10	4.00 ± 0.10	2.00 ± 0.05	4.00 ± 0.10	$1.50+0.10/-0$
0805	1.65 ± 0.20	2.40 ± 0.20	8.00 ± 0.30	3.50 ± 0.05	1.75 ± 0.10	4.00 ± 0.10	2.00 ± 0.05	4.00 ± 0.10	$1.50+0.10/-0$
1206	2.00 ± 0.20	3.60 ± 0.20	8.00 ± 0.30	3.50 ± 0.05	1.75 ± 0.10	4.00 ± 0.10	2.00 ± 0.05	4.00 ± 0.10	$1.50+0.10/-0$
1210	3.00 ± 0.20	3.60 ± 0.20	8.00 ± 0.30	3.50 ± 0.05	1.75 ± 0.10	4.00 ± 0.10	2.00 ± 0.05	4.00 ± 0.10	$1.50+0.10/-0$
2010	2.80 ± 0.20	5.50 ± 0.20	12.00 ± 0.30	5.50 ± 0.05	1.75 ± 0.10	4.00 ± 0.10	2.00 ± 0.05	4.00 ± 0.10	$1.50+0.10/-0$
2512	3.50 ± 0.20	6.70 ± 0.20	12.00 ± 0.30	5.50 ± 0.05	1.75 ± 0.10	4.00 ± 0.10	2.00 ± 0.05	4.00 ± 0.10	$1.50+0.10/-0$

Unit: mm

Reel Dimensions



Size	Packing Q'ty	A	N	C	D	B	G	T
0603	5kpcs/Reel	178.0 ± 2.0	60.0 ± 0.5	13.0 ± 0.5	20(Min.)	2.0 ± 0.5	10.0 ± 1.5	14.9max.
0805	10kpcs/Reel	254.0 ± 2.0	100.0 ± 0.5	13.5 ± 0.5	20(Min.)	2.0 ± 0.5	10.0 ± 1.5	14.9max.
1206	20kpcs/Reel	330.0 ± 2.0	100.0 ± 1.0	13.5 ± 0.5	20(Min.)	2.0 ± 0.5	10.0 ± 1.5	14.9max.
1210	20kpcs/Reel	330.0 ± 2.0	100.0 ± 1.0	13.5 ± 0.5	20(Min.)	2.0 ± 0.5	10.0 ± 1.5	14.9max.
2010	4kpcs/Reel	178.0 ± 2.0	60.0 ± 0.5	13.0 ± 0.5	20(Min.)	2.0 ± 0.5	13.8 ± 1.5	16.7max.
2512	8kpcs/Reel	254.0 ± 2.0	100.0 ± 0.5	13.5 ± 0.5	20(Min.)	2.0 ± 0.5	13.8 ± 1.5	20.0max.
2512	16kpcs/Reel	330.0 ± 2.0	100.0 ± 1.0	13.5 ± 0.5	20(Min.)	2.0 ± 0.5	13.8 ± 1.5	20.0max.

Unit: mm