

DEFINITION OF TERMS

Nominal Resistor Value (R_N):	Nominal (printed) resistor value, i.e. 22R (value of the order).
Absolute Resistor Value:	Real resistor value of the resistor, i.e. 22R0253.
Tolerance:	Max. allowed deviation of the absolute resistor value from the nominal resistor value in percent from the nominal resistor value. (delivery tolerance), i.e. 22R \pm 1%
Accuracy:	Resolution / number of digits from the mantissa of the nominal resistor value, i.e. 5K045 (4 digits accuracy). The accuracy is not the tolerance even if there is a cohesion.
Stability:	Max. allowed change of the absolute resistor value depending from time and stress. Normally it is mentioned in percent from the absolute resistor value at $t = 0$ (reference value).
Temperature Change:	Change of the absolute resistor value dependency of the temperature at the resistance element. It is normally mentioned in ppm (parts per million) of the absolute resistor value at the reference temperature T_0 (relative change of temperature dR/R).
Temperature Coefficient (TC):	Relative change of temperature of the absolute resistor value at temperature T relative to the change of temperature $(T - T_0)$. For Ultra-precision resistors the reference temperature T_0 is 25°C. It is stated in ppm/K.
TCR-Alignment (Tracking):	Max. allowed TC difference of different resistors. (i.e. double-resistors, pair resistors or networks)
Power Dissipation:	When applying an electric voltage in a resistor, the energy is converted into heat. The result of the energy per unit time is the power dissipation. ($P = W / t$, $P = U * I$, $P = R * I^2$, $P = U^2 / R$). Depending on the heat removal, there is a temperature rise of the resistance element.
Inherent Temperature:	Real temperature of the resistance element. The inherent temperature is the sum of the ambient temperature and the additional temperature of the power dissipation. (excess temperature dT_R).
Limiting Temperature:	Max. allowed inherent temperature in exceeding the limiting temperature it is possible to have non-reversible alteration of the resistance, a change in its properties or its demolition.
Nominal Power Dissipation:	Max. permanent allowed power dissipation without exceeding the limiting temperature of the resistance. The nominal power dissipation mentioned in the specifications belongs to these conditions: - Free-standing assembly. - Ambient temperature of 70°C without additional cooling or, - Assembled on a heatsink with optimal fixed mounting (pressurized and use of a heat conduction paste).

Thermal Resistance (Rth):	Factor of proportionality between power dissipation and over-temperature $R_{th} = dT / P$. The specifications mentioned in the data sheet for heatsink mounted resistors (R_{thj-c}) are defined as thermal resistance between the resistance element and case bottom plate.
Impulse Strength:	Max. allowed short-duration (impulse) electric energy, without exceeding the limiting temperature.
Limiting Voltage:	Also referred to dielectric strength; max. allowed voltage applied to the resistor.
Limiting Current:	Max. allowed current through the resistor.
Insulation Strength:	Also referred to breakdown rating; max. allowed voltage between the resistance element and the environment (i.e. chassis or heatsink).
Standard Conditions:	Measurement conditions for defining the absolute resistor value, tolerance and stability of the resistor. In the laboratory and production process the reference temperature is $25^{\circ}\text{C} \pm 2^{\circ}\text{C}$.