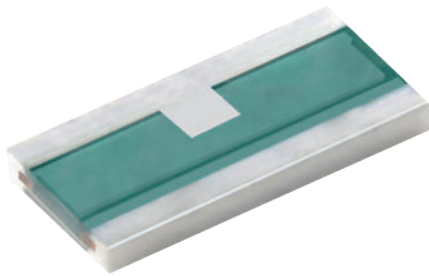


ISA-PLAN® // PRECISION RESISTORS



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



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 % ($T_K=110\text{ °C}$) <0.7 % ($T_K=140\text{ °C}$)

* See all standard values and tolerances on page 2



VLK // Size 0612

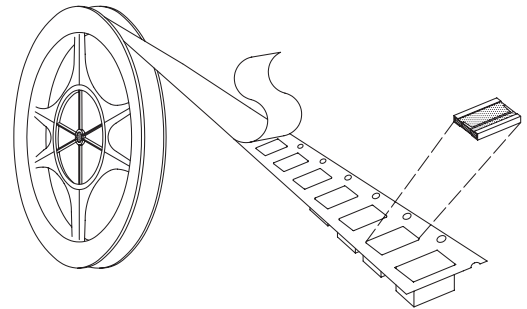
Recommended solder profile

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

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

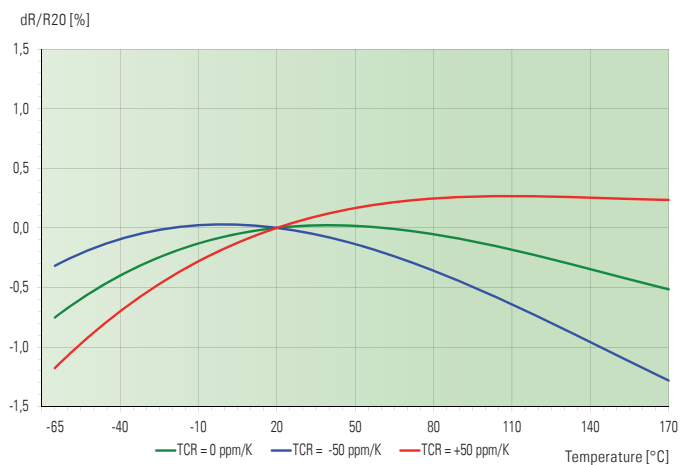
Specification

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 %

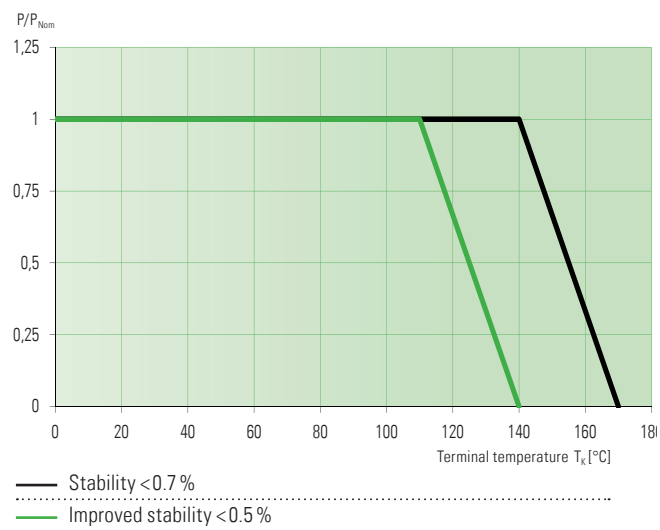


VLK // Size 0612

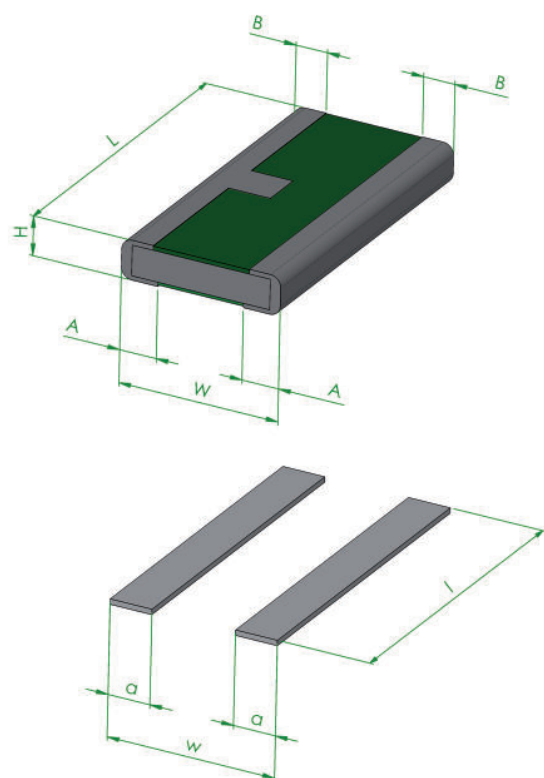
Temperature dependence of the electrical resistance



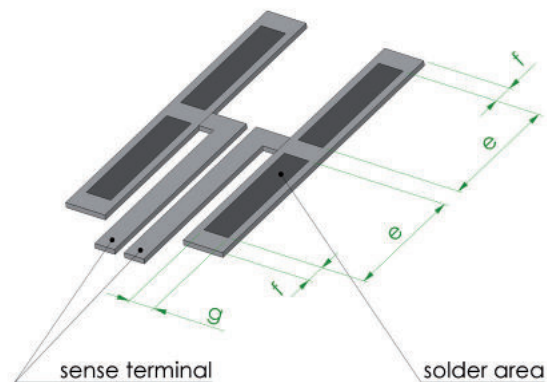
Power derating curve



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



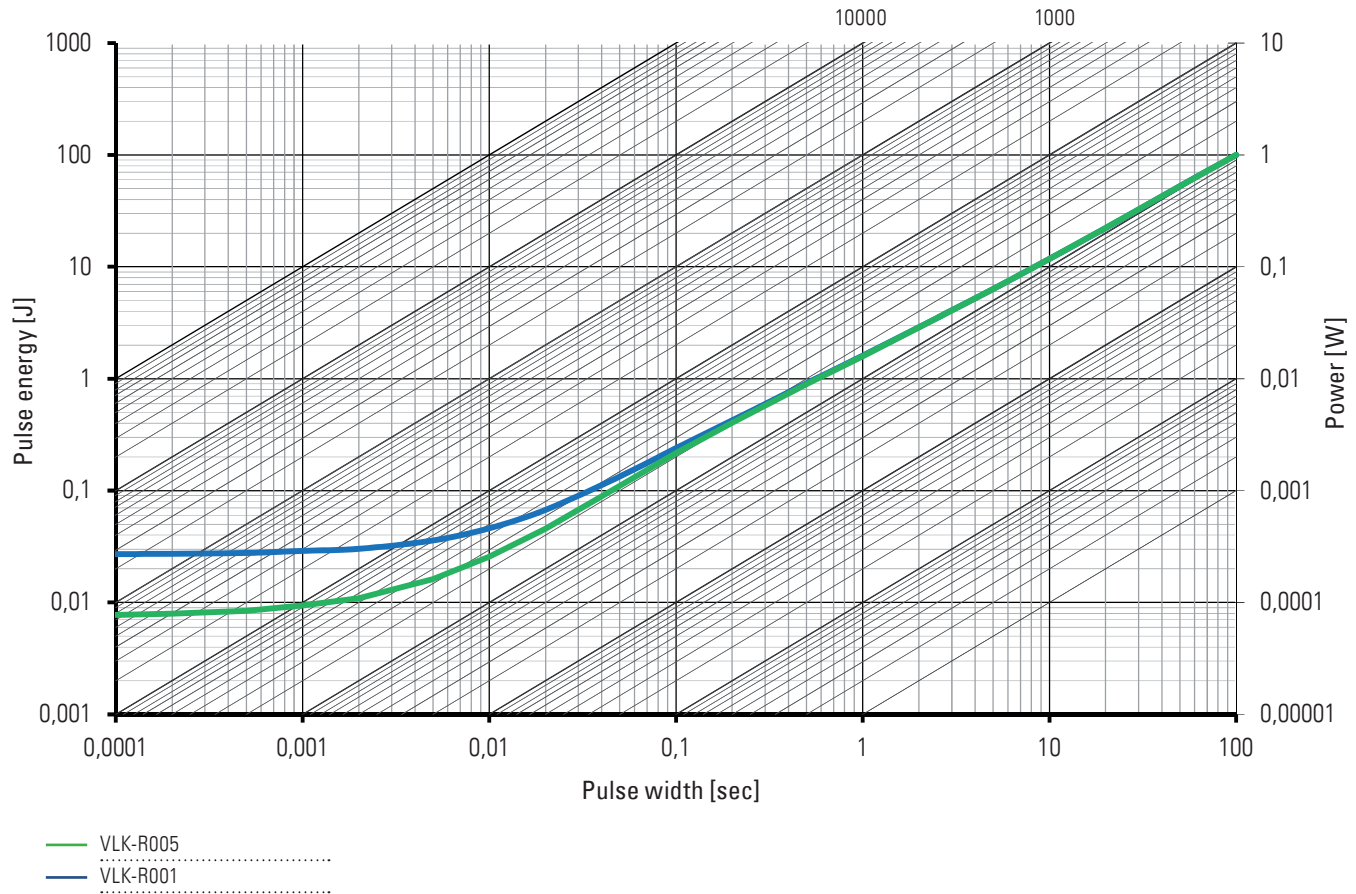
4 terminal connection



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	$0.35 \pm 0.2/-0.1$	0.35 ± 0.15	0.30 ± 0.15

Type	l	w	a
VLK	3.05	1.6	0.4


Maximum pulse energy respectively pulse power for permanent operation


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