

ISA-PLAN®- Precision Resistor Type PBH

Spec Sheet R371-1/2 July 97

Technical Data	
Resistance range	2 mOhm - 100 Ohm
Tolerances	1 %, 5 %
Temperature coefficient (R > 20 mOhm)	< 50 ppm/K (20 °C to 60 °C)
Applicable temperature range	-55 °C to +125 °C
Load capacity	3 W / 10 W with heatsink provided
Thermal resistance to aluminum base plate	$R_{th} < 4 \text{ K/W}$
Thermal resistance to ambiente	$R_{th} < 20 \text{ K/W}$
Dielectric withstanding voltage	500 V AC
Inductance (R = 100 mOhm)	< 20 nH
Stability (nominal load at 70 °C)	deviation < 0.5 % after 2,000 h

Remarks:

- Standard resistance values according to E12 with the additional values of 2 and 5
- Minimum quantity of other values on request
- Tolerance 0.5% for values of 10 mOhm up

The Resistor type **PBH**, which is very similar to type TO 247 for high power transistors, features small dimensions complemented with high load capacity and compatibility with active components.

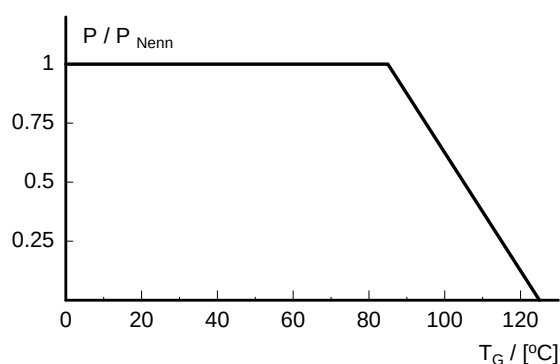
The use of the precision resistance material **MANGANIN** as well as optimization of conductor leads and resistance structure result in a low temperature coefficient, a long-term stability and low inductance.

The resistor is mounted through a center bore to the heatsink, whereby the large area of the base plate will function as an optimum heat transfer. The thermal resistance between resistor layer and aluminum base plate is rated below 4 K/W, so that the temperature of the resistor foil

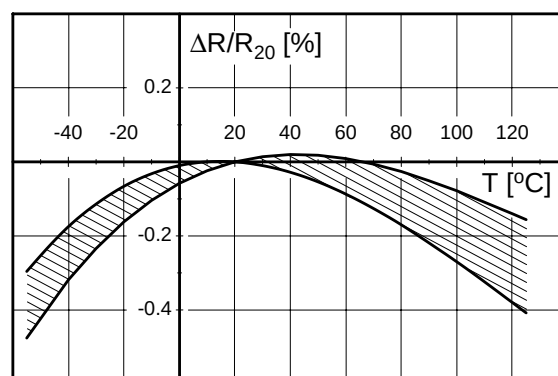
will rise only little at a nominal load of 10 W, compared with customary resistors. This again results that the absolute resistance deviation caused by the temperature coefficient, is very low under load and will serve for a good stability on overloading.

The resistor is ideally suited for applications in power electronic and control technique, as most applications at inductive loading will require operation with switched power regulating units.

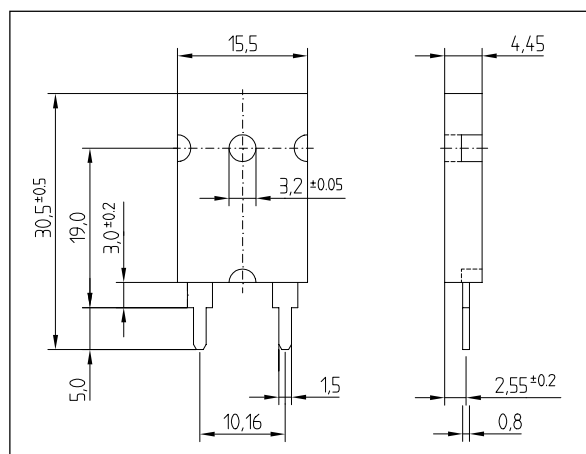
Short connection distances and small dimensions with high loading capacity and low inductance are a prerequisite for obtaining high switching frequencies.



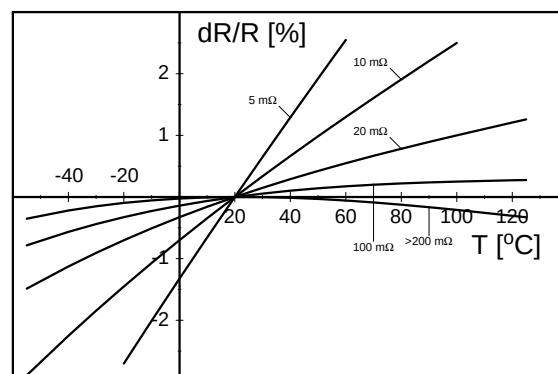
power derating curve



Temperature dependence of the electrical resistance of ISA-PLAN Resistors



dimensions (mm)



Change of the R(T)-curve to the TCR of copper terminals for very low ohmic 2-terminal-resistors

ordering example: PBH - R100 - F1 - 1

type	resistance value	terminal	tolerance
PBH	100 mOhm	F1	1 %

(Technical modifications reserved)

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