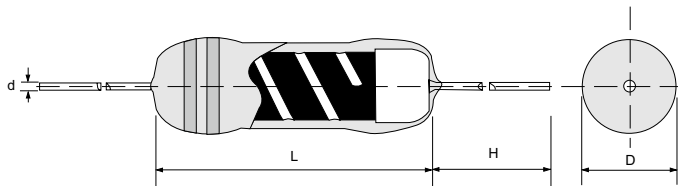


# C3 - Composite Film-Type Ceramic Composition Resistor

Quality • Reliability  
Cost-Down via Innovation

C3



## Features

- Innovative and cost-effective C3 technology
- Conforms to ANSI/AAMI norm EC53:1995/(R)2008 5.5.3
- Suitable replacement for ceramic composition resistors, which are required in most applications.
- Products meet RoHS requirements and do not contain substances of very high concern identified by European Chemicals Agency

## DIMENSIONS

Type	Body Length (L, mm)	Body Diameter (D, mm)	Lead Wire Length (H, mm)	Lead Wire Diameter (d, mm)	Net Weight Per 1000 Pcs
C3100	15.5 ± 1.0	5.0 ± 0.5	30 ± 3.0	0.80 ± 0.03	1150 Grams

## GENERAL SPECIFICATIONS

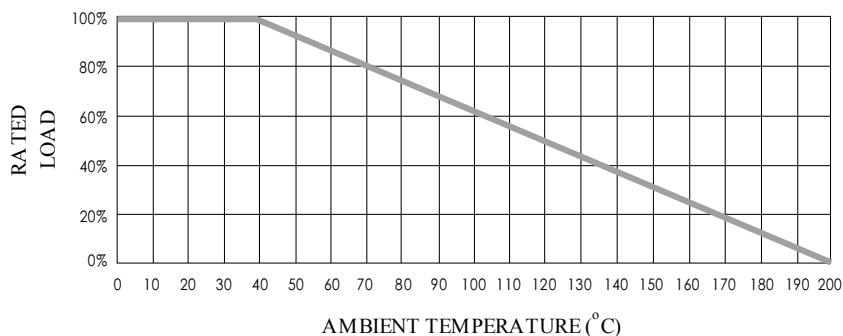
Type	Power Rating (at 40°C)	Maximum Working Voltage	Maximum Permissible Surge Voltage	Minimum Resistance	Maximum Resistance	Resistance Tolerance	Available Resistance Values
C3100	1W	300V	15KV	33Ω	22KΩ	± 5%, ± 10%, ± 20%	E-6 / E-12 / E-24

## PART NUMBER

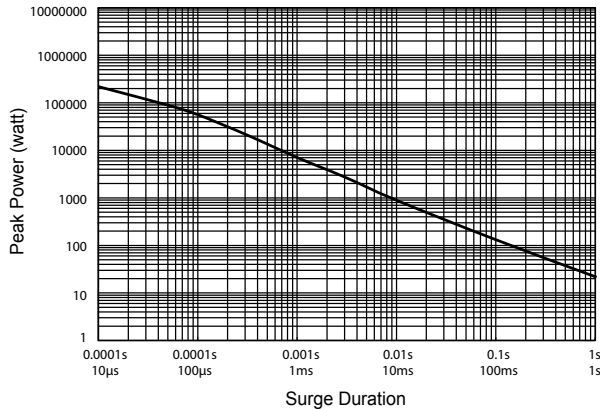
Example: C3100K1K00TKZTB500

C3100	K	1K00	TKZ	TB500
Type	Tolerance	Resistance	TCR	Packaging
	J (5%) K (10%) M (20%)	1KΩ <b>4-character code</b> containing - 3 significant digits 1 letter multiplier  <u>OHM MULTIPLIER</u> R = 1 K = 10 <sup>3</sup> M = 10 <sup>6</sup> G = 10 <sup>9</sup>	<b>3-character code</b>  TKZ = Default Product Temperature Coefficient.  Information of typical product temperature coefficient can be found in the Technical Summary section of the datasheet.	<b>5-character code</b>  TB = Tape Box  500 pieces per box

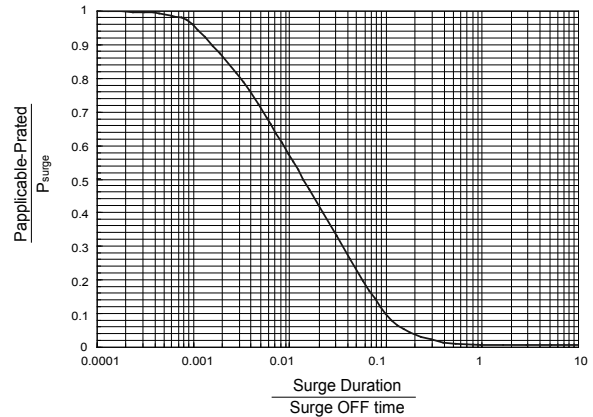
## POWER DERATING CURVE



## ■ SINGLE SURGE PERFORMANCE



## ■ SURGE POWER DERATING CURVE



### Notes:

- SINGLE SURGE PERFORMANCE graph is good for NON REPETITIVE applications operating in an ambient temperature of 40°C or less. For temperatures above 40°C, the graph power must be derated further linearly down to zero at 200°C.
- To determine applicable surge power in continuous-surge applications:
  1. Identify allowable duration and peak power  $P_{surge}$  of single surge;
  2. Determine ratio of surge duration/surge OFF time in application;
  3. Calculate  $P_{applicable}$  backwardly according to Y-axis of SURGE POWER DERATING CURVE.

## ■ TECHNICAL SUMMARY

Characteristics	Limits
Dielectric Withstanding Voltage, VAC or DC	800
Temperature Coefficient, PPM / °C	-3000 (Typical)
Operating Temperature Range, °C	-55 ~ +200
Insulation Resistance, MΩ	>10 <sup>4</sup>

## ■ PERFORMANCE SPECIFICATIONS

Characteristics	Test Conditions	Limits
Short Time Over Load	<b>IEC 60115-1 4.13</b> 5 seconds 2.5x rated voltage (not over 2x max working voltage)	±2%
Load Life In Humidity	<b>IEC 60115-1 4.24</b> 56 days rated load at (40±2)°C and (93±3)% relative humidity	±5%
Load Life	<b>IEC 60115-1 4.25.1</b> Rated load (not over max. working voltage) 1,000 hours with 1.5 hours ON, 0.5 hours OFF, at (40±2)°C	±5%
Resistance To Soldering Heat	<b>IEC 60115-1 4.18.2</b> Leads immersed till 3mm from the body in (260±5)°C solder for 10±1 seconds	±2%
Solderability	<b>IEC 60115-1 4.17.2</b> Solder area covered after (235±3)°C / (2±0.2) seconds with flux applied	95% min.coverage
Vibration	<b>IEC 60115-1 4.22</b> Six hours in each parallel and axial direction with a simple harmonic motion having an amplitude of 0.75mm and 10 to 500 Hz.	±2%
Thermal Endurance	<b>IEC 60115-1 4.25.3</b> 1000 hours at 200°C without load	±5%
Thermal Shock	<b>IEC 60115-1 4.19</b> -55°C 30minutes, +155°C 30minutes, 5 cycles	±3%
Surge Test	<b>Surge voltage = <math>\sqrt{40,000 \times P \times R \text{ DC}}</math></b> P is power rating, R is resistance value, surge voltage is not more than listed at right. Surge duration = 1.2/50µs Period = 60 sec Number of surges = 100	15KV ±5%