

# Mini-Mox

## Precision Thick Film Axial Terminal High Voltage/High Resistance



### FEATURES

- Wide resistance ranges
- Silicone or epoxy coating
- Metal oxide resistive element

### APPLICATIONS

- Avionics
- Medical electronics
- High gain feedback applications
- Current pulse limiters
- Vacuum and space application

The Mini-Mox resistor is very versatile, covering a wide resistance range as well as a wide range of operating voltages. Provided with tolerances down to 0.5%, the Mini-Mox resistor works well in precision circuits.

### SERIES SPECIFICATIONS

| Ohmite Series                        | Resistance Range (Ohms) | Power | Voltage Rating | Available Tolerances* | Capacitance (pf) |
|--------------------------------------|-------------------------|-------|----------------|-----------------------|------------------|
| • High-temperature (silicone coated) |                         | @70°C |                |                       |                  |
| MOX-400-22                           | 500Ω to 300,000M        | 0.35W | 2,500V         | 1% to 20%             | 1.00             |
| MOX-750-22                           | 750Ω to 600,000M        | 0.70W | 5,000V         | 1% to 20%             | 0.75             |
| MOX1125-22                           | 1K to 1,000,000M        | 1.40W | 7,500V         | 1% to 20%             | 0.25             |
| • Standard (epoxy coated)            |                         | @25°C |                |                       |                  |
| MOX-400-23                           | 500Ω to 300,000M        | 0.75W | 2,500V         | 0.5% to 20%           | 1.00             |
| MOX-750-23                           | 1K to 600,000M          | 1.00W | 5,000V         | 0.5% to 20%           | 0.75             |
| MOX1125-23                           | 1K to 1,000,000M        | 1.50W | 7,500V         | 0.5% to 20%           | 0.25             |

\*Some tolerances are not available over the entire resistance range.

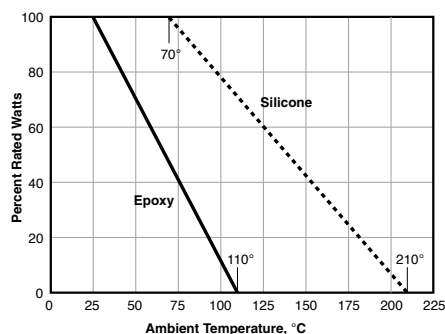
### CHARACTERISTICS

|                              |                                                                          |
|------------------------------|--------------------------------------------------------------------------|
| <b>Resistor</b>              | Metal Oxide                                                              |
| <b>Coating</b>               | Silicone or Epoxy                                                        |
| <b>Core</b>                  | Alumina                                                                  |
| <b>Terminals</b>             | Solder-coated axial. RoHS solder composition is 96% Sn, 3.5% Ag, 0.5% Cu |
| <b>Resistance Range</b>      | 500Ω to 1 Teraohm                                                        |
| <b>Power Rating</b>          | 0.35W to 1.5W                                                            |
| <b>Voltage Rating</b>        | 2500V to 7.5KV                                                           |
| <b>Tolerance</b>             | 0.5% to 20%; not all tolerances available in all values                  |
| <b>Operating Temperature</b> | -55°C to +220°C                                                          |
| <b>Temp. Coefficient</b>     | 25ppm/°C 0° to 85°C available                                            |

### Performance Data

| Characteristic                         | Test Method                                      | Specification                           |
|----------------------------------------|--------------------------------------------------|-----------------------------------------|
| <b>Humidity</b>                        | MIL-STD-202, Method 103B, Condition B            | ±0.25%                                  |
| <b>Dielectric Withstanding Voltage</b> | MIL-STD-202, Method 301, 750V                    | ±0.25%                                  |
| <b>Insulation Resistance</b>           | MIL-STD-202, Method 302, Condition A or B        | >10,000M or greater dry                 |
| <b>Thermal Shock</b>                   | MIL-STD-202, Method 107G, Condition B, B-1, or F | ±0.20%                                  |
| <b>Load Life</b>                       | MIL-STD-202, Method 108A, Condition D            | ±2.0%                                   |
| <b>Resistance to Solvents</b>          | MIL-STD-202, Method 215G                         | Acceptable for the Standard Series Only |
| <b>Terminal Strength</b>               | MIL-STD-202, Method 211A, Condition A or B       | ±0.25%                                  |
| <b>Shock (Specified Pulse)</b>         | MIL-STD-202, Method 213B, Condition I            | ±0.25%                                  |
| <b>Vibration, High Frequency</b>       | MIL-STD-202, Method 204D, Condition D            | ±0.20%                                  |
| <b>Power Conditioning</b>              | MIL-R-49462A, Par 4.8                            | ±0.50%                                  |
| <b>Solderability</b>                   | MIL-STD-202, Method 208F                         | >95% Coverage                           |

### Derating



(continued)

# Mini-Mox

## Precision Thick Film Axial Terminal High Voltage/High Resistance

### STANDARD TEMP./VOLTAGE COEFFICIENTS OF RESISTANCE

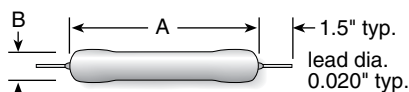
| Resistor Series | Temp. Coeff. of Resistance |             | 100 PPM/°C      | Voltage Coeff. of Resistance** |                 |
|-----------------|----------------------------|-------------|-----------------|--------------------------------|-----------------|
|                 | 25 PPM/°C                  | 50 PPM/°C   |                 | < 2PPM/Volt                    | < 5PPM/Volt     |
| MOX-400         | 1K-99M                     | 100M-450M   | 451M-30,000M    | 1K-1,000M                      | 1,001M-100,000M |
| MOX-750         | 1K-199M                    | 200M-900M   | 901M-70,000M    | 1K-2,000M                      | 2,001M-100,000M |
| MOX1125         | 1K-299M                    | 300M-1,350M | 1,351M-100,000M | 1K-3,000M                      | 3,001M-100,000M |

\*TCR of 25ppm for temperature range of 0°C-85°C. TCR of 50ppm and 100ppm for -55°C to 125°C. Consult factory for TCR values operating higher than 125°C

\*\*For tighter VCs please contact Ohmite.

### DIMENSIONS

(in./mm)



| Series                               | Power | A max.<br>@70°C | B max.        |
|--------------------------------------|-------|-----------------|---------------|
| • High-temperature (silicone coated) |       |                 |               |
| MOX-400-22                           | 0.35W | 0.510" / 12.95  | 0.140" / 3.56 |
| MOX-750-22                           | 0.70W | 0.820" / 20.83  | 0.140" / 3.56 |
| MOX1125-22                           | 1.40W | 1.210" / 30.73  | 0.140" / 3.56 |
| • Standard (epoxy coated)            |       |                 |               |
| @25°C                                |       |                 |               |
| MOX-400-23                           | 0.75W | 0.580" / 14.78  | 0.165" / 4.19 |
| MOX-750-23                           | 1.00W | 0.880" / 22.35  | 0.165" / 4.19 |
| MOX1125-23                           | 1.50W | 1.270" / 32.26  | 0.165" / 4.19 |

### HOW TO ORDER

| Style                    |                                                   | Coating                                                                                                                                                  |                                                                         | E = RoHS Compliant |          |
|--------------------------|---------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|--------------------|----------|
| 200, 300, 400, 750, 1125 |                                                   | 2 = Black silicone<br>3 = Epoxy<br>6 = No coating                                                                                                        |                                                                         |                    |          |
| <b>MOX</b>               | <b>1125</b>                                       | <b>23</b>                                                                                                                                                | <b>1006</b>                                                             | <b>F</b>           | <b>E</b> |
| Mini Mox Series          | Terminal                                          | Ohms                                                                                                                                                     | Tolerance                                                               |                    |          |
|                          | 0 = MOX-200 or 300;<br>MOX-200 Z or 300 Z = 50ppm | First 3 digits are significant; 4th digit is multiplier (# of zeroes to follow). Examples:<br>10R2 = 10.2 ohms<br>1000 = 100 ohms<br>1503 = 150,000 ohms | D = 0.5%<br>F = 1%<br>G = 2%<br>J = 5%<br>K = 10%<br>M = 15%<br>P = 20% |                    |          |
|                          | 2 = 0.020"<br>7 = 0.032"                          |                                                                                                                                                          |                                                                         |                    |          |

Not all tolerances available in all values.