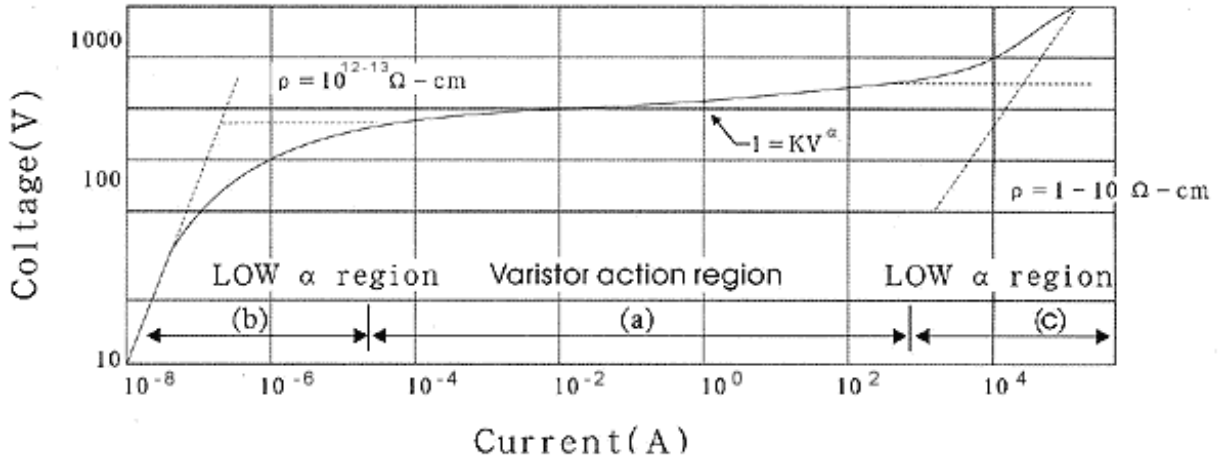


# Vatronics Technologies Limited

## Vatronics Definitons of technical terms

### \* Voltage-Current Characteristics:



### \* Varistor Voltage (breakdown voltage):

The varistor voltage is the voltage across the varistor measured at a specified current  $I_c$  (0.1mA or 1mA) of specified duration.

### \* Max.allowable Voltage and leakage current

The maximum operating voltage corresponds to the "rest" stage of the varistor. This "rest" voltage offers a low leakage current in order to limit the power consumption of the protective device and not to disturb the circuit to be protected. The leakage currents usually have values in the range of a few micro-amperes.

### \* Non linear exponent( $\alpha$ ):

The varistor voltage-current characteristic is defined by the equation:

$I = KV^\alpha$  where  $K$  is  $\alpha$  constant dependent on geometry, and  $\alpha$  is the non linear exponent.

We usually take two points  $(V_1, I_1)$ ,  $(V_2, I_2)$  to estimate the value of  $\alpha$

$\alpha = \frac{\text{Log} I_1 / I_2}{\text{Log} V_1 / V_2}$  in which  $I_1$ , and  $I_2$  are the current value corresponding to the voltage value  $V_1$  and  $V_2$ .

### \* Rated power

The maximum power that can be applied within the specified ambient temperature.

### \* Capacitance

The capacitance of varistor is the reference value measured between the varistor terminals at specified frequency

**\* Withstanding surge current:**

Withstanding surge current is the maximum peak current for the varistor with the specified standard impulse current (8x20 • sec) applied one time or two times and corresponding to a permissible variation of 10% in the varistor voltage change.

**\* Vatronics Maximum clamping voltage:**

Maximum clamping voltage is the maximum voltage VP between two terminals with the specified standard impulse current I (8x20 • sec), The voltage value is an indication on the protective function of the varistor.

**\* Energy**

Maximum energy from one or a burst of pulses. It is the value within the varistor change of ± 10 % when one impulse of 10x1000 • sec is applied

$$E = KXVmXI_mXT$$

E = Energy

K:constant = 1.4

Vm:Max. clamping voltage at Im

Im:Max. allowable single surge current of 10x1000 • sec.

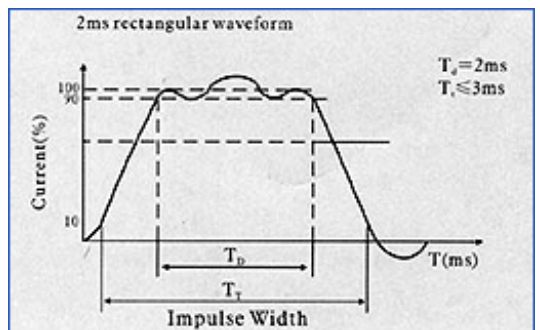
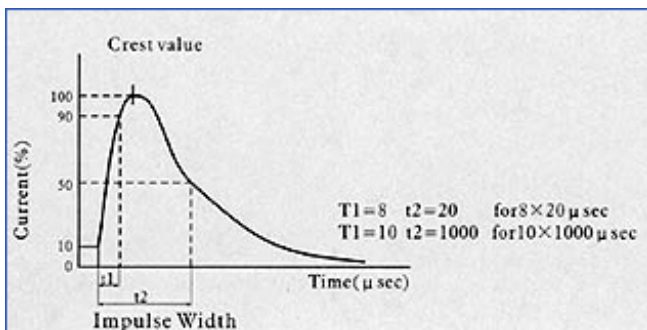
T:Duration of surge current (1000 • sec)

**Vatronics\* Pulse lifetime rating**

This is expressed as the maximum allowable number of impulse currents applied.

8x20 • sec impulse current (or 10x1000 • sec) is applied at prescribed interval. This

curve also provides for derating current as required with repetitive pulsing,



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