

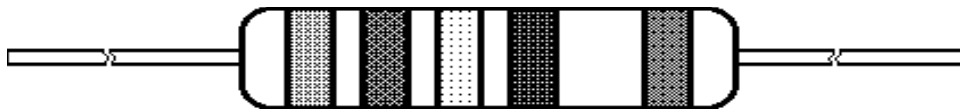


# CODECO CORPORATION OF VERMONT

## Series: MO

## Metal Oxide Resistors

VPR series MO resistors have been developed to provide a cost effective replacement for commercial wirewounds with increased performance. By depositing a thick complex-oxide material on a ceramic core of the highest grade, we are able to produce a resistor that can dissipate high amounts of power and surge with the added advantage of negligible inductance and long term stability. The MM series is just a miniature of the MO. All MO and MM series parts are RoHS compliant.



| VPR Type | Power at 70°C | Resistance Range | Working Voltage* | Length in. (mm) | Diameter in. (mm) | Lead Size in. |
|----------|---------------|------------------|------------------|-----------------|-------------------|---------------|
| MOH      | 1/2 watt      | 0.1Ω - 75K       | 250V             | .35 (9.0)       | .11 (2.8)         | .028 x 1.1    |
| MO1      | 1.25 watts    | 0.1Ω - 100K      | 350V             | .43 (11.0)      | .16 (4.0)         | .028 x 1.1    |
| MO2      | 2.5 watts     | 0.1Ω - 120K      | 350V             | .61 (15.5)      | .22 (5.5)         | .031 x 1.5    |
| MO3      | 3.75 watts    | 1Ω - 150K        | 500V             | .97 (24.5)      | .34 (8.5)         | .031 x 1.5    |
| MO5      | 6.0 watts     | 1Ω - 180K        | 750V             | 1.61 (41.0)     | .34 (8.5)         | .031 x 1.5    |
| MO7      | 8.0 watts     | 10Ω - 150K       | 750V             | 2.09 (53.0)     | .34 (8.5)         | .031 x 1.1    |
| MMH      | 1/2 watt      | 0.1Ω - 1M        | 250V             | .26 (6.5)       | .09 (2.3)         | .024 x 1.1    |
| MM1      | 1.25 watts    | 0.1Ω - 1M        | 350V             | .35 (9.0)       | .11 (2.6)         | .028 x 1.1    |
| MM2      | 2.5 watts     | 0.1Ω - 1M        | 350V             | .43 (11.0)      | .16 (4.0)         | .031 x 1.1    |
| MM3      | 3.75 watts    | 0.1Ω - 1M        | 350V             | .61 (15.5)      | .22 (5.5)         | .031 x 1.5    |
| MM5      | 6.0 watts     | 1Ω - 1M          | 500V             | .97 (24.5)      | .34 (8.5)         | .031 x 1.5    |
| MM6      | 6.5 watts     | 10Ω - 1M         | 500V             | 1.26 (32.0)     | .34 (8.5)         | .031 x 1.1    |
| MM7      | 8.0 watts     | 10Ω - 150K       | 750V             | 1.62 (41.0)     | .34 (8.5)         | .031 x 1.1    |
| MM10     | 11.0 watts    | 10Ω - 150K       | 750V             | 2.09 (53.0)     | .34 (8.5)         | .031 x 1.1    |

\* Overload voltage is twice working voltage

### Features:

- Available in both standard size (MO) and mini size (MM).
- Low cost alternative for power carbon composition and wirewound resistors.
- Flameproof - Meets overload test of UL #1412.
- Meets solvent test of Method 215 of MIL-STD-202.
- Temperature coefficient of  $\pm 100\text{ppm}/^\circ\text{C}$ .



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## Environmental Characteristics:

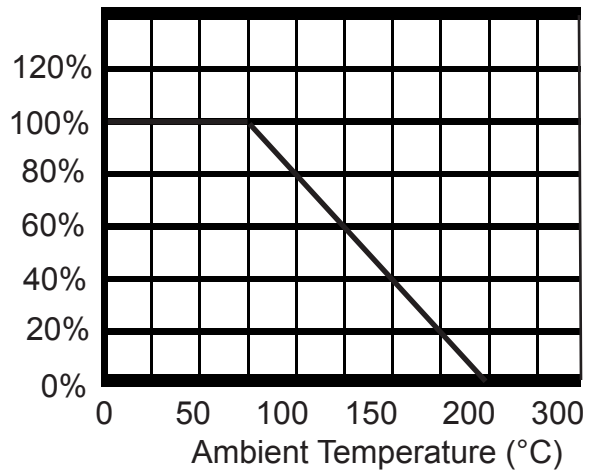
|                              |                   |
|------------------------------|-------------------|
| Moisture Resistance          | ±5% + .05Ω max.   |
| Thermal Shock                | ±1% + .05Ω max.   |
| Load Life (1,000 hours)      | ±3% + .05Ω max.   |
| Shock and Vibration          | ±0.5% + .05Ω max. |
| Resistance to soldering heat | ±0.5% + .05Ω max. |
| Terminal Strength            | ±0.5% + .05Ω max. |
| Short Time Overload          | ±0.5% + .05Ω max. |

## Operating Characteristics:

|                       |                     |
|-----------------------|---------------------|
| Operating Temp.       | -55°C to +200°C     |
| Insulation Resistance | 10GΩ, minimum       |
| Testing Spec:         | MIL-R-22684, Rev. C |
| Derated to zero load  | 200°C               |

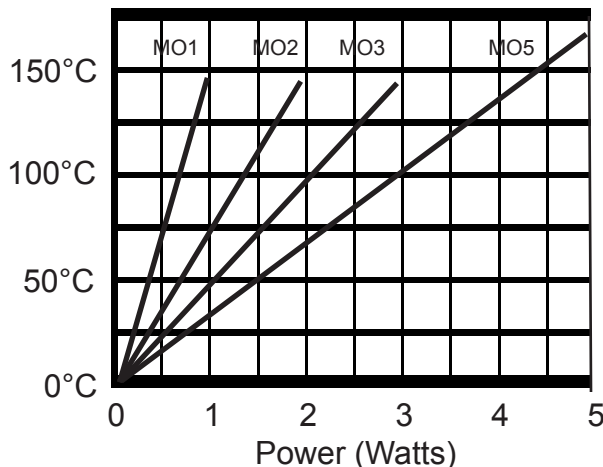
## Power - Temperature Derating Curve

| Type | Dielectric Withstand | Max. Pulse Voltage |
|------|----------------------|--------------------|
| MOH  | 400 RMS              | 400V               |
| MO1  | 700RMS               | 750V               |
| MO2  | 700RMS               | 1,000V             |
| MO3  | 800RMS               | 1,500V             |
| MO5  | 800RMS               | 1,500V             |
| MMH  | 400RMS               | 400V               |
| MM1  | 600RMS               | 750                |
| MM2  | 600RMS               | 750V               |
| MM3  | 600RMS               | 750V               |
| MM5  | 800RMS               | 1,000V             |



## Surface Temperature Rise vs. Load

Type MO



Type MM

