

Small size thick film chip resistors (RPC series)

RPC01 (0201) RPC03 (0402) RPC05 (0603)

RPC10 (0805) RPC18 (1206) RPC33 (1210)

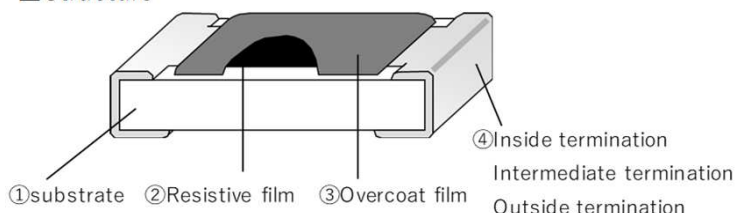
RPC50 (2010) RPC1S (2512) *(): Inch size

EOL (End of life) : RPC50(2010), RPC1S(2512)

■ Features

- High reliability metal thick film
- RoHS qualified
- ELV qualified
- AEC-Q200 qualified

■ Structure



*This is only a schematic drawing of the structure.

■ Part No. Explanation (Example)

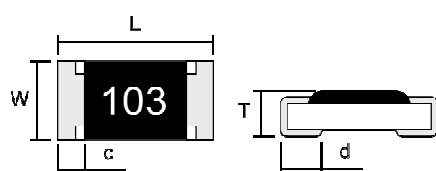
R	P	C	0	3		T	1	0	3	J
Product type			Rated power and Size			Packaging form	Nominal resistance value(*)			Resistance tolerance
RPC : Fixed chip resistors			01:0.05W,0201 03:0.1W,0402 05:0.1W,0603 10:0.125W,0805 18:0.25W,1206 33:0.33W,1210 50:0.5W,2010 1S:1W,2512			T : 4mm pitch taping φ 180 reel (RPC 03 is 2mm pitch)	The resistance value is indicated by 3-digit numbers.			J ± 5% F ± 1%

*The first two numbers are significant numbers,

and the third one is the number of zeros "0" following to the first two numbers (multiple of 10).

If there is a decimal point in resistance value, it is indicated by "R" and all numbers are significant numbers.

■ Dimensions

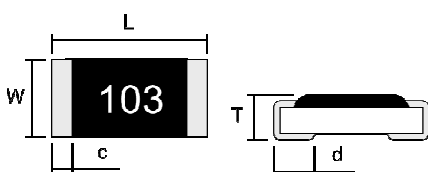


* External dimensions are for reference only.

Overcoat film color : Black

The resistance value is indicated by 3-digit numbers.

There are no indication of resistance value in RPC01.



* External dimensions are for reference only.

Overcoat film color : Black

The resistance value is indicated by 3-digit numbers.

There are no indication of resistance value in RPC03.

	L	W	T	c	d
RPC01	0.60 ± 0.03	0.30 ± 0.03	0.23 ± 0.03	0.10 ± 0.05	0.15 ± 0.05
RPC33	3.10 + 0.20 - 0.10	2.60 ± 0.15	0.60 ± 0.10	0.45 ± 0.20	0.35 ± 0.15
RPC50	5.00 ± 0.15	2.50 ± 0.15	0.60 ± 0.10	0.60 ± 0.20	0.60 ± 0.20
RPC1S	6.30 ± 0.20	3.20 ± 0.20	0.60 ± 0.10	0.60 ± 0.20	0.60 ± 0.20

EOL (End of life) : RPC50(2010), RPC1S(2512) (Unit: mm)

	L	W	T	c	d
RPC03	1.00 ± 0.05	0.50 ± 0.05	0.35 ± 0.05	0.20 ± 0.10	0.25 + 0.05 - 0.10
RPC05	1.60 ± 0.15	0.80 ± 0.15	0.45 ± 0.10	0.30 ± 0.15	0.20 + 0.20 - 0.10
RPC10	2.00 ± 0.15	1.25 ± 0.15	0.55 + 0.10 - 0.05	0.35 + 0.20 - 0.15	0.30 + 0.20 - 0.10
RPC18	3.10 + 0.20 - 0.10	1.55 ± 0.15	0.55 + 0.10 - 0.05	0.45 ± 0.20	0.35 ± 0.15

(Unit: mm)

■ Ratings

	Rated power	Limiting element voltage(*1)	Maximum overload voltage(*2)	Range of rated resistance	Tolerance on rated resistance	Category temperature range	Temperature Coefficient of Resistance (T.C.R)		
RPC01	0.05W	25V	50V	1.0Ω~10MΩ	J(±5%)	-55°C~+125°C		1.0Ω~9.1Ω	+500×10 ⁻⁶ /°C -100×10 ⁻⁶ /°C
				10Ω~1MΩ	F(±1%)	-55°C~+125°C		10Ω~10MΩ	±200×10 ⁻⁶ /°C
RPC03	0.1W	50V	100V	1.0Ω~10MΩ	J(±5%)	-55°C~+155°C		1.0Ω~9.1Ω	+500×10 ⁻⁶ /°C -100×10 ⁻⁶ /°C
				10Ω~1MΩ	F(±1%)	-55°C~+125°C	K	10Ω~1MΩ	±200×10 ⁻⁶ /°C
RPC05	0.1W	50V	100V	1.0Ω~10MΩ	J(±5%)	-55°C~+155°C		1.0Ω~9.1Ω	+500×10 ⁻⁶ /°C -100×10 ⁻⁶ /°C
				10Ω~1MΩ	F(±1%)	-55°C~+125°C	K	10Ω~1MΩ	±200×10 ⁻⁶ /°C
RPC10	0.125W	150V	200V	1.0Ω~10MΩ	J(±5%)	-55°C~+155°C		1.0Ω~9.1Ω	+500×10 ⁻⁶ /°C -100×10 ⁻⁶ /°C
				10Ω~2.2MΩ	F(±1%)	-55°C~+125°C	K	10Ω~2.2MΩ	±200×10 ⁻⁶ /°C
RPC18	0.25W	200V	400V	1.0Ω~10MΩ	J(±5%)	-55°C~+155°C		1.0Ω~9.1Ω	+500×10 ⁻⁶ /°C -100×10 ⁻⁶ /°C
				10Ω~2.2MΩ	F(±1%)	-55°C~+125°C	K	10Ω~2.2MΩ	±200×10 ⁻⁶ /°C
RPC33	0.33W	200V	400V	1.0Ω~10MΩ	J(±5%)	-55°C~+155°C		1.0Ω~9.1Ω	+500×10 ⁻⁶ /°C -100×10 ⁻⁶ /°C
				10Ω~1MΩ	F(±1%)	-55°C~+125°C	K	10Ω~1MΩ	±200×10 ⁻⁶ /°C
RPC50	0.5W	200V	400V	1.0Ω~10MΩ	J(±5%)	-55°C~+155°C		1.0Ω~9.1Ω	+500×10 ⁻⁶ /°C -100×10 ⁻⁶ /°C
				10Ω~1MΩ	F(±1%)	-55°C~+125°C	K	10Ω~1MΩ	±200×10 ⁻⁶ /°C
RPC1S	1W	200V	400V	1.0Ω~10MΩ	J(±5%)	-55°C~+155°C		1.0Ω~9.1Ω	+500×10 ⁻⁶ /°C -100×10 ⁻⁶ /°C
				10Ω~1MΩ	F(±1%)	-55°C~+125°C	K	10Ω~1MΩ	±200×10 ⁻⁶ /°C

(*1) Rated voltage = $\sqrt{\text{Rated power} \times \text{Resistance value}}$

In the case of rated voltage over above limiting element voltage, limiting element voltage will be the maximum.

(*2) The applied voltage in short time overload test = 2.5×rated voltage

In the case of the applied voltage in short time overload test over above maximum overload voltage, maximum overload voltage will be the maximum.

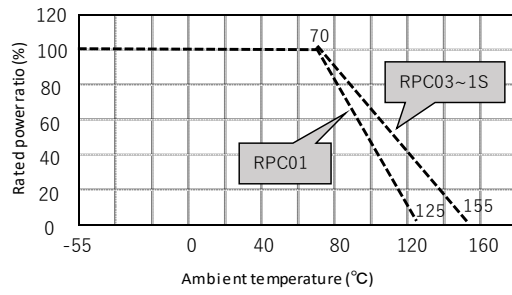
* There are the supplementary information about rating on reference page.

* Temperature Coefficient of Resistance (T.C.R) is based on JIS C5201-1 6.2 between two points: 25°C and 125°C.

■ Specifications and test methods

Item	Specifications	Test method
Overload	± (2%+0.05Ω)	JIS C5201-1 8.1 2.5× Rated voltage, for 5 seconds
Bend strength of the face plating	± (1%+0.05Ω)	JIS C5201-1 9.8 Bending distance : 3mm
Resistance to soldering heat	± (1%+0.05Ω)	JIS C5201-1 11.2 260±5°C.10(sec.)
Solderability	Covered with more than 95%	JIS C5201-1 11.1 245±3°C.2(sec.)
Rapid change of temperature	± (1%+0.05Ω)	JIS C5201-1 10.1 -55°C⇄+125°C,1000(times)
Loadlife in humidity	± (3%+0.05Ω)	60±2°C.90~95% R.H 1000h
Endurance at 70°C	± (3%+0.05Ω)	JIS C5201-1 7.1 70±2°C.1000h

■ Derating curve



* Rated power of the resistor is the maximum power which can be loaded continuously at the ambient temperature of 70 °C. For the ambient temperature above 70°C, please use according to the load derating curve (dotted line). Please note that the component surface temperature does not exceed operating temperature range.