

Model No.	Package	Resistance		Power Rating	Max. Voltage	Thermal Resistance $R_{\theta JC}$ Film (J) to Case (C)	Max. Temp. $T_{MAX}$	Dimensions	Comments
		Min.	Max.						
MP915	TO-126 Style	0.020 $\Omega$	1.00 K	15 Watts*	200	8.33°C/Watt	150°C	Figure 1	Ceramic mounting surface
MP916	TO-220 Style	0.010 $\Omega$	0.019 $\Omega$	16 Watts*	Power Limited	7.81°C/Watt	150°C	Figure 2	Ceramic mounting surface
MP925	TO-220 Style	5.00K	100 K	25 Watts*		5.00°C/Watt	150°C	Figure 2	Ceramic mounting surface
MP930	TO-220 Style	0.020 $\Omega$	4.99 K	30 Watts*	250	4.17°C/Watt	150°C	Figure 2	Ceramic mounting surface
MP9100	TO-247 Style	0.050 $\Omega$	100 $\Omega$	100 Watts*	Power Limited	1.50°C/Watt	175°C	Figure 3	Ceramic mounting surface

**Derating Curve**

**\* Derating Using Case Temperature ( $T_C$ ):**

All power and associated overload ratings are derated based upon case temperature using the derating curve. The case temperature is measured at the center of the ceramic mounting surface, with the part properly mounted and under electrical load. Without a heat sink, when in free air at +25°C, the MP915 is rated for 1.25 watts, the MP916, MP925, MP930 are rated for 2.25 watts, and the MP9100 is rated for 3.5 watts.

A - MP915, MP916, MP925, MP930 Max. Temperature,  $T_{MAX}$  = 150°C  
 B - MP9100 Max. Temperature,  $T_{MAX}$  = 175°C

**The thermal design should satisfy the following equation:**

Case Temperature ( $T_C$ ) + [Thermal Resistance ( $R_{\theta JC}$ ) x power applied (Watts)]  $\leq T_{MAX}$  considering the full operating temperature range of the application.

**Mounting Note:** Mount on a smooth, clean, and flat heat sink surface with a thermal interface material, such as thermal grease. The entire exposed ceramic portion must be in thermal contact with the heat sink. When screw mounting, use a compression washer which provides a mounting force of 150 to 300 pounds (665 to 1330 N). This will provide sufficient pressure on the package over time and through large temperature variations to maintain the maximum power dissipation capability. Mounting torque to avoid package damage is 8 in.-lbs. (0.90 N-m). If a spring clip is used, a clip force of 8 to 30 pounds (35 to 130 N) is recommended to be applied to the center of the package. The clip should be round or smooth in the contact area to avoid concentrating the load on a small point of the plastic body of the package. Another mounting option is to use a pressure bar method which can achieve a greater mounting force with a greater contact area.

**For additional applications information regarding mounting and pulse handling see the Caddock Applications Notes at [caddock.com](http://caddock.com) or contact Applications Engineering.**

**Specifications:**

**Temperature Coefficient for MP915, MP916, MP925, and MP930:**  
 TC referenced to +25°C,  $\Delta R$  taken at +150°C

0.50 ohms and above, -20 to +80 ppm/°C  
 0.050 ohm to 0.49 ohms, 0 to +200 ppm/°C  
 0.020 ohm to 0.049 ohm, 0 to +300 ppm/°C  
 0.010 ohm to 0.019 ohm, 0 to +500 ppm/°C

**Temperature Coefficient for MP9100:**  
 TC referenced to +25°C,  $\Delta R$  taken at +175°C

0.50 ohms and above, -20 to +80 ppm/°C  
 0.050 ohm to 0.49 ohms, 0 to +150 ppm/°C

**Operating Temperature:** -55°C to  $T_{MAX}$

**Inductance:** MP915, MP916, MP925, and MP930 10nH typical; MP9100, 20nH typical, in series when measured at a point 0.2 inches from the resistor body.

**DWV:** The dielectric strength rating of 1500  $V_{rms}$  AC is based upon connections made between terminals shorted, and the metal surface the part is mounted to or a metal clip in contact with the top surface of the part.

**Insulation Resistance:** 10,000 Megohms min. The resistor element is electrically isolated from the mounting surface.

**Load Stability:** 2,000 hours at rated power.  $\Delta R \pm(1.0$  percent + 0.0005 ohm) max. Power rating dependent upon case temperature. See derating curve.

**Momentary Overload:** 1.5 times rated power with applied voltage not to exceed 1.5 times maximum continuous operating voltage for 5 seconds.  $\Delta R \pm(0.5$  percent + 0.0005 ohm) max.

**Moisture Resistance:** Mil-Std-202, Method 106.  $\Delta R \pm(0.5$  percent + 0.0005 ohm) max.

**Thermal Shock:** Mil-Std-202, Method 107, Cond. F.  $\Delta R \pm(0.5$  percent + 0.0005 ohm) max.

**Shock:** 100G, Mil-Std-202, Method 213, Cond. I.  $\Delta R \pm(0.4$  percent + 0.0005 ohm) max.

**Vibration, High Frequency:** Mil-Std-202, Method 204, Cond. D.  $\Delta R \pm(0.4$  percent + 0.0005 ohm) max.

**Terminal Strength:** Mil-Std-202, Method 211, Cond. A (Pull Test) 5 lbs.  $\Delta R \pm(0.2$  percent + 0.0005 ohm) max.

**Terminal Material:** Solderable

**Measurement Note:** For these specifications, resistance measurement shall be made at a point 0.2 inch (5.08 mm) from the resistor body.

**Figure 1 TO-126 Style MP915**

**Figure 2 TO-220 Style MP916, MP925 and MP930**

**Figure 3 TO-247 Style MP9100**

DIMENSIONS IN INCHES AND (MILLIMETERS)

# Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

## Caddock:

[MP930-4.0-1%](#) [MP930-0.04-5%](#) [MP930-0.33 1%](#) [MP930-0.075-1%](#) [MP925-30.0K-1%](#) [MP930-500-1%](#) [MP930-100-1%](#) [MP930-1.5-1%](#) [MP915-7.5-1%](#) [MP915-0.40 1%](#) [MP915-470-1%](#) [MP915-4-1%](#) [MP930-3.0K-1%](#) [MP930-2.50-1%](#) [MP915-500-1%](#) [MP925-100K-1%](#) [MP930-150-1%](#) [MP915-100-1%](#) [MP930-200-1%](#) [MP930-0.75-1%](#) [MP930-1.5K-1%](#) [MP9100-100-1%](#) [MP9100-30.0-1%](#) [MP9100-33-1%](#) [MP9100-15-1%](#) [MP9100-40.0-1%](#) [MP9100-5.6-1%](#) [MP925 5.10K 1%](#) [MP915-0.15-1%](#) [MP915-0.33-1%](#) [MP915-200-1%](#) [MP930-56-1%](#) [MP930-30.0-1%](#) [MP915-15-1%](#) [MP9100-7.50-1%](#) [MP930-39-5%](#) [MP925-75.0K-1%](#) [MP930-33.0-1%](#) [MP930-3.30-1%](#) [MP930-15.0-1%](#) [MP925-7.5K-1%](#) [MP925 82.0K 1%](#) [MP9100-2.5-1%](#) [MP9100-8.00-1%](#) [MP9100-0.25-1%](#) [MP9100-12.0-1%](#) [MP930-0.40-1%](#) [MP930-0.25-1%](#) [MP915-0.75-1%](#) [MP915-560- 1%](#) [MP930-3.3K-1%](#) [MP9100-3-1%](#) [MP9100-0.75-1%](#) [MP9100-1.50-1%](#) [MP9100-0.3-1%](#) [MP9100-0.4-1%](#) [MP930-250-1%](#) [MP915-0.025-5%](#) [MP930-0.15-1%](#) [MP915-250-1%](#) [MP915-0.020-5%](#) [MP915-0.050-1%](#) [MP915-0.10-1%](#) [MP915-0.20-1%](#) [MP915-0.50-1%](#) [MP915-1.00-1%](#) [MP915-2.00-1%](#) [MP915-5.00-1%](#) [MP915-10.0-1%](#) [MP915-20.0-1%](#) [MP915-25.0-1%](#) [MP915-50.0-1%](#) [MP915-75.0-1%](#) [MP915-1.00K-1%](#) [MP916-0.010-5%](#) [MP930-0.020-5%](#) [MP930-0.050-1%](#) [MP930-0.10-1%](#) [MP930-0.20-1%](#) [MP930-0.50-1%](#) [MP930-1.00-1%](#) [MP930-2.00-1%](#) [MP930-5.00-1%](#) [MP930-10.0-1%](#) [MP930-20.0-1%](#) [MP930-25.0-1%](#) [MP930-50.0-1%](#) [MP930-75.0-1%](#) [MP930-1.00K-1%](#) [MP930-2.00K-1%](#) [MP925-5.00K-1%](#) [MP925-10.0K-1%](#) [MP925-20.0K-1%](#) [MP925-50.0K-1%](#) [MP9100-0.050-1%](#) [MP9100-0.10-1%](#) [MP9100-0.20-1%](#) [MP9100-0.50-1%](#) [MP9100-1.00-1%](#) [MP9100-2.00-1%](#)