

Low resistance thick film chip resistor RPL series

RPL03 (0402) RPL05 (0603) RPL10 (0805)

RPL18 (1206) RPL33 (1210) RPL50 (2010)

RPL1S (2512) *(): Inch size

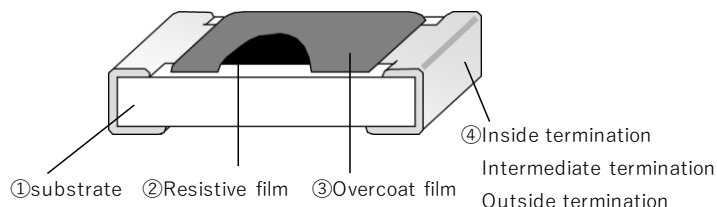
Not recommended : RPL18(1206) , RPL33(1210)

EOL (End of life) : RPL03(0402) , RPL50(2010) , RPL1S(2512)

■ Features

- Lineup from 0.1Ω low resistance value
- RoHS qualified
- ELV qualified
- AEC-Q200 qualified

■ Structure



*This is only a schematic drawing of the structure.

■ Part No. Explanation (Example)

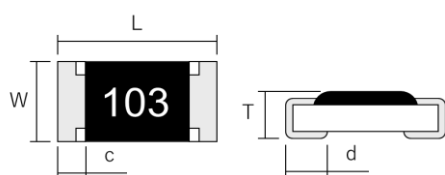
R	P	L	0	3	T	R	1	0	J
Product type			Rated power and Size		Packaging form	Nominal resistance value(*)			Resistance tolerance
RPL : low resistance value			03:0.125W,0402 05:0.2W,0603 10:0.33W,0805 18:0.5W,1206 33:0.66W,1210 50:0.75W,2010 1S:1W,2512		T : 4mm pitch taping φ 180 reel (RPC 03 is 2mm pitch)	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 RPL03.

	L	W	T	c	d
RPL03	1.00±0.05	0.50±0.05	0.35±0.05	0.20±0.10	0.25 ^{+0.10} _{-0.05}
RPL05	1.60±0.15	0.80±0.15	0.45±0.10	0.30±0.15	0.35±0.15
RPL10	2.00±0.15	1.25±0.15	0.55 ^{+0.10} _{-0.05}	0.35 ^{+0.20} _{-0.15}	0.40±0.15
RPL18	3.10 ^{+0.20} _{-0.10}	1.55±0.15	0.55 ^{+0.10} _{-0.05}	0.45±0.20	0.50 ^{+0.20} _{-0.15}
RPL33	3.10 ^{+0.20} _{-0.10}	2.60±0.15	0.60±0.10	0.45±0.20	0.50 ^{+0.20} _{-0.15}
RPL50	5.00±0.15	2.50±0.15	0.60±0.10	0.60±0.20	0.60±0.20
RPL1S	6.30±0.20	3.20±0.20	0.60±0.10	0.60±0.20	0.60±0.20

(Unit: mm)

Not recommended : RPL18(1206) , RPL33(1210)

EOL (End of life) : RPL03(0402) , RPL50(2010) , RPL1S(2512)

■ Ratings

	Rated power	Range of rated resistance	Tolerance on rated resistance	Category temperature range	Temperature Coefficient of Resistance(T.C.R)	
RPL03	0.125 W	0.22Ω~10Ω	J(±5%) F(±1%)	-55°C~+155°C	0.22Ω~10Ω	±200×10 ⁻⁶ /°C
RPL05	0.2 W	0.10Ω~10Ω	J(±5%) F(±1%)	-55°C~+155°C	0.10Ω~0.20Ω	±250×10 ⁻⁶ /°C
					0.22Ω~10Ω	±200×10 ⁻⁶ /°C
RPL10	0.33 W	0.10Ω~10Ω	J(±5%) F(±1%)	-55°C~+155°C	0.10Ω~0.20Ω	±250×10 ⁻⁶ /°C
					0.22Ω~10Ω	±200×10 ⁻⁶ /°C
RPL18	0.5 W	0.10Ω~10Ω	J(±5%) F(±1%)	-55°C~+155°C	0.10Ω~0.20Ω	±250×10 ⁻⁶ /°C
					0.22Ω~10Ω	±200×10 ⁻⁶ /°C
RPL33	0.66 W	0.10Ω~10Ω	J(±5%) F(±1%)	-55°C~+155°C	0.10Ω~0.20Ω	±250×10 ⁻⁶ /°C
					0.22Ω~10Ω	±200×10 ⁻⁶ /°C
RPL50	0.75 W	0.10Ω~10Ω	J(±5%) F(±1%)	-55°C~+155°C	0.10Ω~0.20Ω	±250×10 ⁻⁶ /°C
					0.22Ω~10Ω	±200×10 ⁻⁶ /°C
RPL1S	1 W	0.10Ω~10Ω	J(±5%) F(±1%)	-55°C~+155°C	0.10Ω~0.20Ω	±250×10 ⁻⁶ /°C
					0.22Ω~10Ω	±200×10 ⁻⁶ /°C

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

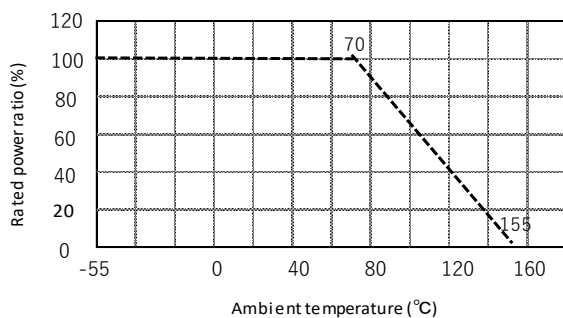
* There are the supplementary information about rating on reference page.

* 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%+0.005Ω)	JIS C5201-1 8.1 2.5×Rated voltage, for 5 seconds
Bend strength of the face plating	±(1%+0.005Ω)	JIS C5201-1 9.8 Bending distance : 3mm
Resistance to soldering heat	±(1%+0.005Ω)	JIS C5201-1 11.2 260±5°C.10(sec.)
Solderability	Covered with more than 95%	JIS C5201-1 11.1 245±3°C.(sec.)
Rapid change of temperature	±(1%+0.005Ω)	JIS C5201-1 10.1 -55°C⇔+125°C,1000(times)
Loadlife in humidity	±(3%+0.005Ω)	60±2°C.90~95% R.H 1000h
Endurance at 70°C	±(3%+0.005Ω)	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.