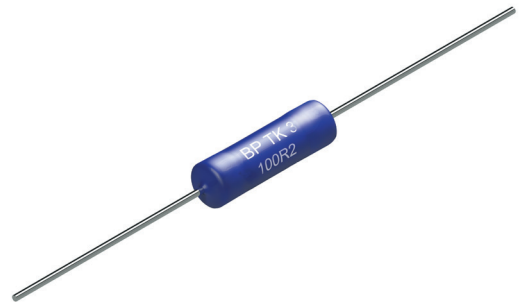


## BP - Series, BP0617

## Precision Metal Film Resistors

### FEATURES

- Resistance from 3Ω
- Temperature Coefficients to 10ppm/°C
- Low Inductance
- Improved long term stability (option)
- RoHS compliant



### RATED VALUES (IEC 60115-1)

Resistance Range	Ω	3Ω 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
Power P <sub>70</sub>	(W)	0,65Watt; (Power P40: 1,0Watt)
Working Voltage (U <sub>max</sub> <sup>AC/DC</sup> )	V	500V or √(P x R)
Insulation Resistance (R <sub>ins</sub> )	Ω	>10GΩ
Operating Temperature Range (T)	°C	TK ≥ 25ppm/°C von -25°C bis 125°C; TK < 25ppm/°C von -10°C bis 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
±10ppm/°C	240R - 250K	100R - 250K	50R0 - 250K	20R0 - 510K	20R0 - 510K
±15ppm/°C	240R - 250K	100R - 250K	50R0 - 250K	20R0 - 510K	20R0 - 510K
±25ppm/°C	240R - 510K	100R - 1M00	50R0 - 2M00	20R0 - 5M00	20R0 - 5M00
±50ppm/°C	100R - 510K	50R0 - 10M0	10R0 - 10M0	5R00 - 10M0	3R00 - 10M0

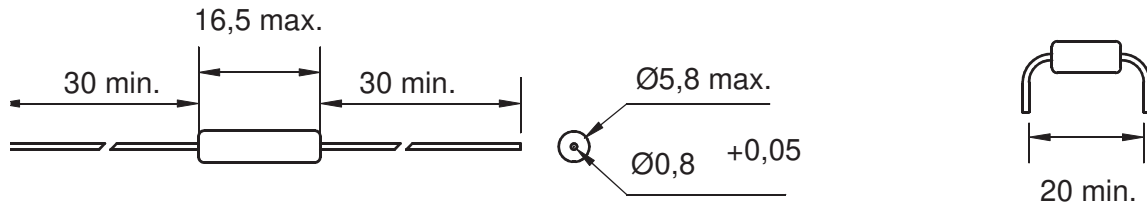
\*Temperature coefficient

### CONSTRUCTION

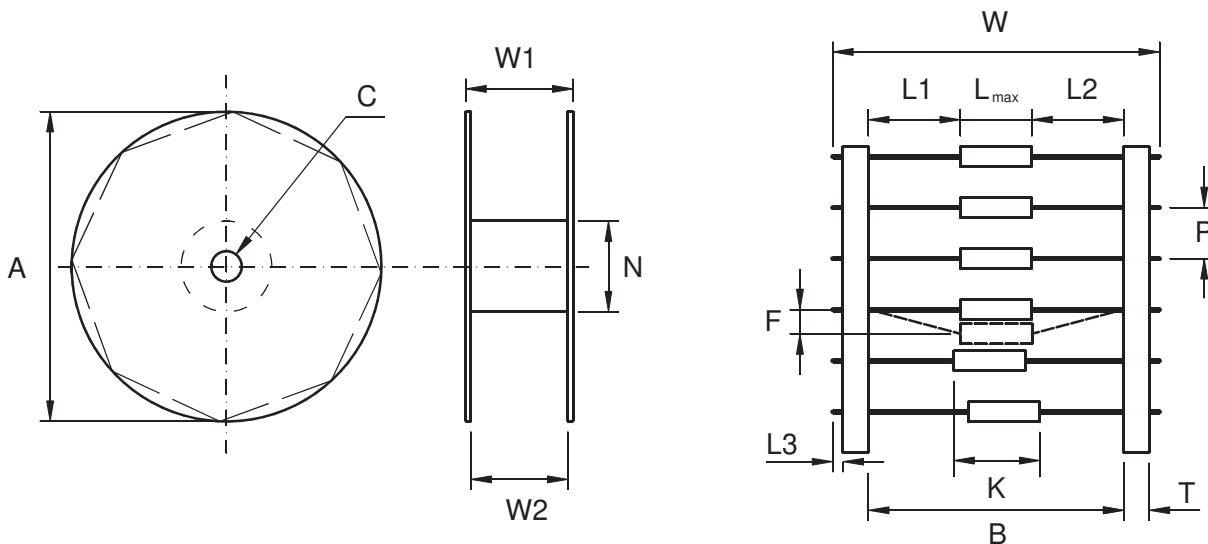
Resistor Material	NiCr - Alloy
Substrate	Alumina
Coating	Epoxy, Cleaning with ethanol, isopropanol, methanol, water-based cleansing agents
Leads	Tin plated copper wire
Marking	For quantities of min. 100 pieces plain text or specific delivery quantities with colour ring coding.

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### DIMENSIONS



### PACKAGING (STANDARD: TAPED AT QTY. 1000PIECES)



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)	86,0 max.
Deflection (F)	1,2 max.
L1 = (B - L <sub>max</sub> + L2) ±1,5	
L2 = (B - L <sub>max</sub> + L1) ±1,5	

#### Diameter of Resistor Body - Spacing

Diameter of the Resistor Body (D)	≥ 5,0 ±0,5
Distance between Resistors (P)	10,0 ±0,5

#### Tape Spacing

Length of Resistor Body (L <sub>max</sub> )	≥ 16,5
Tape Inside Distance (B)	73,0

All Dimension in mm

### PACKAGING QUANTITIES

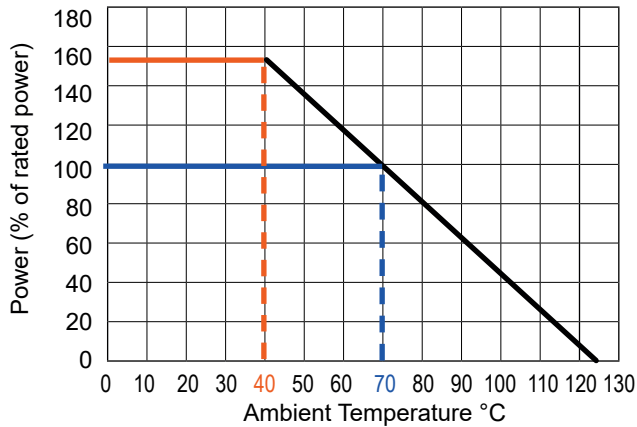
Taping / Ammo Pack	Taping at min. quantity 1000pcs., Plastic Bag or Ammo Pack
Tape on Reel	at min. quantity 1000pcs, less upon request

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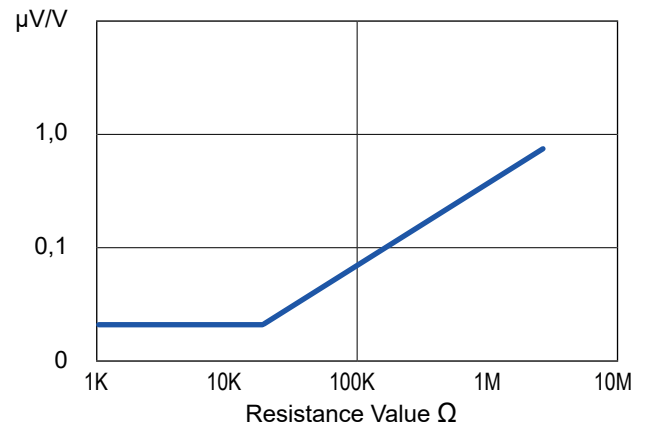
## BP - Series, BP0617

## Precision Metal Film Resistors

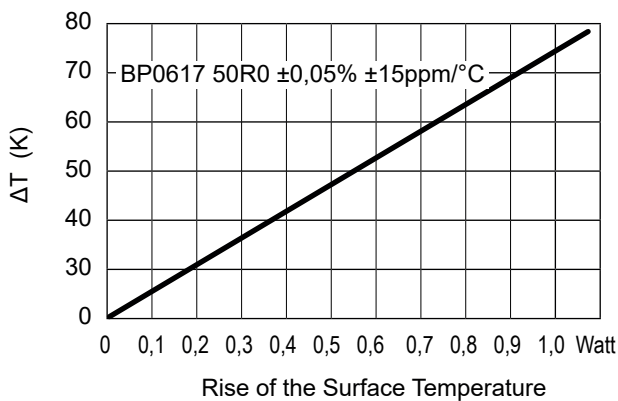
### POWER DERATING CURVE



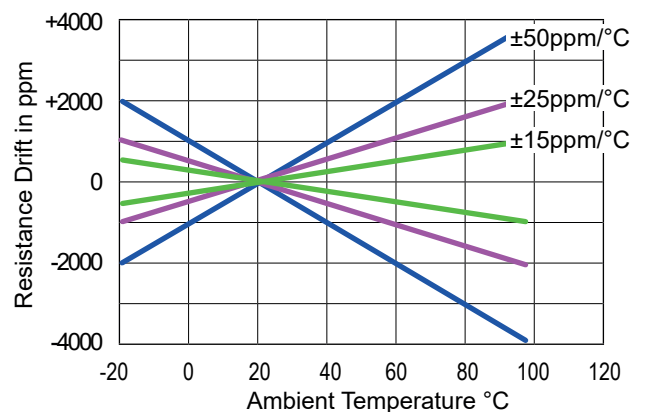
### CURRENT NOISE



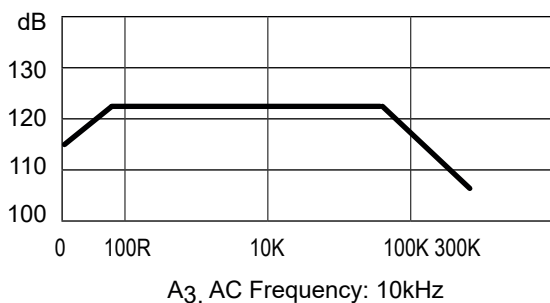
### TEMPERATURE RISE



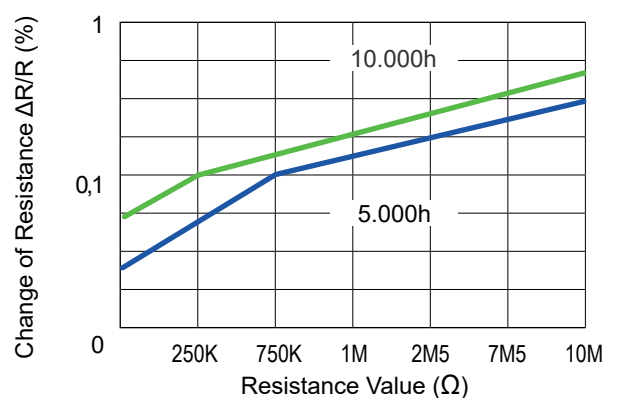
### TEMPERATURE COEFFICIENT VARIATION



### NON - LINEARITY (SINUS U<sub>AC</sub>)



### STABILITY (P<sub>70</sub> = 0,65Watt)



## PERFORMANCE

IEC 60115-1	Test	Conditions of Test	Specification ( $\Delta R$ )
4.13	Short Time Overload	2,5 x rated Power or $2 \times U_{\max}$ , 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, ( $U_{\text{rated}}$ ) or ( $U_{\text{max.}}$ ), 1000h,	$\pm(0,5\% R + 0,05\Omega)$
	Endurance	70°C, ( $U_{\text{rated}}$ ) or ( $U_{\text{max.}}$ ), 8000h,	$\pm(1,0\% R + 0,05\Omega)$

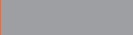

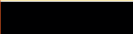









**Note:** The above tests and test conditions refer to specifications according to IEC 60115-1 and IEC 60068-2.

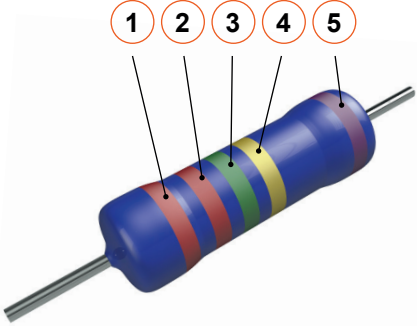
Further details regarding electrical specifications and temperature behaviour are based on nominal values under typical conditions of use.

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.

- **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		$10^{-2}$
	Gold		$10^{-1}$
	Black	0	10
	Brown	1	$10^1$
	Red	2	$10^2$
	Orange	3	$10^3$
	Yellow	4	$10^4$
	Green	5	$10^5$
	Blue	6	$10^6$
	Violet	7	$10^7$
	Grey	8	$10^8$
	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, less 1000 not taped. Optional, against surcharge, an imprint is possible. Please refer explicitly to the required marking when placing an order.

### OPTIONS

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

**BP0617 100R00 0,1% TK25** (BP0617 100Ω; ±0,1%; ±25ppm°C)

Type	Special	Resistance	Tolerance	Temperature Coefficient	Power	Option	Packaging
<b>BP0617</b>	- XXX	0R1000 100R00 10K000 10M000	0,05% 0,1% 0,25% 0,5% 1,0%	TK10 TK15 TK25 TK50	-	V	-