Type MM Precision Film Resistors

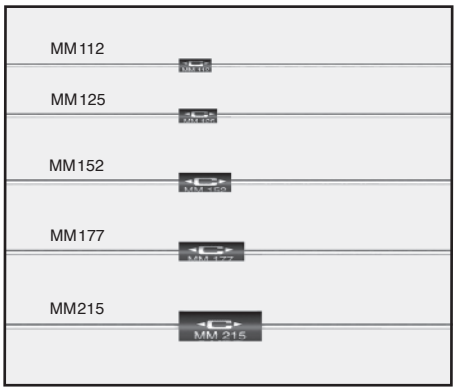
High Temperature Resistors for Geophysical, Industrial, and Military Requirements

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 stabiity. 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.

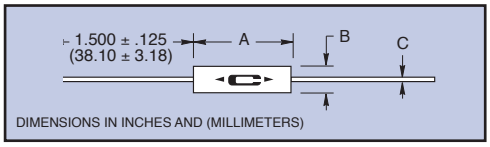
Type MM features:

- 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.



Model No.	Watt-age	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.



Ordering Information:

MM177 - 1.00M - 1%

Model Number:
Resistor Value:
Tolerance

Note: The MM Resistors are intended for high performance electronics applications that are outside the scope of the RoHS directive. Contact Caddock Applications Engineering for an RoHS compliant alternative.

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.

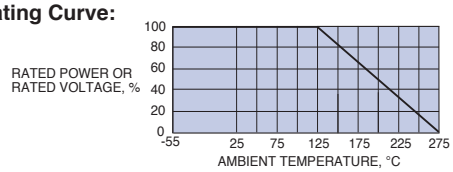
Loadlife: 1,000 hours at +125°C at rated power, not to exceed rated voltage, ΔR 0.5% max. or 0.5 ohm max., whichever is greater.

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:



CADDOCK ELECTRONICS, INC.
website: caddock.com
For Caddock Distributors listed by country see caddock.com/contact/dist.html

Sales and Applications Engineering
17271 North Umpqua Hwy.
Roseburg, Oregon 97470-9422
Phone: (541) 496-0700
email: caddock@caddock.com