METAL OXIDE VARISTOR

CHARACTERISTICS AND FUNCTION INTRODUCTION

JNR ZINC OXIDE VARISTORS

Zinc oxide varistor is a voltage dependent resistor with symmetrical voltage-current characteristics that is designed to protect all kinds of electronic devices or elements from switching and induced lightening surges. It's non linear exponent characteristic with broad using range and mass production is gradually being used by various level of electric engineering.

FEATURES

- Fast response time.
- Low leakage current.
- Excellent voltage & energy ration.
- Low standby power and no follow on current.
- High performance in surge current handing capability.
- High performance in clamping voltage characteristics.

APPLICATIONS

- IC, diode, transistor, thyristor, triac, and other semiconductor protection.
- Suppression of mainborne transients in consumer electronics and industrial electronics.
- Suppression of internally generated spikes in electronics circuit.
- Surge protection in, communication, measuring and controller electronics.
- Surge protection in electronic home appliances and gas and petroleum appliances.
- Relay and electromagetic valve surge absorption.

PARAMETERS DEFINITION

- Varistor Voltage (breakdown voltage):

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

- Maximum allowable voltage:

  The Maximum allowable voltage corresponds to the rest state of the varistor. The rest state voltage offers a low leakage current in order to limit the power consumption of the protected device and not to disturb the circuit to be protected.

- Non linear exponent (α):

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

  I=KVα where K is a constant dependent on geometry, and is the non linear exponent. We usually take two points(V1, I1)(V2, I2) to estimate the of α .

  $\alpha = \frac{\log I1/I2}{\log V1/V2}$ In which, and I2 are the current value corresponding to the voltage value V1 and V2

- Maximum clamping voltage:

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