

# Super Mox Series

## High Voltage



High-voltage Super Mox resistors have been developed to meet the precision temperature stability requirements of high-accuracy and high-voltage systems. Super Mox combines proprietary non-inductive resistance system and design to achieve low temperature coefficient, low voltage coefficients, high stability and increased high operating voltages. These resistors are designed to meet the demanding



Uncoated resistor element pictured for demonstration purposes only. Finished product is coated with silicone.

requirements of high voltage power supplies, electron microscopes, X-ray systems, high resolution CRT displays and geophysical instruments.

### SERIES SPECIFICATIONS

| Series | Power Rating (W) | Max. Oper. Voltage | Res. Range ( $\Omega$ ) | VCR* |
|--------|------------------|--------------------|-------------------------|------|
| MOX910 | 3.9              | 9.4Kv              | 600 $\Omega$ -500M      | 0.40 |
|        |                  |                    | 500M-10G                | 0.75 |
| MOX920 | 4.6              | 13.8Kv             | 500 $\Omega$ -1G        | 0.20 |
|        |                  |                    | 1G-50G                  | 0.40 |
| MOX930 | 7.8              | 20Kv               | 400 $\Omega$ -1G5       | 0.15 |
|        |                  |                    | 1G5-50G                 | 0.30 |
| MOX940 | 11.7             | 30Kv               | 600 $\Omega$ -2G5       | 0.10 |
|        |                  |                    | 2G5-50G                 | 0.15 |
| MOX950 | 12.5             | 40Kv               | 800 $\Omega$ -3G        | 0.08 |
|        |                  |                    | 3G-50G                  | 0.12 |
| MOX960 | 15.5             | 50Kv               | 1M-4G                   | 0.06 |
|        |                  |                    | 4G-50G                  | 0.10 |
| MOX970 | 19.4             | 60Kv               | 1M-5G                   | 0.04 |
|        |                  |                    | 5G-50G                  | 0.08 |

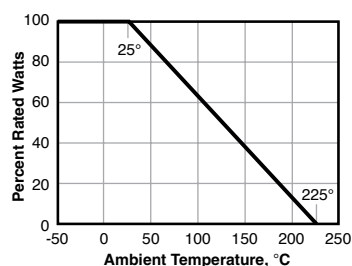
\* typical values, contact factory for details

### CHARACTERISTICS

|                                 |  |
|---------------------------------|--|
| <b>Tolerances</b>               | 0.10%, 0.25%, 0.5%, 1%   |
| <b>Temperature Coefficients</b> | 5, 10, 15, 25, 50 and 100ppm/ $^{\circ}$ C (10ppm/ $^{\circ}$ C available to 10G, 25ppm/ $^{\circ}$ C to 100G, other on request. Temperature coefficient referenced to 25 $^{\circ}$ C, $\Delta$ R taken at +125 $^{\circ}$ C. |
| <b>Encapsulation</b>            | Silicone Conformal Coating   |
| <b>Terminal Material</b>        | Gold Plated  |
| <b>Core Material</b>            | Al <sub>2</sub> O <sub>3</sub> (96%)   |
| <b>Resistor Material</b>        | Ruthenium Oxide  |
| <b>Operating Temperature</b>    | -55 $^{\circ}$ C to 225 $^{\circ}$ C   |

|                              |                                      |  |
|------------------------------|--------------------------------------|--|
| <b>Insulation Resistance</b> | >10,000 M $\Omega$                   | 500 Volt 25 $^{\circ}$ C 75% relative humidity   |
| <b>Dielectric Strength</b>   | >1,000 Volt                          | 25 $^{\circ}$ C 75% relative humidity            |
| <b>Thermal Shock</b>         | $\Delta$ R/R < 0.1% typ., 0.20% max. | MIL Std. 202, method 107 Cond. C (IEC 68 -2 -14) |
| <b>Overload</b>              | $\Delta$ R/R < 0.1% typ., 0.25% max. | 1,5 x Pnom, 5 sec (do not exceed max. voltage)   |
| <b>Moisture Resistance</b>   | $\Delta$ R/R < 0.1% typ., 0.25% max. | MIL Std. 202, method 106 (IEC 68 -2 -3)          |
| <b>Load Life</b>             | $\Delta$ R/R < 0.1% typ., 0.25% max. | 1000 hours at rated power (IEC 115 -1)           |

### Derating



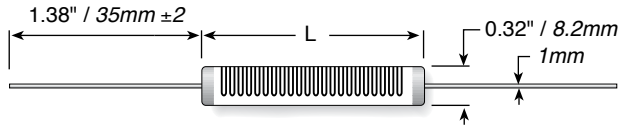
(continued)

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### DIMENSIONS

(in./mm ±0.5mm)



| Series | L               |
|--------|-----------------|
| MOX910 | 1.07" / 27.2mm  |
| MOX920 | 1.56" / 39.5mm  |
| MOX930 | 2.05" / 52mm    |
| MOX940 | 3.06" / 77.6mm  |
| MOX950 | 4.06" / 103.2mm |
| MOX960 | 4.87" / 123.7mm |
| MOX970 | 6.05" / 153.7mm |

### ORDERING INFORMATION

Coating  
2 = conformal silicone standard

E = RoHS compliant

**MOX91021006JTE**

|  |  |  |   |
|--|--|--|---|
| <p><b>Super Mox Series</b><br/>see chart for wattage</p> <p><b>*Extremely tight tolerances and TCRs not available across the full resistance range. Consult factory.</b></p> | <p><b>Ohms</b><br/>First 3 digits are significant; 4th digit is multiplier (# of zeroes to follow). Examples:<br/>1001 = 1000Ω<br/>1503 = 150,000Ω<br/>1006 = 100 MΩ</p> | <p><b>Tolerance*</b><br/>B = 0.10%<br/>C = 0.25%<br/>D = 0.5%<br/>F = 1%</p> | <p><b>TCR*</b><br/>T = 100ppm<br/>V = 50ppm<br/>W = 25ppm<br/>X = 15ppm<br/>Y = 10ppm</p> |
|--|--|--|---|

| Part Number    | Watts | Ohms<br>1% tol. | TCR    |
|----------------|-------|-----------------|--------|
| MOX91021004FVE | 3.9W  | 1M              | 50ppm  |
| MOX91025004FVE | 3.9W  | 5M              | 50ppm  |
| MOX91021005FVE | 3.9W  | 10M             | 50ppm  |
| MOX91022505FTE | 3.9W  | 25M             | 100ppm |
| MOX92021005FVE | 4.6W  | 10M             | 50ppm  |
| MOX92025005FVE | 4.6W  | 50M             | 50ppm  |
| MOX92021006FVE | 4.6W  | 100M            | 50ppm  |
| MOX92021007FTE | 4.6W  | 1000M           | 100ppm |
| MOX93021004FVE | 7.8W  | 1M              | 50ppm  |
| MOX93025004FVE | 7.8W  | 5M              | 50ppm  |
| MOX93021005FVE | 7.8W  | 10M             | 50ppm  |
| MOX93022505FTE | 7.8W  | 25M             | 100ppm |
| MOX94021005FVE | 11.7W | 10M             | 50ppm  |
| MOX94025005FVE | 11.7W | 50M             | 50ppm  |
| MOX94021006FVE | 11.7W | 100M            | 50ppm  |
| MOX94021007FTE | 11.7W | 1000M           | 100ppm |
| MOX95021004FVE | 12.5W | 1M              | 50ppm  |
| MOX95025004FVE | 12.5W | 5M              | 50ppm  |
| MOX95021005FVE | 12.5W | 10M             | 50ppm  |
| MOX95022505FTE | 12.5W | 25M             | 100ppm |
| MOX96021005FVE | 15.5W | 10M             | 50ppm  |
| MOX96025005FVE | 15.5W | 50M             | 50ppm  |
| MOX96021006FVE | 15.5W | 100M            | 50ppm  |
| MOX96021007FTE | 15.5W | 1000M           | 100ppm |
| MOX97021004FVE | 19.4W | 1M              | 50ppm  |
| MOX97025004FVE | 19.4W | 5M              | 50ppm  |
| MOX97021005FVE | 19.4W | 10M             | 50ppm  |
| MOX97022505FTE | 19.4W | 25M             | 100ppm |