

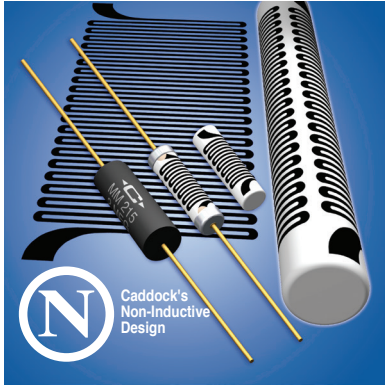
# Type MM Precision Film Resistors

Not Recommended for New Designs - See Type MS Resistors for New Designs

## High Temperature Resistors for Geophysical, Industrial, and Military Requirements

Type MM resistors have a proven performance history in industrial and military applications. Utilizing our proven Micronox® resistance films, these resistors are available in small body sizes with power ratings up to 1 Watt and resistance values up to 10 Megohms. These resistors are ideal for high temperature applications requiring excellent long term stability. The extended loadlife stability is less than 0.1% per 1,000 hours.

Most models of Type MM resistors are manufactured with Caddock's Non-Inductive Design that provides for neighboring lines to carry current in opposite directions. This efficient non-inductive construction is accomplished without derating of any performance advantages.



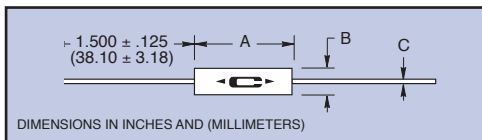
### Type MM features:

- Maximum Operating Temperature to +275°C
- High Power Rating at +125°C.
- Molded Body has tight dimensional tolerances that helps achieve compact assemblies.
- TC of 50 ppm/°C from -15°C to +105°C, ref +25°C.
- Three models with non-inductive performance.
- Two smaller models with very low inductance construction.

MM112	
MM125	
MM152	
MM177	
MM215	

Model No.	Wattage	Max. Continuous Oper. Volt. (DC or ACrms)	Max. Oper. Temp.	Dielect. Strength (ACrms)	Resistance		Dimensions in inches and (millimeters)		
					Min.	Max.	A	B	C
MM112	0.12	200	275°C	400	45 Ω	500 K	.160 ±.010 (4.06 ±.26)	.065 ±.010 (1.65 ±.26)	.018 ±.004 (.48 ±.10)
MM125	0.25	200	275°C	500	30 Ω	1 Meg	.188 ±.020 (4.78 ±.51)	.070 ±.015 (1.78 ±.38)	.020 ±.002 (.51 ±.05)
MM152	0.4	300	275°C	750	30 Ω	2 Meg	.250 ±.020 (6.35 ±.51)	.094 ±.006 (2.39 ±.15)	.025 ±.002 (.64 ±.05)
MM177	0.6	500	275°C	750	45 Ω	5 Meg	.313 ±.020 (7.95 ±.51)	.094 ±.006 (2.39 ±.15)	.025 ±.002 (.64 ±.05)
MM215	1.0	800	275°C	1,000	45 Ω	10 Meg	.400 ±.020 (10.16 ±.51)	.150 ±.010 (3.81 ±.26)	.025 ±.002 (.64 ±.05)

- Models with very low inductance construction are in shaded areas.
- Models with Caddock's Non-Inductive Resistance Pattern are in non-shaded areas.



### Specifications:

**Resistance Tolerance:** ±1% (tolerances to 0.1% on special order).

**Temperature Coefficient:** 50 ppm/°C referenced to +25°C, ΔR taken at -15°C and +105°C.

**Insulation Resistance:** 10,000 Megohms, min.

**Overload/Overvoltage:** 5 times rated power with applied voltage not to exceed 1.5 times maximum continuous operating voltage for 5 seconds, ΔR 0.5% max. or 0.5 ohm max., whichever is greater.

**Thermal Shock:** Mil-Std-202, Method 107, Cond. F, ΔR 0.2% max. or 0.5 ohm max., whichever is greater.

**Moisture Resistance:** Mil-Std-202, Method 106, ΔR 0.5% max. or 0.5 ohm max., whichever is greater.

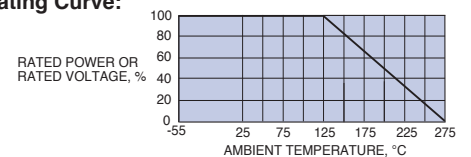
**Loadlife:** 1,000 hours at +125°C at rated power, not to exceed rated voltage, ΔR 0.5% max. or 0.5 ohm max., whichever is greater.

**Lead Finish:** Solderable. Thin gold plate over thick nickel layer on copper core.

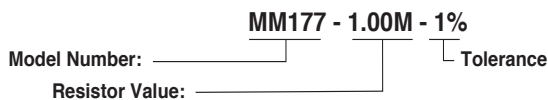
**Encapsulation:** High Temp. Molded Silicone.

**Operating Temperature Range:** -55°C to +275°C

### Derating Curve:



### Ordering Information:



**Note:** The Type MM Resistors are Not Recommended for New Designs, see Applications Engineering Note: AEN-0107. Consider using Type MS Resistors for New Designs, and contact Applications Engineering for technical assistance.

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