

Small size · high power thick film chip resistor VCX series

Ver.2

VCX01 (0201) VCX03 (0402) VCX10 (0805)

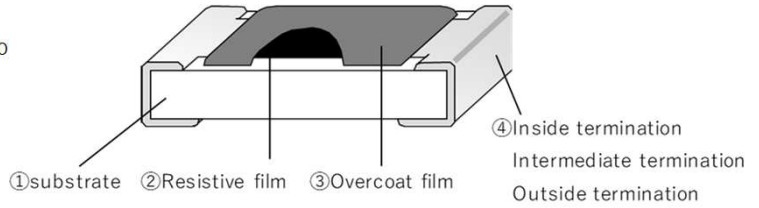
Recommendation

*(): Inch size

■ Features

- Guaranteed higher rated power compared to conventional resistors of the same size
- RoHS qualified
- ELV qualified
- AEC-Q200 qualified

■ Structure



*This is only a schematic drawing of the structure.

■ Part No. Explanation (Example)

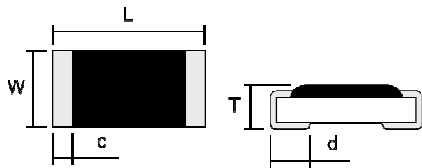
V	C	X	0	3		T	1	0	3	J
Product type			Rated power and Size		T.C.R	Packaging form	Nominal resistance value(*)			Resistance tolerance
VCX : small size · high power			01:0.1W,0201 03:0.2W,0402 10:0.6W,0805		Refer to "■ Ratings"	T : 4mm pitch taping φ 180 reel	The resistance value is indicated by 3-digit numbers. E96 sequence products are indicated by a 4-digit.			J: ±5% F: ±1% D: ±0.5%

*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



	L	W	T	c	d
VCX01	0.60 ± 0.03	0.30 ± 0.03	0.23 ± 0.03	0.10 ± 0.05	0.15 ± 0.05
VCX03	1.00 ± 0.05	0.50 ± 0.05	0.35 ± 0.05	0.20 ± 0.10	0.25 ^{+0.05} _{-0.10}
VCX10	2.00 ± 0.15	1.25 ± 0.15	0.55 ^{+0.10} _{-0.05}	0.25 ^{+0.20} _{-0.15}	0.40 ± 0.15

* External dimensions are for reference only.

Overcoat film color : Black

(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)			
V CX01	0.1W	50V	100V	10Ω~180kΩ	J (±5%) D (±0.5%)	-55°C~+155°C		+25°C~+155°C	10Ω~180kΩ	±200×10 ⁻⁶ /°C
V CX03	0.2W	50V	100V	1Ω~1MΩ	J (±5%)	-55°C~+155°C		+25°C~+155°C	1Ω~1MΩ	±200×10 ⁻⁶ /°C
				1Ω~1MΩ	F (±1%)	-55°C~+155°C	T	+25°C~+155°C	1Ω~9.1Ω	±150×10 ⁻⁶ /°C
					D (±0.5%)			+25°C~+155°C	10Ω~1MΩ	±100×10 ⁻⁶ /°C
V CX10	0.6W	400V	600V	1Ω~1MΩ	J (±5%) F (±1%)	-55°C~+155°C		+25°C~+155°C	1Ω~1MΩ	±200×10 ⁻⁶ /°C
				1Ω~1MΩ	D (±0.5%)	-55°C~+155°C	T	+25°C~+155°C	1Ω~1MΩ	±100×10 ⁻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.

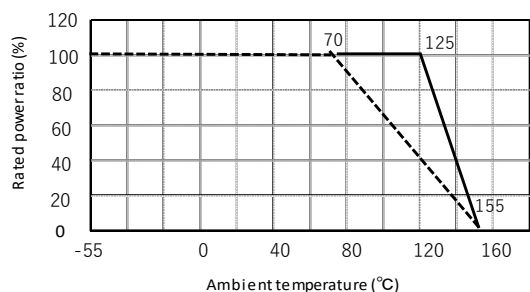
* There are the supplementary information about rating on reference page.

* Temperature Coefficient of Resistance (T.C.R) is based on JIS C5201-1 6.2 between two points: 25°C and 155°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	±(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.

*If the component temperature is below 155°C, the power rating can be used according to the load derating curve in the solid line.