

# Data Sheet for Precision Resistors

Metal Film Resistor

Series NC550



- Universal precision resistor
- Resistor values from 1Ω..5MΩ
- Resistor tolerance up to ±0,05%
- TCR up to ±3ppm/°C
- Power rating 0.6 Watts @40°C
- Low inductance version (optional)
- Pre-loaded @ 100 h rated power (optional)

## Electrical Specification

Resistance range	1Ω..5MΩ
Resistance tolerance	±0.05%..±0.1%
Power rating (0W @ +125°C)	0.4W @ 70°C / 0.6W @ 40°C
Max. working voltage	300V
TCR-rate	±3..±50ppm/°C
Working temperature range (max.)	-25..+125°C @ TK≥ ±25ppm/°C / -10..+85°C @ TK≤ ±25ppm/°C /

## Mechanical Specification

Resistance technology / material	Metal film
Substrate / Coating	Alumina / Epoxy
Connections	Axial cooper tinned

Parameters	Test Conditions IEC 60115-1 (Methode IEC 60068-2)	Specification
Short time overload	2.5 x rated voltage, 5 sec.	$\Delta R \leq \pm 0.1\%$ (+0.01Ω)
Life span (biased)	70°C, rated voltage, 5000 h / 10000 h	$\Delta R \leq \pm 0.5\%$ / $\pm 1\%$ (+0.05Ω)
High temperature / humidity	55°C, 24 h, 90% r. to 100%; 1 cycle	$\Delta R \leq \pm 0.5\%$ (+0.05Ω)
Temperature shock	-65°C 30 min., +155°C 30 min, 5x	$\Delta R \leq \pm 0.1\%$ (+0.01Ω)
Solderability	260°C, 2 sec.	≥95% coverage
Resistance to soldering heat	260°C±5°C, 10 sec.	$\Delta R \leq \pm 0.1\%$ (+0.01Ω)
Isolation resistance		>10GΩ
Voltage coefficient		< 1ppm/V

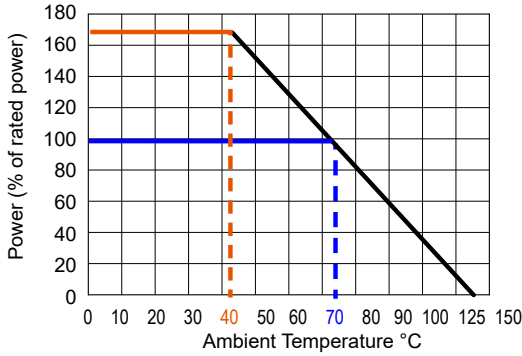
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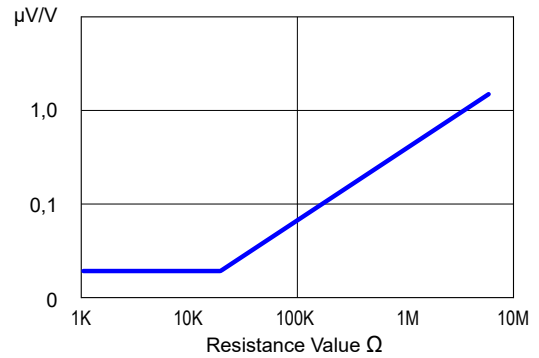
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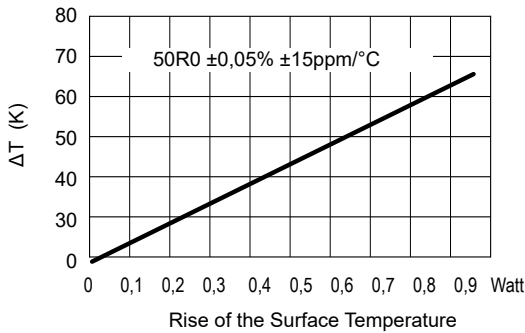
### Power Derating Curve



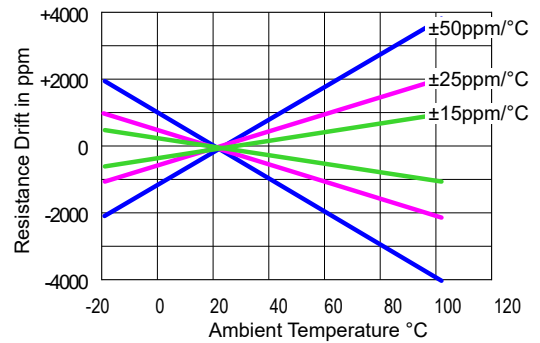
### Current Noise



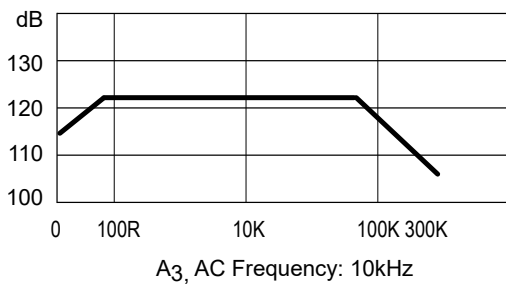
### Temperature Rise



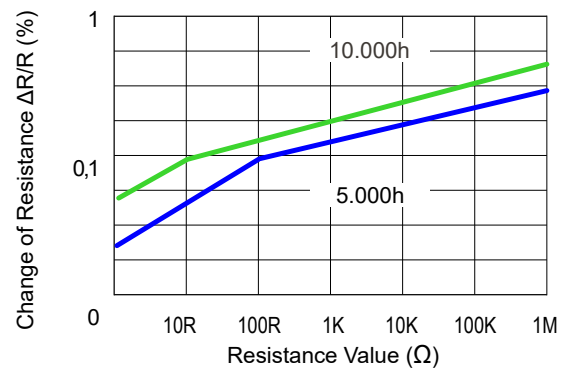
### Temperature Coefficient Variation



### Non - Linearity (Sinus $U_{AC}$ )



### Stability $P_{70} = 0,4$ watts

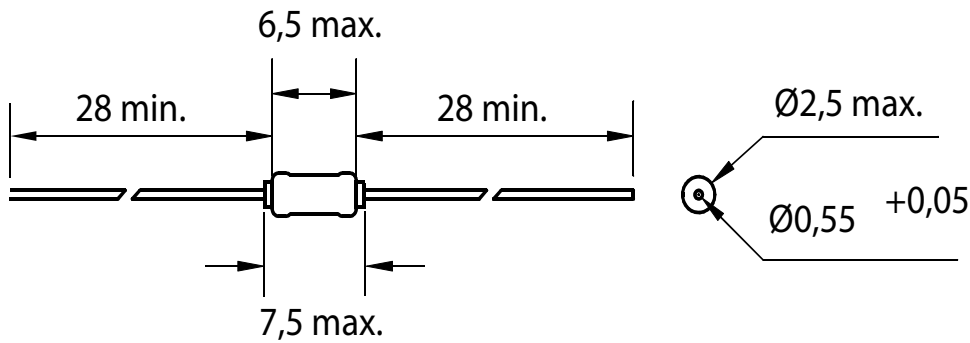


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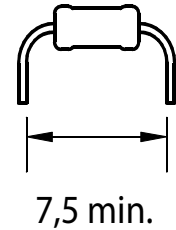
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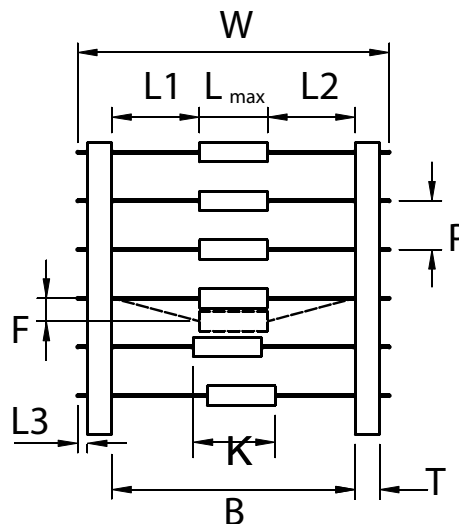
## Drawing



Bending radius



Dimensions in mm



Dimension in mm

### Diameter of Resistor Body - Spacing

Diameter of the Resistor Body (D)	$\leq 5,0 \pm 0,5$
Distance between Resistors (P)	$5,0 \pm 0,5$

### Tape Spacing

Length of Resistor Body ( $L_{max}$ )	$\leq 16,5$
Tape Inside Distance (B)	52,0

### Lead Taping Specifications

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

## PACKAGING QUANTITIES

Taping / Ammo Pack	Taping at min. quantity 100pcs., Plastic Bag or Ammo Pack
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Order code	
<b>Description</b>	Selection: <b>standard=black/bold</b> , possible <i>options=grey/italic</i>
<b>Series:</b>	<b>NC550</b>
<b>Resistance tolerance:</b> ±0,05 @ R = 50Ω..510kΩ ±0,10 @ R = 5Ω..3MΩ ±0,25 @ R = 5Ω..3MΩ ±0,50 @ R = 5Ω..5MΩ ±1,00 @ R = 1Ω..5MΩ	<b>W0,05%</b> <b>W0,1%</b> <b>W0,25%</b> <b>W0,5%</b> <b>W1%</b>
<b>Temperature coefficient:</b>	
±3% ppm/°C	@±0,05 Tolerance (R = 50Ω..120kΩ) @±0,1..±0,5 Tolerance (R = 30Ω..200kΩ) <b>TK3</b>
±5% ppm/°C	@±0,05 Tolerance (R = 50Ω..250kΩ) @±0,1..±0,5 Tolerance (R = 10Ω..500kΩ) <b>TK5</b>
±10% ppm/°C	@ ±0,05 Tolerance (R = 50Ω..510kΩ) @±0,1..±0,5 Tolerance (R = 5Ω..1MΩ) <b>TK10</b>
±15% ppm/°C	@±0,05 Tolerance (R = 50Ω..510kΩ) @±0,1 Tolerance (R = 5Ω..1,5MΩ) @±0,25..±0,5 Tolerance (R = 5Ω..2MΩ) @±1 Tolerance (R = 1Ω..2MΩ) <b>TK15</b>
±25% ppm/°C	@±0,05 Tolerance (R = 50Ω..510kΩ) @±0,1 Tolerance (R = 5Ω..3MΩ) @±0,25 Tolerance (R = 5Ω..3MΩ) @±0,5 Tolerance (R = 5Ω..5MΩ) @±1 Tolerance (R = 1Ω..5MΩ) <b>TK25</b>
<b>Resistance value - please choose:</b> <b>From 1Ω to ≤ 5MΩ (please note tolerance + TCR)</b>	<b>xxxxkxxx</b>
<i>Option pre-loaded 100h @ resistance value (related V / W)</i>	V
<i>Option taping from 100 pcs. possible / ammo pack</i>	G

Order Example	Series	Resistance tolerance	Temperature coefficient	Resistance value	Pre-loaded	Taping
Choice	NC550	±0.1%	5ppm/°C	10,1kΩ	No	Yes
Code	NC550	W0.1%	TK5	10k100	-	G