

## Small size · high precision thick film chip resistors HPC series

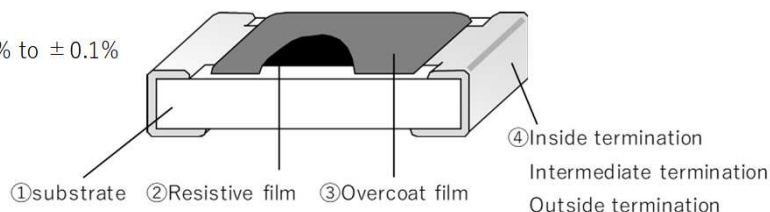
HPC01 (0201) HPC03 (0402) HPC05 (0603) HPC10 (0805)

\* ( ) : Inch size

### ■Features

- Lineups from resistance tolerance  $\pm 0.5\%$  to  $\pm 0.1\%$
- RoHS qualified
- ELV qualified
- AEC-Q200 qualified

### ■Structure



\*This is only a schematic drawing of the structure.

### ■Part No. Explanation (Example)

H	P	C	0	3	C	T	1	0	3	D
Product type			Rated power and Size		T.C.R	Packaging form	Nominal resistance value(*)			Resistance tolerance
HPC : Small size · precision			01:0.05W,0201 03:0.1W,0402 05:0.1W,0603 10:0.125W,0805		E: $\pm 25$ C: $\pm 50$ K: $\pm 100$ ( $10^{-6}/^{\circ}\text{C}$ )	T : 4mm pitch taping $\phi$ 180 reel (HPC 03 is 2mm pitch)	The resistance value is indicated by 3-digit numbers. E96 sequence products Indicated by a 4-digit.			D: $\pm 0.5\%$ C: $\pm 0.25\%$ B: $\pm 0.1\%$

\*The first two numbers are significant numbers,

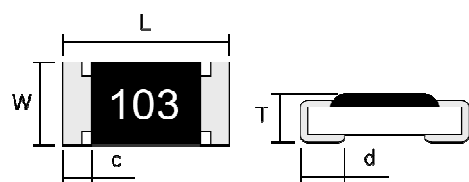
and the third one is the number of zeros "0" following to the first two numbers (multiple of 10).

\*In the case of the E96 sequence,

the first three values mean the significant figures and the fourth one represents the number of 0 following to them (multiplier 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.

	L	W	T	c	d
HPC01	$0.60 \pm 0.03$	$0.30 \pm 0.03$	$0.23 \pm 0.03$	$0.10 \pm 0.05$	$0.15 \pm 0.05$
HPC03	$1.00 \pm 0.05$	$0.50 \pm 0.05$	$0.35 \pm 0.05$	$0.20 \pm 0.10$	$0.25^{+0.05}_{-0.10}$
HPC05	$1.60 \pm 0.15$	$0.80 \pm 0.15$	$0.45 \pm 0.10$	$0.30 \pm 0.15$	$0.20^{+0.20}_{-0.10}$
HPC10	$2.00 \pm 0.15$	$1.25 \pm 0.15$	$0.55^{+0.10}_{-0.05}$	$0.35^{+0.20}_{-0.15}$	$0.30^{+0.20}_{-0.10}$

Overcoat film color : navy blue

The resistance value is indicated by 3-digit numbers (Except HPC01, HPC03).

The product of the E96 sequence is indicated by 4-digits (Except HPC01, HPC03, HPC05)

(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)		
HPC01	0.05W	25V	50V	10Ω~1MΩ	D(±0.5%)	-55°C~+125°C	K	10Ω~910Ω	±100×10 <sup>-6</sup> /°C
							C	1KΩ~1MΩ	±50×10 <sup>-6</sup> /°C
HPC03	0.1W	50V	100V	10KΩ~180KΩ	B(±0.1%)	-55°C~+155°C	E	10KΩ~180KΩ	±25×10 <sup>-6</sup> /°C
				100Ω~1MΩ	C(±0.25%)	-55°C~+155°C	C	100Ω~1MΩ	±50×10 <sup>-6</sup> /°C
				10Ω~1MΩ	D(±0.5%)	-55°C~+155°C	K	10Ω~91Ω	±100×10 <sup>-6</sup> /°C
							C	100Ω~1MΩ	±50×10 <sup>-6</sup> /°C
HPC05	0.1W	50V	100V	4.7KΩ~180KΩ	B(±0.1%)	-55°C~+155°C	E	4.7KΩ~180KΩ	±25×10 <sup>-6</sup> /°C
				10Ω~1MΩ	C(±0.25%)	-55°C~+155°C	K	10Ω~91Ω	±100×10 <sup>-6</sup> /°C
							C	100Ω~1MΩ	±50×10 <sup>-6</sup> /°C
				10Ω~1MΩ	D(±0.5%)	-55°C~+155°C	K	10Ω~91Ω	±100×10 <sup>-6</sup> /°C
							C	100Ω~1MΩ	±50×10 <sup>-6</sup> /°C
HPC10	0.125W	150V	200V	10Ω~1MΩ	D(±0.5%)	-55°C~+155°C	E	100Ω~230Ω	±25×10 <sup>-6</sup> /°C
							C	10Ω~1MΩ	±50×10 <sup>-6</sup> /°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.

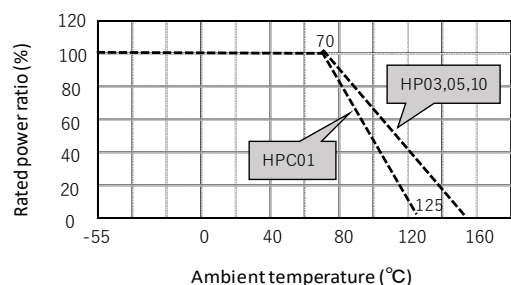
\* There are the supplementary information about rating on reference page.

\* 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.(sec.)
Rapid change of temperature	± (1%+0.05Ω)	JIS C5201-1 10.1 -55°C⇔+125°C,1000(times)
Loadlife in humidity	± (2%+0.05Ω)	60±2°C.90~95% R.H 1000h
Endurance at 70°C	± (2%+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.