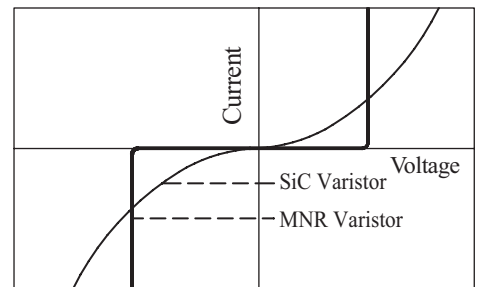


1. Introduction

OS. MNR varistor (Metal Oxide Non-Linear Resistor) is the ceramic semiconductor, made from zinc oxide and several kind of additives under the controlled process. Compared with conventional type varistors, MNR is superior on its sharp nonlinearity and high surge endurance. To protect the electronic equipment from lightening surge and overloading voltage, MNR shows its superior characteristics.



V-I Characteristics

2. Technical Terms.

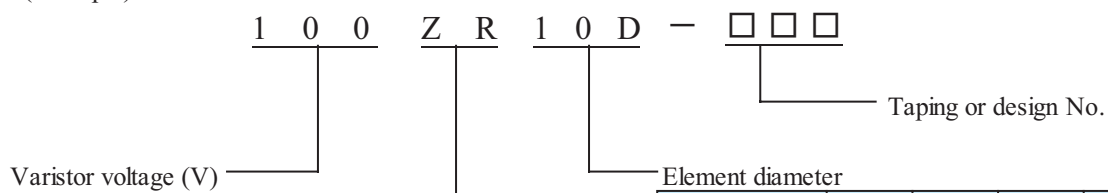
- 1) Varistor Voltage ······ Voltage across the terminal when specified current (C) is applied, Normally DC 1mA, is applied except 05D, 0.1mA.
- 2) Maximum Continuous Voltage ······ Maximum continuously applicable voltage in rms AC or DC.
- 3) Energy Capacity ······ Maximum energy level for 2msec width square wave form, one time, that changes the varistor voltage within $\pm 10\%$.
- 4) Rated Pulse Power ······ Maximum continuous pulse loading (or AC loading) in $85 \pm 2^\circ\text{C}$ ambient, that changes the varistor voltage $\pm 10\%$ in 1000Hrs.
- 5) Surge Endurance ······ Maximum current value for $8 \times 20 \mu$ sec standard surge wave form that changes the varistor voltage within $\pm 10\%$ for on surge or two surges with 5min interval for same direction.
- 6) Maximum Clamping Voltage ······ The peak voltage value across the terminal when standard $8 \times 20 \mu$ sec surge current is applied.
- 7) Capacitance ······ Capacitance across the terminal at 1KHz (reference only)
- 8) Operating Temperature ······ Continuously working ambient temperature range. $-40 \sim 85^\circ\text{C}$.
- 9) Storage Temperature ······ Continuously preserving temperature range. $-40 \sim 125^\circ\text{C}$.
- 10) Temperature coefficient of varistor voltage ······ Temperature deviation of varistor voltage from 20°C to 70°C .
Varistor voltage change between 2 temperature steps be within $-0.05\%/^\circ\text{C}$.

3. Series

Type	Radial type		
Shape			
Features	General purpose types		High transient energy
Model No.	ZR	NS	ZM
Varistor voltage (V)			

4. Part number

(Example)



Symbol	05D	07D	10D	12D	14D	20D
Element diameter	φ 5	φ 7	φ 10	φ 12	φ 14	φ 20

Model No.

ZR	Disk types for low voltage (general purpose)
ZM	Disk types for high transient energy and low voltage
NS	Disk types for middle or high voltage