

FEATURES

- Resistance from 1Ω
- Temperature Coefficients to 3ppm/°C
- Low Inductance
- Inductance minimised Types (option)
- RoHS compliant



RATED VALUES (IEC 60115-1)

Resistance Range	Ω	1Ω to 10MΩ (any non E-series resistance value)
Resistance Tolerance	%	±0,05%; ±0,1%; ±0,25%; ±0,5%; ±1%
Temperature Coefficient	ppm/°C	±50ppm/°C; ±25ppm/°C; ±15ppm/°C; ±10ppm/°C; ±5ppm/°C; ±3ppm/°C
Power P70	(W)	0,4Watt; (Power P40: 0,6 Watt)
Working Voltage (U _{max} AC/DC)	V	300V or √(P x R)
Insulation Resistance (R _{ins})	Ω	>10GΩ
Operating Temperature Range (T)	°C	TCR ≥ 25ppm/°C for -25°C to 125°C; TCR < 25ppm/°C for -10°C to 85°C
Voltage Coefficient	ppm/V	< 1ppm/V

RANGES

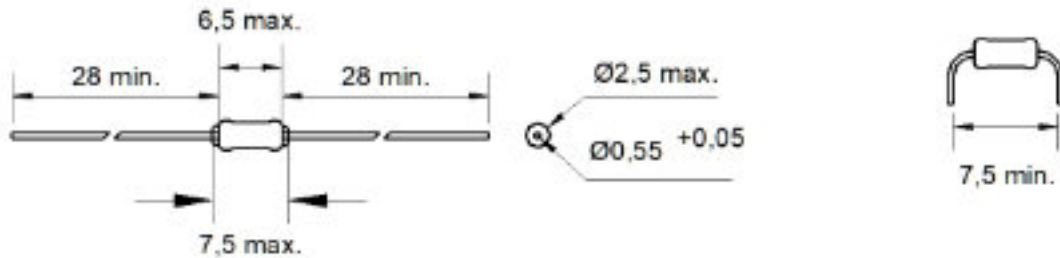
TCR*	Tolerance- / Resistance Ranges				
	±0,05% / Ω	±0,1% / Ω	±0,25% / Ω	±0,5% / Ω	±1,0% / Ω
±3ppm/°C	50R0 - 120K	30R0 - 200K	30R0 - 200K	30R0 - 200K	-
±5ppm/°C	50R0 - 250K	10R0 - 500K	10R0 - 500K	10R0 - 500K	-
±10ppm/°C	50R0 - 510K	5R00 - 1M00	5R00 - 1M00	5R00 - 1M00	-
±15ppm/°C	50R0 - 510K	5R00 - 1M50	5R00 - 2M00	5R00 - 2M00	1R00 - 2M00
±25ppm/°C	50R0 - 510K	5R00 - 3M00	5R00 - 3M00	5R00 - 5M00	1R00 - 5M00
±50ppm/°C	50R0 - 510K	5R00 - 3M00	5R00 - 3M00	2R00 - 10M00	1R00 - 10M00

*Temperature coefficient

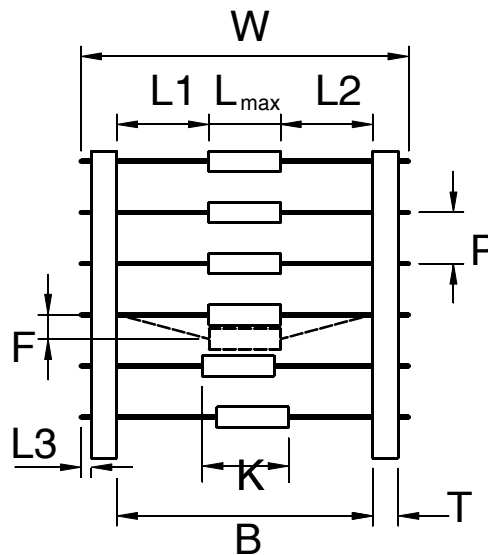
CONSTRUCTION

Resistor Material	NiCr - Alloy
Substrate	Alumina
Coating	Epoxy, Cleaning with ethanol, isopropanol, methanol, water-based cleansing agents
Leads	Tin plated copper wire
Marking	For quantities of min. 100 pieces plain text or specific delivery quantities with colour ring coding.

DIMENSIONS



PACKAGING (STANDARD: TAPED AT QTY. 100PIECES)



Reel	A	C	N	W1	W2
12"	305,0 ±1,5	29,0 ±1,0	75,0 ±1,0	W2 +5...+8	B +1,5 ... +8

Lead Taping Specifications

Lead Extension (L3)	0
Centring Tolerance (K)	±0,5
Tape (T)	5,0...6,5
Tape Width max. (W)	65,0 max.
Deflection (F)	1,2 max.
$L1 = (B - L_{max} + L2) \pm 1,5$	
$L2 = (B - L_{max} + L1) \pm 1,5$	

Diameter of Resistor Body - Spacing	
Diameter of the Resistor Body (D)	≤ 5,0 ±0,5
Distance between Resistors (P)	5,0 ±0,5

Tape Spacing	
Length of Resistor Body (L _{max})	≤ 16,5
Tape Inside Distance (B)	52,0

All Dimension in mm

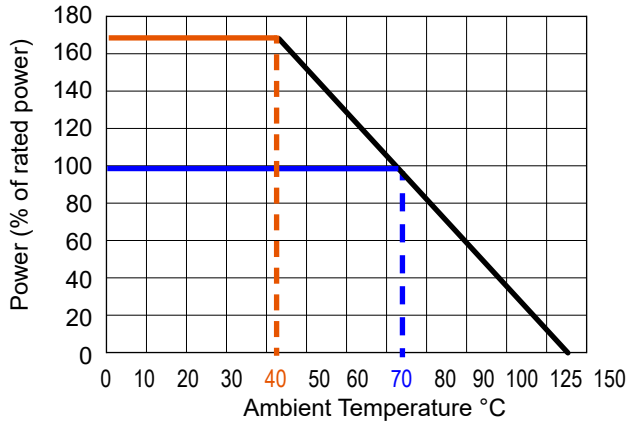
PACKAGING QUANTITIES

Taping / Ammo Pack	Taping at min. quantity 100pcs., Plastic Bag or Ammo Pack
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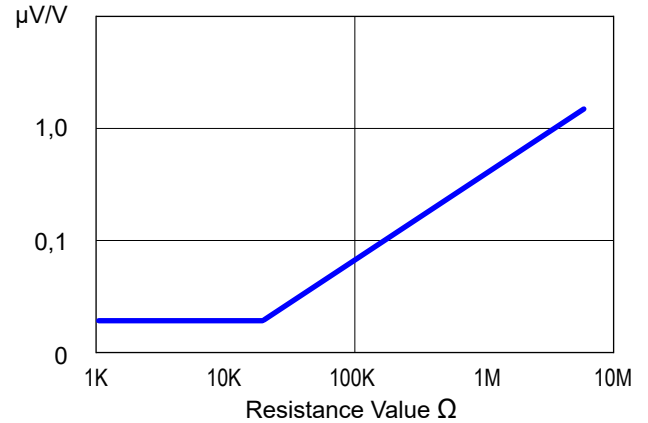
BP - Series, BP0207

Precision Metal Film Resistors

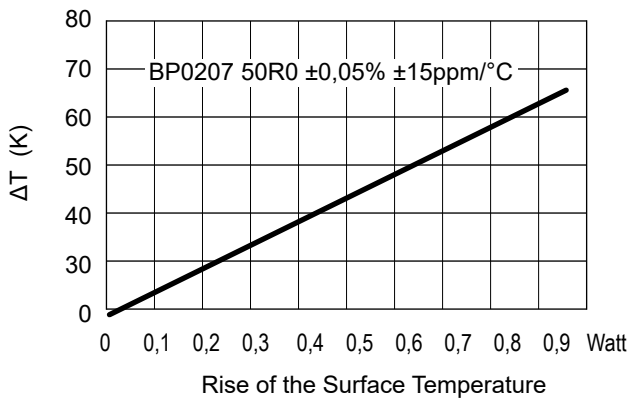
POWER DERATING CURVE



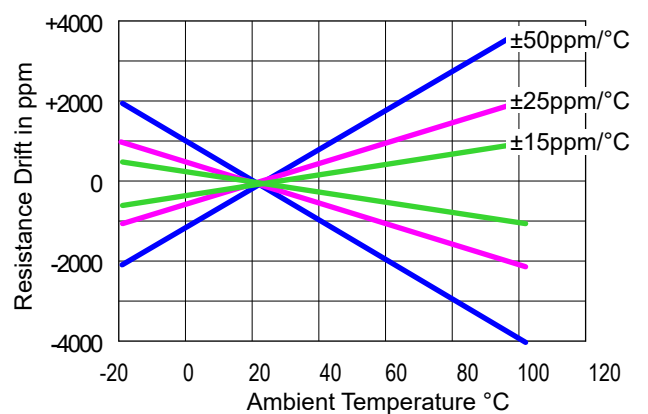
CURRENT NOISE



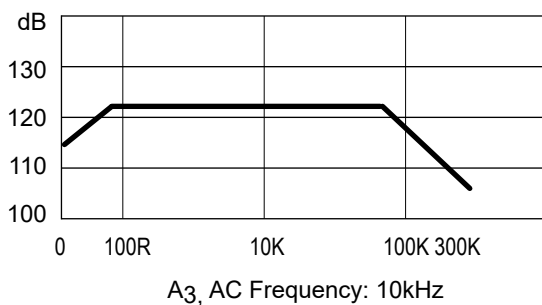
TEMPERATURE RISE



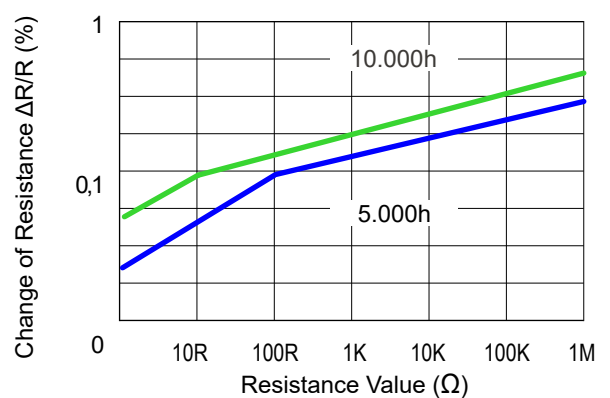
TEMPERATURE COEFFICIENT VARIATION



NON - LINEARITY (SINUS U_{AC})



STABILITY (P₇₀ = 0,4Watt)



PERFORMANCE

IEC 60115-1	Test	Conditions of Test	Specification (ΔR)
4.13	Short Time Overload	2,5 x rated Power or 2 x U_{max} , 5s	$\pm(0,1\% R + 0,01\Omega)$
4.16	Terminal Strength	(Tensile Bending and Torsion)	$\pm(0,01\% R + 0,01\Omega)$
4.17	Solderability	260°C, max. 2s	95% Covered Contacts
4.18	Soldering Resistance	260°C $\pm 5^\circ\text{C}$, max. 10s	$\pm(0,1\% R + 0,01\Omega)$
4.19	Thermal Shock	-65°C 30 Minutes, +155°C 30 Minutes, 5 Cycles	$\pm(0,1\% R + 0,01\Omega)$
4.23	Climatic Sequences		$\pm(0,5\% R + 0,05)$ No Visible Damages
4.23.2	Dry Heat	125 °C; 16 h	
4.23.3	Damp Heat	55 °C; 24 h; 90 % to 100 % RH; 1 cycle	
4.23.4	Low Temperature	- 55 °C; 2 h	
4.23.5	Low Air Pressure	8.5 kPa; 2 h; 15 °C to 35 °C	
4.24	Moisture Resistance	+40°C, 93% RH, Rated Voltage, 56 Days	$\pm(0,5\% R + 0,05)$
4.25	Endurance	70°C, (U_{rated}) or ($U_{max.}$), 1000h,	$\pm(0,5\% R + 0,05\Omega)$
	Endurance	70°C, (U_{rated}) or ($U_{max.}$), 8000h,	$\pm(1,0\% R + 0,05\Omega)$

Note: The above tests and test conditions refer to specifications according to IEC 60115-1 and IEC 60068-2.

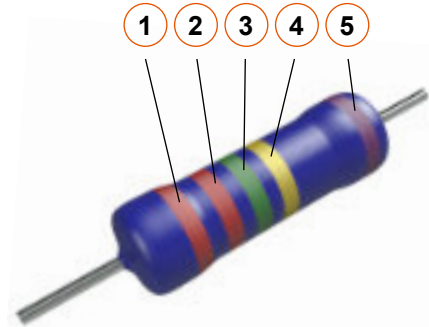
Further details regarding electrical specifications and temperature behaviour are based on nominal values under typical conditions of use.

For reference measurements, the measuring tap is of $24 \pm 2\text{mm}$ from the body end of the resistor. Resistors with a nominal value less than 100 ohms or resistance tolerances $\leq \pm 0.1\%$ should be measured by using a 4-wire method to reduce measurement errors.

- **Induction-minimized Version (option N):** For high-frequency applications, the self-inductance of the resistors can be reduced by special trimming methods. Due to the construction, this option is offered in a resistance range from 10 Ω to 1.2k Ω . If the resistance values are outside this range, the capacitive reactance predominates, effects of reducing the inductive reactance are not significant or measurable.
- **Stability-improved Version (V):** If there are higher requirements for the stability of a resistor in analogue circuits (long-term stability), the stability behaviour can be improved by proven aging methods.

MARKING*

	Ring 1 - 3 Digit	Ring 4 Multiplier	Ring 5 Tolerance
Silver		10^{-2}	$\pm 10\%$
Gold		10^{-1}	$\pm 5,0\%$
Black	0	10	
Brown	1	10^1	$\pm 1,0\%$
Red	2	10^2	$\pm 2,0\%$
Orange	3	10^3	
Yellow	4	10^4	
Green	5	10^5	$\pm 0,50\%$
Blue	6	10^6	$\pm 0,25\%$
Violet	7	10^7	$\pm 0,10\%$
Grey	8	10^8	$\pm 0,05\%$
White	9	10^9	



*min. 100pcs. with plain text, for all other quantities optional ring - coding

Note: For orders less 100 pieces, the resistors are not marked and/or taped. Optional, against surcharge, an imprint is possible. Please refer explicitly to the required marking when placing an order.

OPTIONS

Inductance minimised Type (N)	$\pm 0,5\%$, Range 2R - 1K (only $\pm 50\text{ppm}^\circ\text{C}$); $\pm 1\%$, Range 1R - 1K2
Improved Stability (V)	Pre - aged for better long term stability
Matched Sets (on Request)	Resistor sets, matched (selected) by T.C.R and tolerance

ORDERING INFORMATION

BP0207 100R00 0,1% TK25 (BP0207 100 Ω ; $\pm 0,1\%$; $\pm 25\text{ppm}^\circ\text{C}$)

Type	Special	Resistance	Tolerance	Temperature Coefficient	Power	Option	Packaging
BP0207	- XXX	0R1000	0,05%	TK3	-	V	-
		100R00	0,1%	TK5		N	
		10K000	0,25%	TK10			
		1M0000	0,5%	TK15			
			1,0%	TK25			
				TK50			