### 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

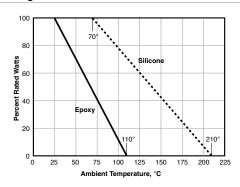
| Resistance<br>Range (Ohms)                             | Power   | Voltage<br>Rating   | Available<br>Tolerances*  | Capacitance (pf)   |
|--|---|---|---|--|
| <ul> <li>High-temperature (silicone coated)</li> </ul> |   |   |   |  |
| 500Ω to 300,000M                                       | 0.35W   | 2,500V  | 1% to 20%   | 1.00   |
| 750Ω to 600,000M                                       | 0.70W   | 5,000V  | 1% to 20%   | 0.75   |
| 1K to 1,000,000M                                       | 1.40W   | 7,500V  | 1% to 20%   | 0.25   |
| Standard (epoxy coated)                                |   |   |   |  |
| 500Ω to 300,000M                                       | 0.75W   | 2,500V  | 0.5% to 20%   | 1.00   |
| 1K to 600,000M   | 1.00W   | 5,000V  | 0.5% to 20%   | 0.75   |
| 1K to 1,000,000M                                       | 1.50W   | 7,500V  | 0.5% to 20%   | 0.25   |
|  | Range (Ohms) (silicone coated) 500Ω to 300,000M 750Ω to 600,000M 1K to 1,000,000M coated) 500Ω to 300,000M 1K to 600,000M | Range (Ohms)       Power         e (silicone coated)       @70°C         500Ω to 300,000M       0.35W         750Ω to 600,000M       0.70W         1K to 1,000,000M       1.40W         coated)       @25°C         500Ω to 300,000M       0.75W         1K to 600,000M       1.00W | Range (0hms)         Power (silicone coated)         Rating           ε (silicone coated)         @70°C           500Ω to 300,000M         0.35W         2,500V           750Ω to 600,000M         0.70W         5,000V           1K to 1,000,000M         1.40W         7,500V           coated)         @25°C           500Ω to 300,000M         0.75W         2,500V           1K to 600,000M         1.00W         5,000V | Range (0hms)PowerRatingTolerances* $\mathbf{c}$ (silicone coated)@70°C $500\Omega$ to 300,000M0.35W2,500V1% to 20% $750\Omega$ to 600,000M0.70W5,000V1% to 20%1K to 1,000,000M1.40W7,500V1% to 20%coated)@25°C $500\Omega$ to 300,000M0.75W2,500V0.5% to 20%1K to 600,000M1.00W5,000V0.5% to 20% |

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

#### CHARACTERISTICS

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

#### **Derating**



| Per | torma | ince | Data |
|-----|-------|------|------|
|-----|-------|------|------|

| remoninance Data                   |   |   |
|------------------------------------|---|---|
| Characteristic                     | Test Method   | Specification                           |
| Humidity                           | MIL-STD-202, Method 103B,<br>Condition B            | ±0.25%                                  |
| Dielectric<br>Withstanding Voltage | MIL-STD-202, Method 301, 750V                       | ±0.25%                                  |
| Insulation Resistance              | MIL-STD-202, Method 302,<br>Condition A or B        | >10,000M or greater dry                 |
| Thermal Shock                      | MIL-STD-202, Method 107G,<br>Condition B, B-1, or F | ±0.20%                                  |
| Load Life                          | MIL-STD-202, Method 108A,<br>Condition D            | ±2.0%                                   |
| Resistance to Solvents             | MIL-STD-202, Method 215G                            | Acceptable for the Standard Series Only |
| Terminal Strength                  | MIL-STD-202, Method 211A,<br>Condition A or B       | ±0.25%                                  |
| Shock (Specified Pulse)            | MIL-STD-202, Method 213B,<br>Condition I            | ±0.25%                                  |
| Vibration, High<br>Frequency       | MIL-STD-202, Method 204D,<br>Condition D            | ±.020%                                  |
| Power Conditioning                 | MIL-R-49462A, Par 4.8                               | ±0.50%                                  |
| Solderability                      | MIL-STD-202, Method 208F                            | >95% Coverage                           |
|                                    |   |   |

(continued)





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

#### STANDARD TEMP./VOLTAGE COEFFICIENTS OF RESISTANCE

|                 | Temp. Coeff | . of Resistance | Volta           | /oltage Coeff. of Resistance** |                 |  |
|-----------------|-------------|-----------------|-----------------|--------------------------------|-----------------|--|
| Resistor Series | 25 PPM/°C   | 50 PPM/°C       | 100 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 |  |

<sup>\*</sup>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.

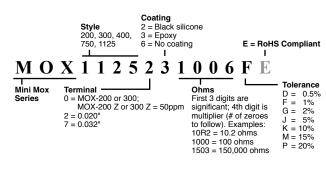
DIMENSIONS

#### (in./mm)

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| Series                             | Power | A max.         | B max.        |
|------------------------------------|-------|----------------|---------------|
| High-temperature (silicone coated) |       | @70°C          |               |
| 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



Not all tolerances available in all values.