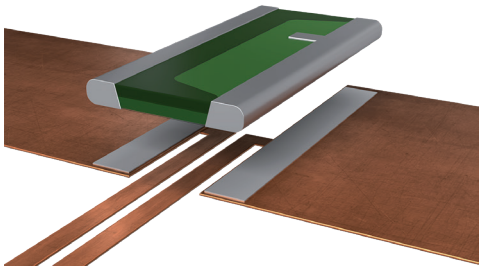
ISABELLENHÜTTE

CLK (0612)

ISA-PLAN® PRECISION RESISTOR



FEATURES

- Low resistance values from 1 mOhm
- 3 W power rating at 70 °C
- Constant current up to 30 A (1 mOhm)
- Excellent long-term stability
- High pulse power rating
- Mounting: Reflow- and IR-soldering
- AEC-Q200 qualified

RoHS

APPLICATIONS

- Current sensor for power hybrid applications
- Control systems for the automotive market
- Power modules
- Frequency converters
- Switch mode power supplies

Technical data

Resistance values*	**mOhm**	1 / 2** / 3 / 5	10
Tolerance*	**%**	1 / 5	
Temperature coefficient (20-60 °C)	**ppm/K**	<50	<20
Applicable temperature range	**°C**	-65 to +170	
Power rating $P_{140\,°C}$	**W**	1	0.75
Power rating $P_{70\,°C}$	**W**	3	2.5
Internal heat resistance (R_{thi})	**K/W**	<30	<40
Dielectric withstanding voltage (AC/DC)	**V**	200	
Inductance	**nH**	<1	
Stability (at rated power) deviation after 2000 h T_K = Terminal temperature	**%**	<0.5 (T_K = 110 °C) <0.7 (T_K = 140 °C)	

* see all standard values and tolerances on page 3

** under development

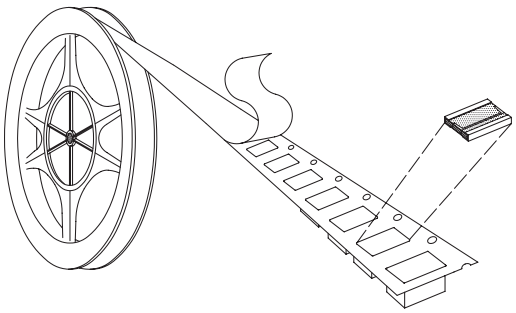
Ordering code

CLK - R003 - 1.0

- Tolerance
- Resistance value [Ohm] / "R" represents decimal point
- Type

Recommended solder profile

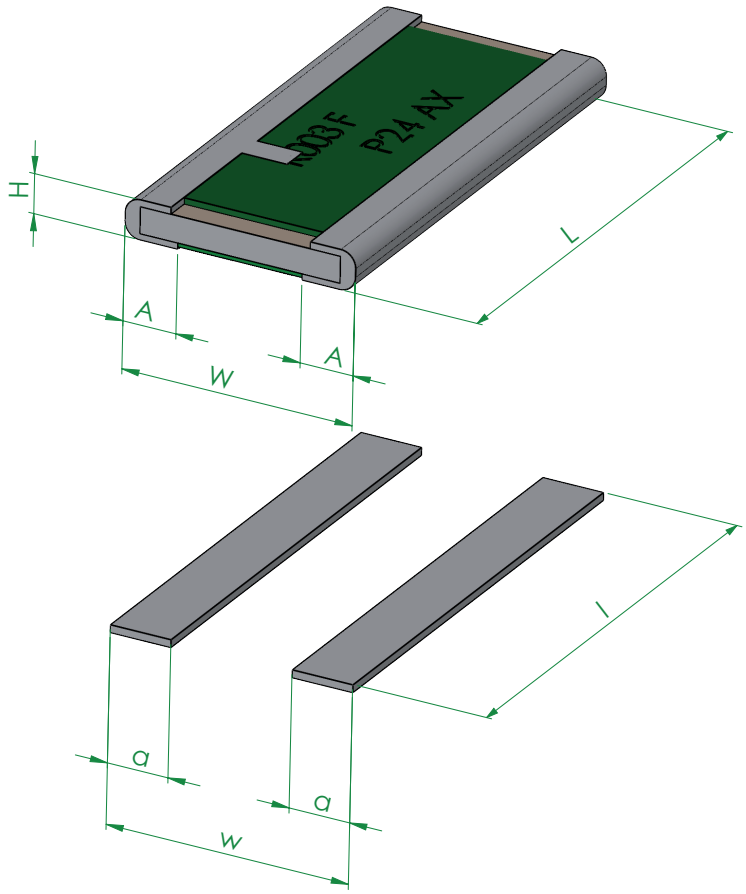
Reflow-, IR-soldering				
Temperature	**°C**	260	255	217
Time	**sec**	peak	40	90



Tape and reel information

Specification		DIN EN 60286-3
Tape width	**mm**	8
Reel size	**inch**	13
Parts per reel	**pcs**	10000
Packaging weight	**g**	454
Tape material		plastic

Mechanical dimensions and pcb-layout proposal (Reflow-soldering) [mm]



type	L	W	H	A
CLK	3.05 ± 0.3	1.52 ± 0.2	0.35 +0.2/-0.1	0.35 ± 0.2

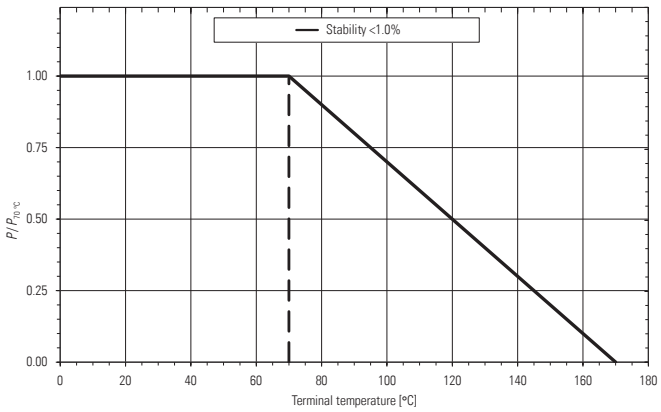
solder pad type	l	w	a
CLK	3.05	1.6	0.4

Available standard resistance values and tolerances*

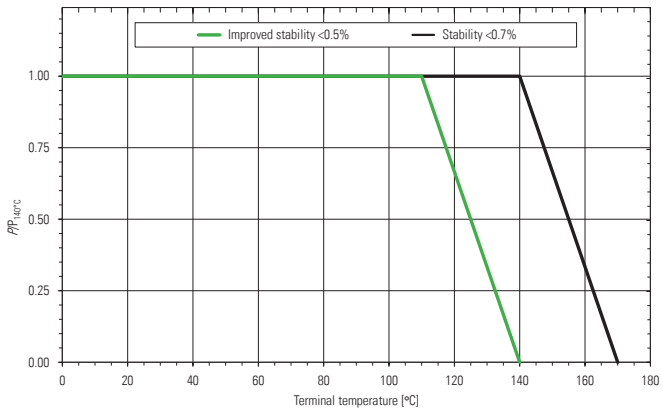
Resistance values	Tolerance	
	1.0	5.0
R001		✓
R002	✓	✓
R003	✓	✓
R005	✓	✓
R010	✓	✓

* Further values and tolerances on request
✓ = available

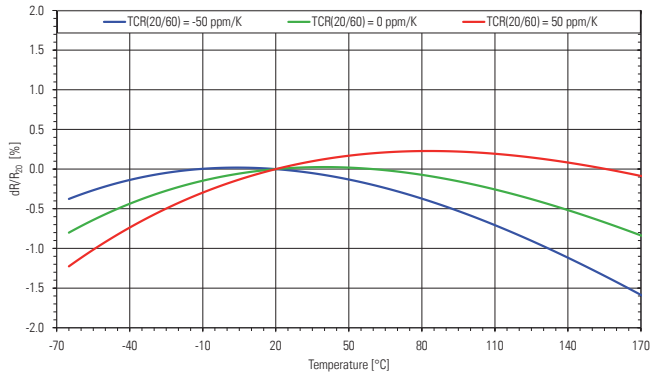
Power derating curve at 70 °C



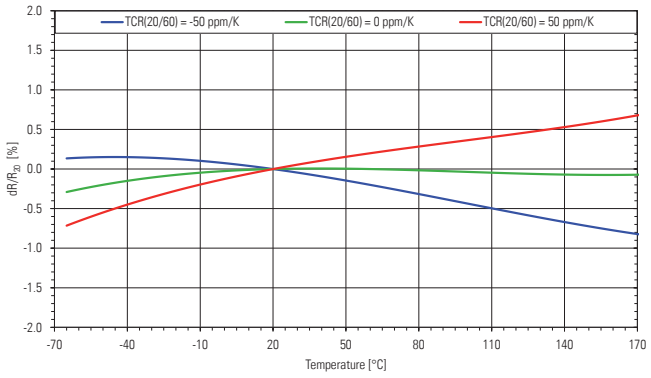
Power derating curve at 140 °C



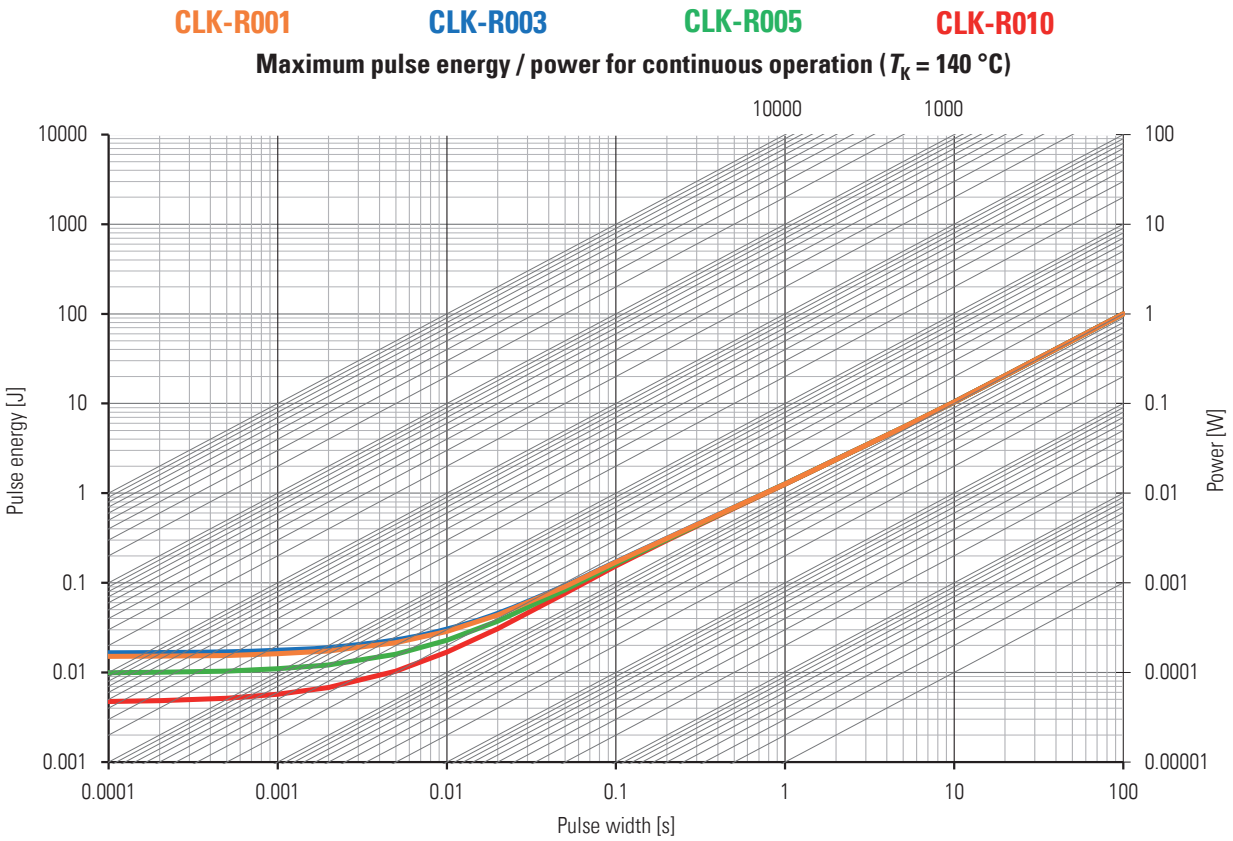
Temperature dependence of the electrical resistance of NOVENTIN® resistors



Temperature dependence of the electrical resistance of ZERANIN® resistors with 1 mΩ



Maximum pulse energy respectively pulse power for permanent operation



Specification

Parameters	Test conditions	Specified values
Temperature Cycling	2000 cycles (-55 °C to +150 °C)	±0.7 %
Low Temperature Storage and Operation	-65 °C for 250 h	±0.1 %
Resistance to Soldering Heat	3x reflow soldering (condition K), time above 217°C, 60s – 150s	±0.5 %
Mechanical Shock	100 g, 6 ms half sine	±0.2 %
Vibration, High Frequency	10 g, 10-2000 Hz, 24 h each axis	±0.2 %
Operational Life	2000 h, T_K = 140 °C max at rated power	±0.7 %
High Temperature Exposure	2000 h / 170 °C	±0.7 %
Bias Humidity	+85 °C, 85 r.F., 1000 h	±0.7 %

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