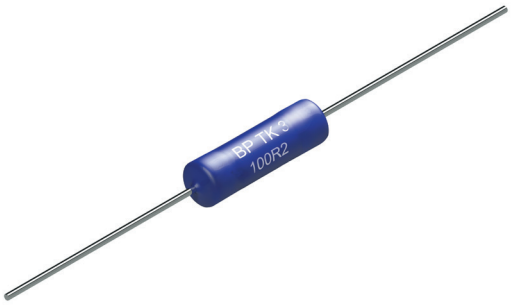
PRECISION RESISTORS

BP - Series, BP0207

Precision Metal Film Resistors

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 5MΩ (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 P_{70}	(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.

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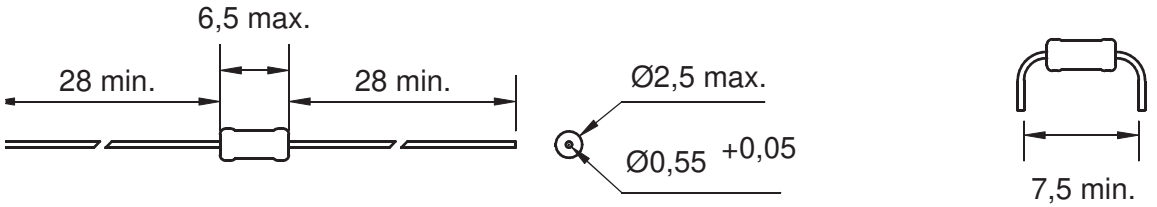
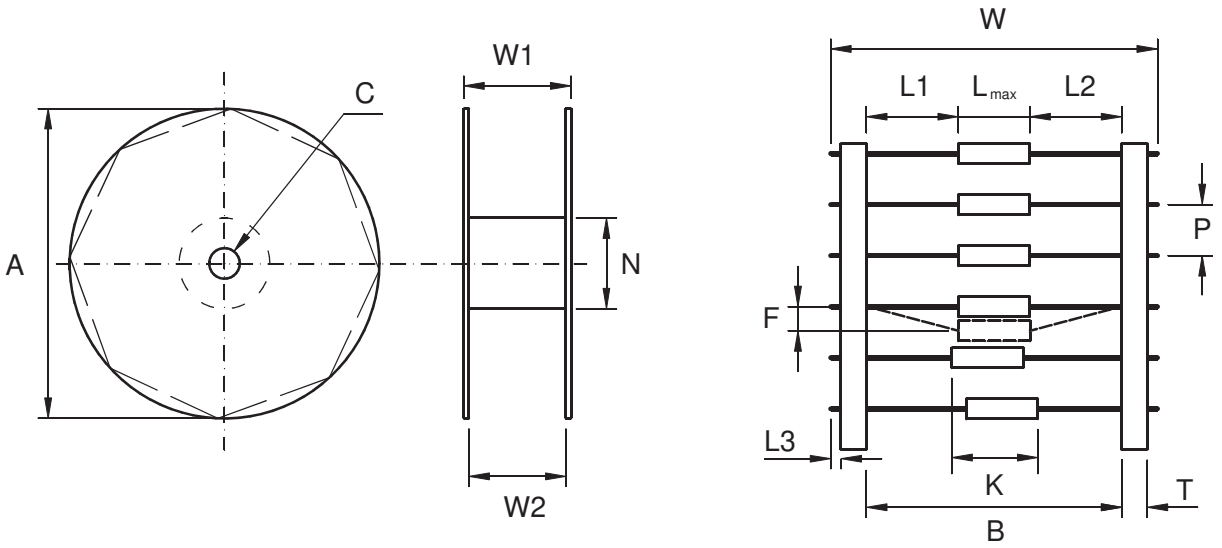
DIMENSIONS



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

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

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) ±1,5	
L2 = (B - L_{max} + L1) ±1,5	

All Dimension in mm

PACKAGING QUANTITIES

Taping / Ammo Pack	Taping at min. quantity 100pcs., Plastic Bag or Ammo Pack
Tape on Reel	at min. quantity 5000pcs, less upon request

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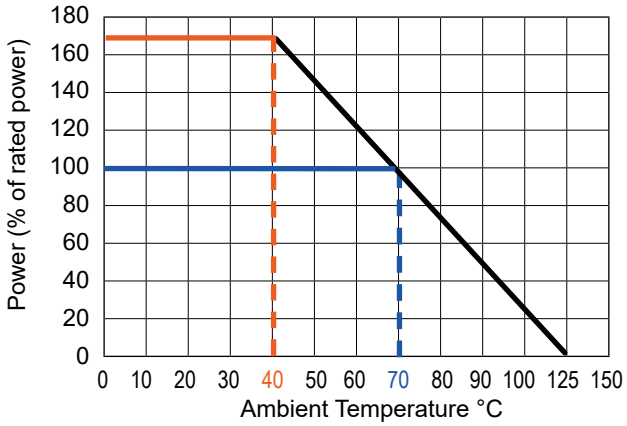
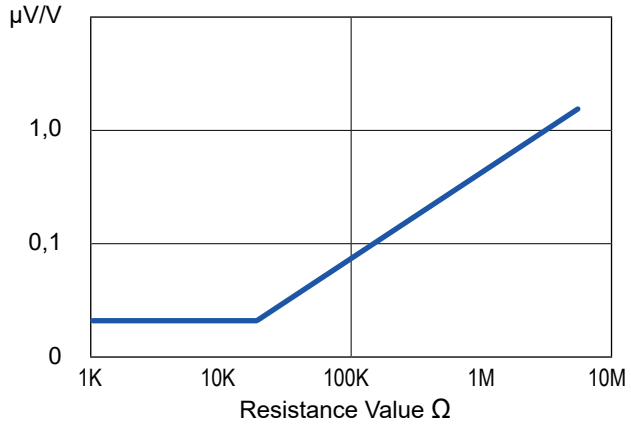
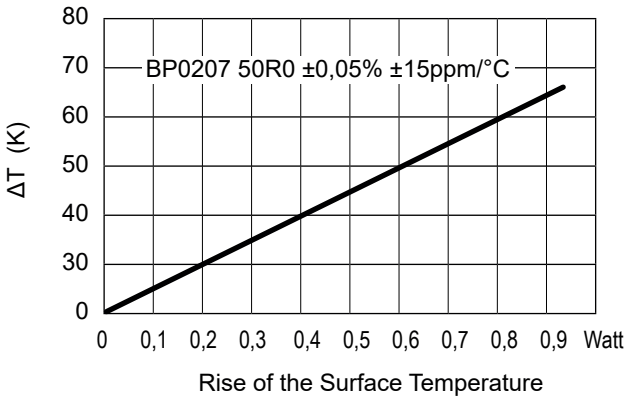
POWER DERATING CURVE



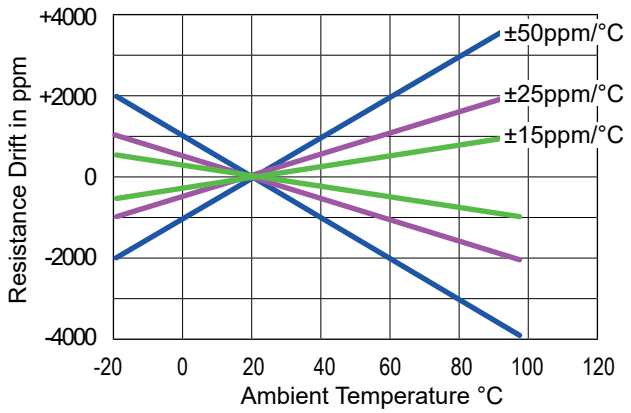
CURRENT NOISE



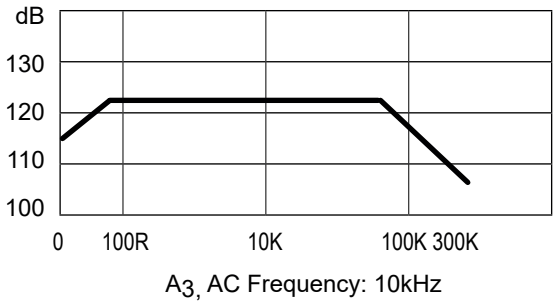
TEMPERATURE RISE



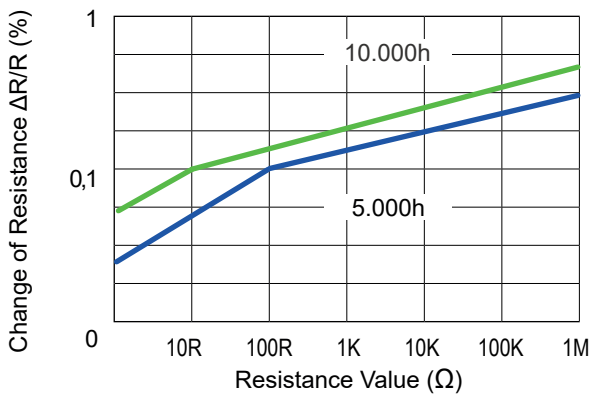
TEMPERATURE COEFFICIENT VARIATION



NON - LINEARITY (SINUS U_{AC})



STABILITY (P_{70} = 0,4Watt)



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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	±(0,1% R +0,01Ω)
4.16	Terminal Strength	(Tensile Bending and Torsion)	±(0,01% R +0,01Ω)
4.17	Solderability	260°C, max. 2s	95% Covered Contacts
4.18	Soldering Resistance	260°C ±5°C, max. 10s	±(0,1% R +0,01Ω)
4.19	Thermal Shock	-65°C 30 Minutes, +155°C 30 Minutes, 5 Cycles	±(0,1% R +0,01Ω)
4.23	Climatic Sequences		±(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	±(0,5% R +0,05)
4.25	Endurance	70°C, (U_{rated}) or ($U_{max.}$), 1000h,	±(0,5% R +0,05Ω)
	Endurance	70°C, (U_{rated}) or ($U_{max.}$), 8000h,	±(1,0% R +0,05Ω)

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 ± 2mm from the body end of the resistor. Resistors with a nominal value less than 100 ohms or resistance tolerances ≤ ± 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 1Ohm to 1.2kOhm. 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.

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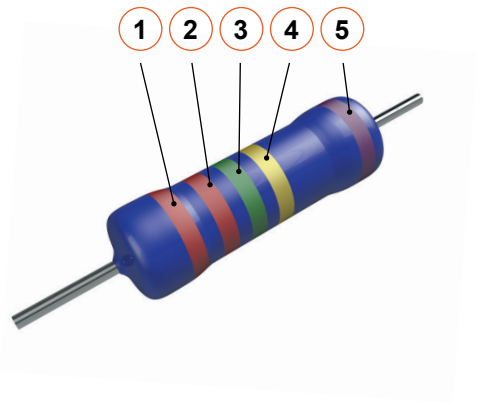
MARKING*

		Ring 1 - 3 Digit	Ring 4 Multiplier	Ring 5 Tolerance
	Silver		10^{-2}	±10%
	Gold		10^{-1}	±5,0%
	Black	0	10	
	Brown	1	10^{1}	±1,0%
	Red	2	10^{2}	±2,0%
	Orange	3	10^{3}	
	Yellow	4	10^{4}	
	Green	5	10^{5}	±0,50%
	Blue	6	10^{6}	±0,25%
	Violet	7	10^{7}	±0,10%
	Grey	8	10^{8}	±0,05%
	Whte	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)	±0,5%, Range 2R - 1K (only ±50ppm°C); ±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 100Ω; ±0,1%; ±25ppm°C)

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

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