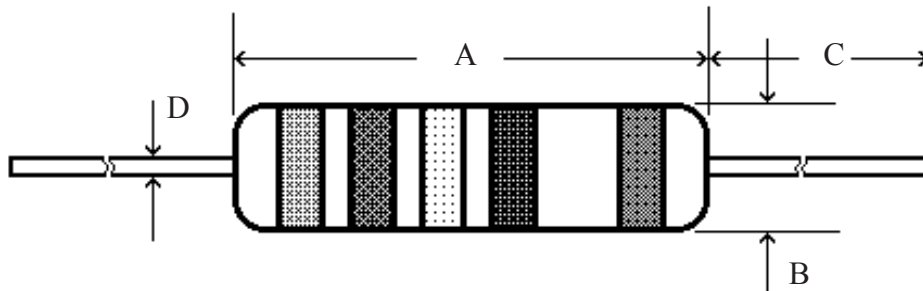


Series: MML Micro-miniature Metal Film Resistors

The VPR MML series resistor offers a general purpose metal film resistor which is suitable for any type of micro-miniature application. When you need to dissipate a 1/4 watt in a part the size of an 1/8 watt or to dissipate a 1/2 watt in the space of a 1/4 watt, this is the part to use. This part offers the outstanding electrical characteristics of a truly superior metal film resistor such as low noise, low reactance, long term stability and temperature coefficient. The MML features a high alumina core for superior mechanical strength and heat dissipation, welded leads and an effective coating system for solvent and environmental protection. All MML series parts are RoHS compliant.



Codeco Type	Power (Watts)	Resistance Range	Min. Tol.	TC (PPM)	A (in.)	B (in.)	C (in.)	D (in.)
MML-1	1/8	50Ω - 511K	0.5%	ALL	.130	.059	.98	.018
MML-2	1/4	10Ω - 2.15M	0.1%	ALL	.130	.073	1.1	.018
MML-3	1/2	10Ω - 10M	0.1%	ALL	.240	.090	1.1	.023

Features:

- Designed for high density applications
- Exceeds stability requirements of MIL-R-10509
- Wide resistance range (MIL standard values)
- Precision tolerances
- Maximum voltage: 200VRMS
- Marking: Standard Color Banding

Test Results Against Mil-R Standards

Test	MML Tolerance		Mil Requirement		
			R-39008	R-22684	R-10509
	1%	5%	Style RCR	Style RL	Style RN
Temperature Cycling, -65°C/+150°C	±0.25%	±0.25%	±4.0%	±1.0%	±0.5%
Low Temperature Operation, -65°C	±0.25%	±0.25%	±3.0%	±0.5%	±0.5%
Short Time Overload	±0.25%	±0.25%	±2.5%	±0.5%	±0.5%
Terminal Strength, 5 pound pull	±0.2%	±0.2%	±1.0%	±0.5%	±0.2%
Resistance to Soldering Heat, +350°C	±0.25%	±0.25%	±3.0%	±0.5%	±0.5%
Moisture Resistance, Mil Std 202	±1.0%	±1.0%	±15.0%	±1.5%	±1.5%
Life, 1000 Hours (1/3 watt)	±0.5%	±1.0%	-	-	-
Life, 1000 Hours (1/4 watt)	±0.25%	±0.7%	-	-	-
Life, 1000 Hours (1/8 watt)	±0.15%	±0.4%	±10.0%	±2.0%	±1.0%
Shock, 50G, 11ms.	±0.25%	±0.25%	-	±0.5%	±0.5%
Vibration-High Frequency, 10-2000Hz.	±0.25%	±0.25%	±2.0%	±0.5%	±0.5%

The percentages shown above are the percent change in resistance.
 95% of the parts tested had smaller changes than those shown above.
 Further test data is available upon request.

Power Derating

The MML resistor can be operated at ambient temperatures higher than 70°C, provided the dissipated power rating is reduced per the following derating curves:

