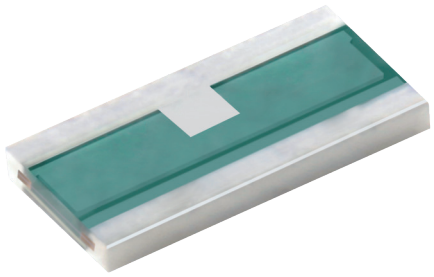
ISABELLENHÜTTE
Innovation by Tradition

ISA-PLAN® // PRECISION RESISTORS

VLK // Size 0612



Features

- Low resistance values from 1 mOhm
- 1 W power rating at 140 °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 2011/65/EU compliant

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

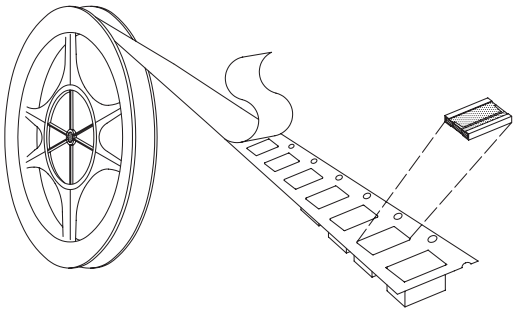
* See all standard values and tolerances on page 2

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Recommended solder profile

Reflow- and 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 (Rights to amend data is reserved)
Packaging weight	**g**	454
Tape material		plastic

Available standard resistance values and tolerances*

Resistance values	**Tolerance**		
	1.0	2.0	5.0
R001			✓
R003	✓		✓
R005	✓	✓	✓

* Further values and tolerances on request
✓ = available

Ordering code

VLK - R003 - 5.0

- 5.0 ..... Tolerance
- R003 ..... Resistance value [Ohm] / "R" represents decimal point
- VLK ..... Type

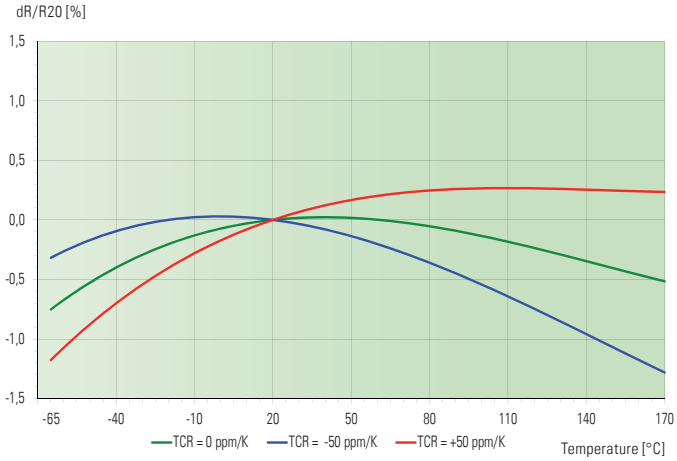
Specification

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	260 °C for 10 sec / 8h steam aging	±0.1 %
Moisture Resistance	MIL-STD-202 method 106	±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 max at rated power	±0.7 %, T_K = 140 °C
High Temperature Exposure	2000 h / 170 °C	±0.7 %
Bias Humidity	+85 °C, 85 r.F., 1000 h	±0.7 %

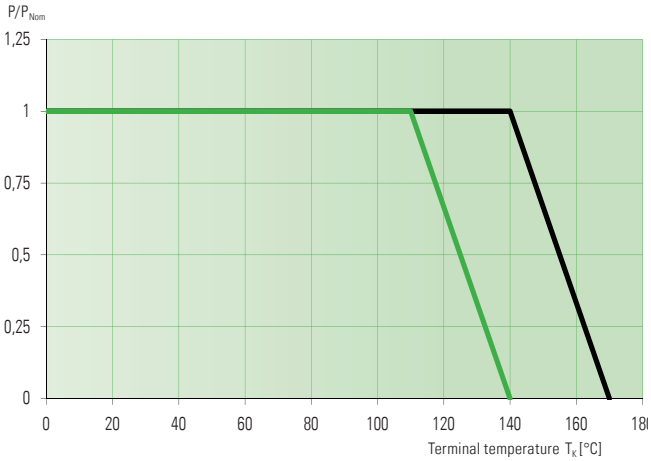
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Temperature dependence of the electrical resistance



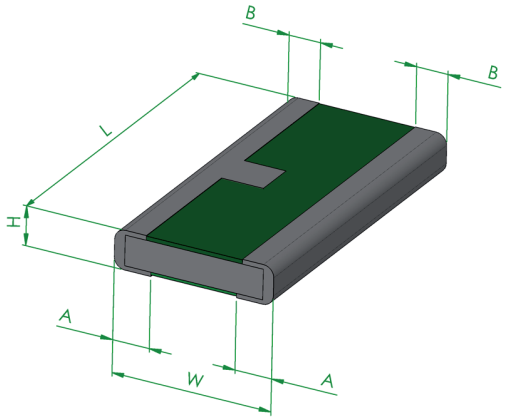
Power derating curve

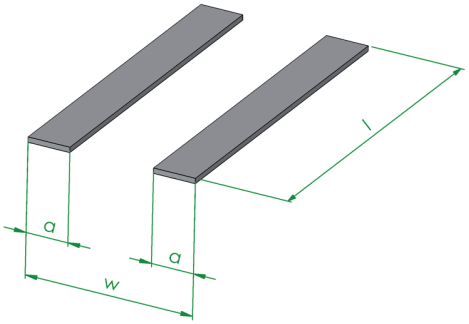


Stability < 0.7 %

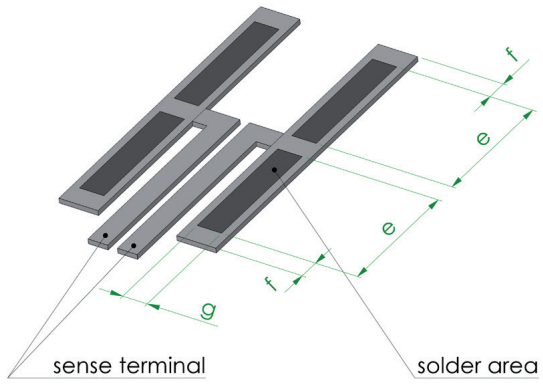
Improved stability < 0.5 %

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





4 terminal connection



Solder pad type	e	f	g
VLK	1.22	0.2	0.25

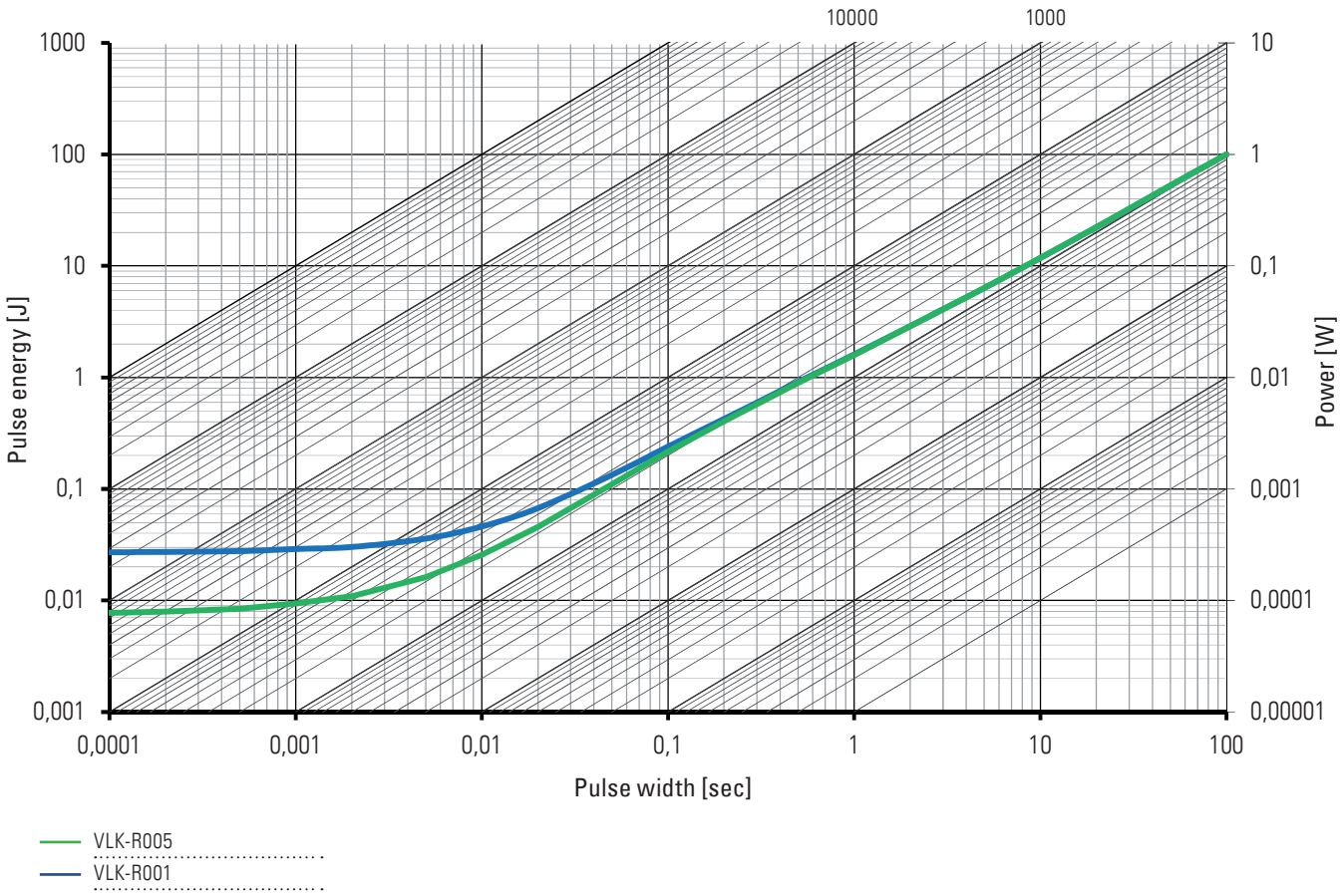
Type	L	W	H	A	B
VLK	3.05 ±0.2	1.52 ±0.1	0.35 +0.2/-0.1	0.35 ±0.15	0.30 ±0.15

Type	l	w	a
VLK	3.05	1.6	0.4

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Maximum pulse energy respectively pulse power for permanent operation



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