

Data Sheet for Precision Resistors

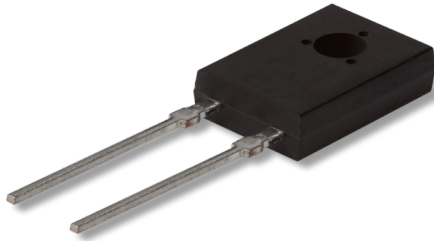


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Power Resistor (thin film)

Series M126



- Power rating up to 20 Watt (with heat-sink)
- Resistance range from 0,01Ω..51kΩ
- Resistance tolerance up to ±1%
- TCR up to ±50ppm/°C
- TO-126 housing
- Low induction (<50nH)

Electrical Specification

Resistance range	0,01Ω..51kΩ
Resistance tolerance	±1%..±5%
Power rating @ 25°C (0W @ +155°C)	20 W with heat-sink 1 W without heat-sink
Max. working voltage	500V
TCR-rate	±50ppm/°C @ R ≥ 10Ω ±100ppm/°C @ 0,1Ω ≤ R < 10Ω ±250ppm/°C @ R < 0,1Ω
Working temperature range (max.)	-55..+155°C

Mechanical Specification

Resistance technology / material	Thin film
Housing material	Epoxy moulded
Design	TO-126
Connections	Radial cooper tinned

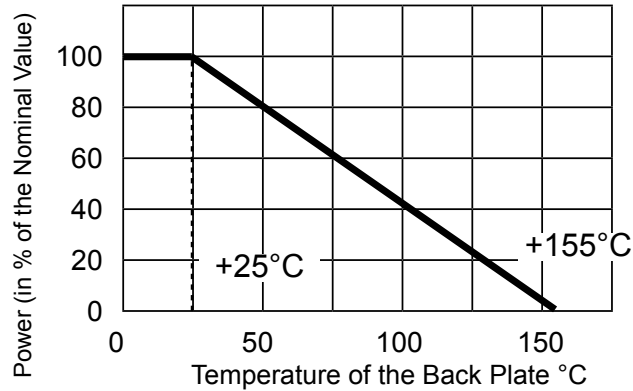
Parameters	Test Conditions	Specification ΔR
Load life	90 min on, 30 min off, 1000h	±1% +0,05Ω
Moisture resistance	90..95% RH, 0,1W, 1000h @ 40°C	±1% +0,05Ω
Thermal shock	-55°C 30 min, +155°C 30min. 1000h	±0,25% +0,05Ω
Resistance to soldering heat	350°C, 3 sec.	±0,1% +0,05Ω
Dielectric strength: 2000 VAC		
Max. current: 25 A		
Thermal resistance: 5,9 K/W		

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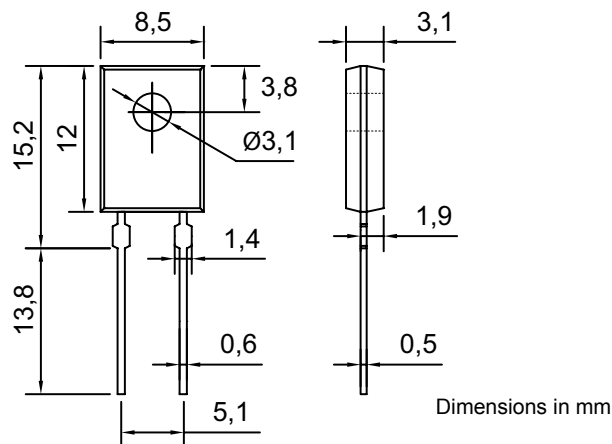
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Power Derating Curve



Technical Drawing



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:

$$R_{OH} = \frac{T_{max} - (P \times R_{OR}) - T_U}{P}$$

- R_{OH} Thermal Resistance of the Heat-Sink(°C/W)
- R_{OR} Thermal Resistance of the Resistor (°C/W)
- T_{max} Maximum Temperature of the Resistor
- T_U Ambient Temperature of the Heat-Sink (°C)
- P Power applied to the Resistor (W)

Mounting Notes:

The resistor must be attached to a suitable heat-sink. Mount resistor using thermal grease to a clean, flat surface. Use a compression washer to provide 665 to 1330N of mounting force. Torque mounting screw to 0,9 Nm. Back plate is isolated from both pins.

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Order code				
Description		Selection: standard=black/bold, possible options=grey/cursive		
Series:	M126			
Resistance tolerance: ±1% @R ≥ 0,1 Ω ±5		W1% W5%		
Temperature coefficient: ±50ppm/°C @ R ≥ 10Ω ±100ppm/°C @ 0,1Ω ≤ R <10Ω ±250ppm/°C @ R < 0,1Ω			TK50 TK100 TK250	
Resistance value - please choose: From 0,01Ω to ≤ 51kΩ				xxxkxxx

Order Example	Series	Resistance tolerance	Temperature coefficient	Resistance value
Choice	M126	±1%	50ppm/°C	10,1kΩ
Code	M126	W1%	TK50	10k100