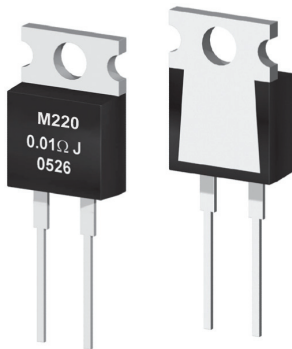


# Resistors

## Power Resistor

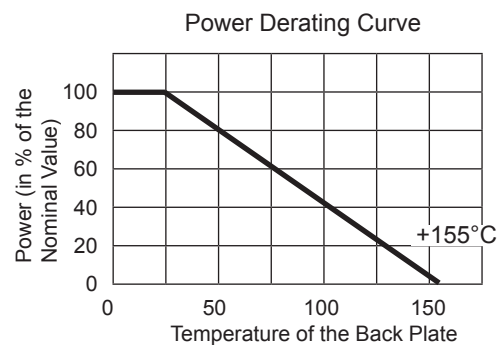
M220 - series



- Power Rating up to 50 Watt (with Heat-Sink)
- Any Resistance from 0,01Ω - 51kΩ
- Standard Tolerance  $\pm 1\%$
- Standard TCR to 50ppm
- Low Inductance
- Induktionsarm

Specification	M220		
Resistance Range	220Ω - 51kΩ	0,01Ω - 51kΩ	0,01Ω - 51kΩ
Power (1 Watt without Heat-Sink)	10W	35W	50W
Thermal Resistance	5,9 K/W	3,3 K/W	2,3 K/W
Standard Tolerance (other on request)	1% bei $R \geq 0,1\Omega$ / 5%		
Temperature Coefficient	$\pm 50\text{ppm/K}$ ( $R \geq 10\Omega$ ) $\pm 100\text{ppm/K}$ ( $0,1\Omega \geq R < 10\Omega$ ) $\pm 250\text{ppm/K}$ ( $R < 0,1\Omega$ )		
Operating Temperature Range	-55 °C - 155 °C		
Operating Voltage (max.)	500 V		
Withstanding Voltage	2000 VAC		
Insulation Resistance	$\geq 1\text{G}\Omega$		
Inductance	8,22 nH (at Stand Off)		

Mechanical Data	
Housing	Epoxy - Moulded
Resistance Element	NiCr or RuO
Substrate	Alumina
Leads	Copper, Tin Plated
Back Plate	Copper, Ni Plated



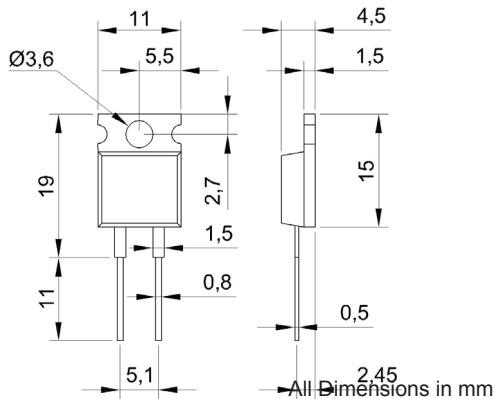
Parameter	Test	$\Delta R$
Load Life	90 min ON, 30 min OFF, 1000h at 25°C	$\pm 1\%$
Humidity	90 - 95% RH, 0,1W, 1000h at 40°C	$\pm 1\%$
Temperature Cycle	-55°C 30 min, +155°C 30min. 1000h	$\pm 0,25\%$
Vibration	IEC60068-2-6	$\pm 0,25\%$
Soldering Heat Resistance	350°C $\pm 5^\circ\text{C}$ , 3 Seconds	$\pm 0,1\%$
Solderability	230°C $\pm 5^\circ\text{C}$ 3 Seconds	>95% Covered

# Resistors

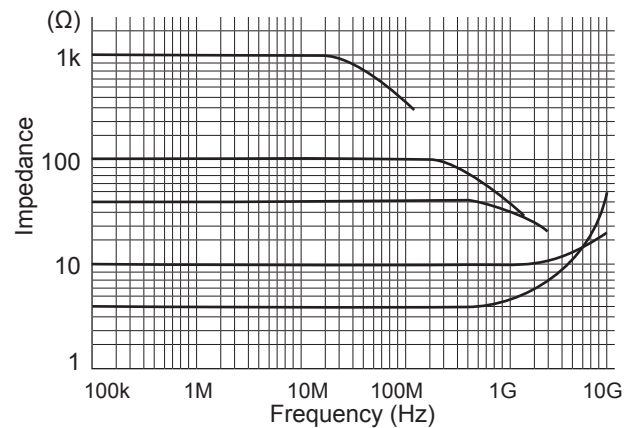
## Power Resistor

M220 - series

### Technical Drawing



### Frequency Characteristics



### Power Rating Notes:

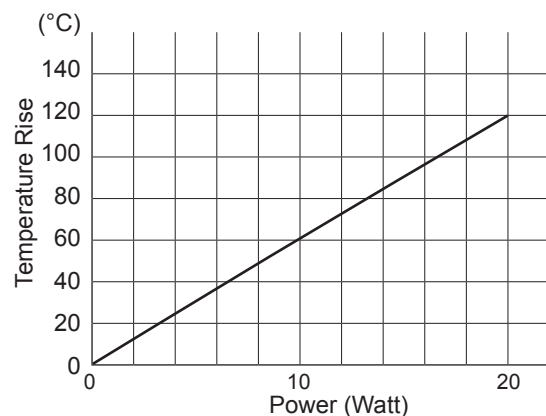
The M126 series resistors have to be combined with a correctly dimensioned heat-sink. The internal temperature of the resistor should not exceed 155°C.

Formula for the calculation of an appropriate heat-sink:

$$R_{\Theta H} = \frac{T_{\max} - (P \times R_{\Theta R}) - T_U}{P}$$

- $R_{\Theta H}$  Thermal Resistance of the Heat-Sink (K/W)
- $R_{\Theta R}$  Thermal Resistance of the Resistor (K/W)
- $T_{\max}$  Maximum Temperature of the Resistor
- $T_U$  Ambient Temperature of the Heat-Sink (°C)
- $P$  Power applied to the Resistor (W)

### Temperature of the Back Plate



### Mounting Notes:

For the mounting of the resistor a special thermal grease has to be used. We recommend a washer to press the resistor against the heat-sink.

The back plate has to be isolated from both pins and metal cases of the device.

### Bestellinformation

M126	W1%	TK50	10k000	50W
Type	Resistance Tolerance	Temperature Coefficient	Resistance Range	Power
	1%	50 ppm (10Ω - 51kΩ)	(0,02Ω - 51kΩ)	10W
	5%	100 ppm (0,1Ω - 9,9Ω)		35W
		250ppm (0,02Ω - 0,099Ω)		50W

Note: All specifications and information in this data sheet are not considering customer's special requirements. All containing information of this data sheet are not a binding description of the product's properties. MEGATRON is not responsible for any damage caused by an improper use of the product. The customer has the responsibility to check the usability of the product in his application. MEGATRON does not guarantee the reproducibility of their publications.