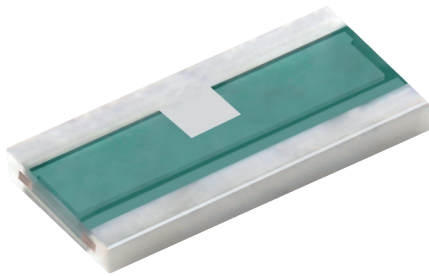




ISA-PLAN® // PRECISION RESISTORS



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 P_{140 °C}	W	1
Power rating P_{70 °C}	W	3
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



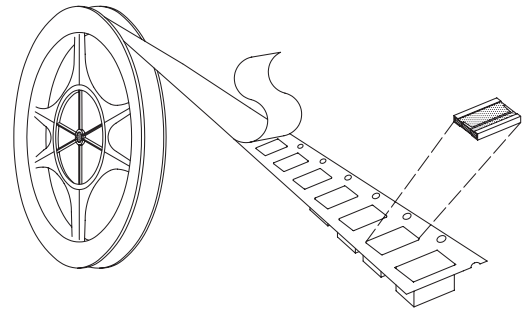
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Recommended solder profile

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*

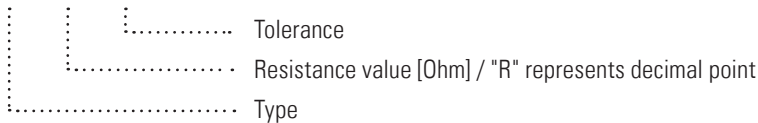
Resistance values	Tolerance		
	1.0	2.0	5.0
R001			✓
R003	✓		✓
R005	✓	✓	✓

* Further values and tolerances on request

✓ = available

Ordering code

VLK - R003 - 5.0



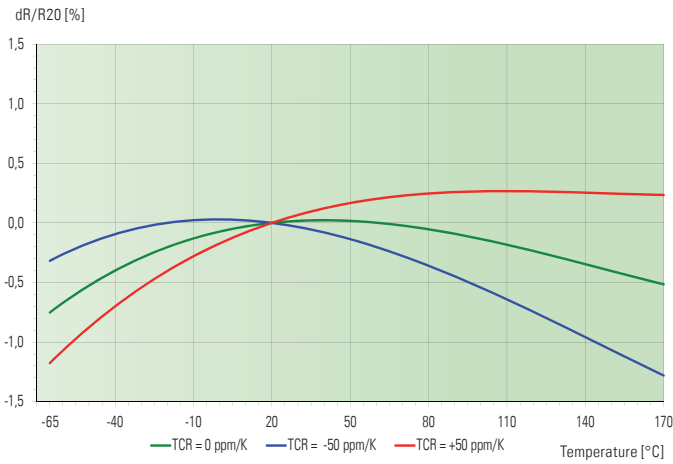
Specification

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 %

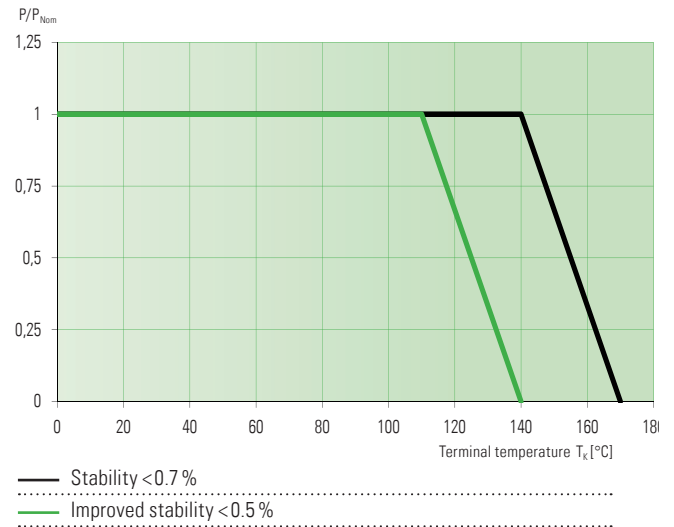


VLK // Size 0612

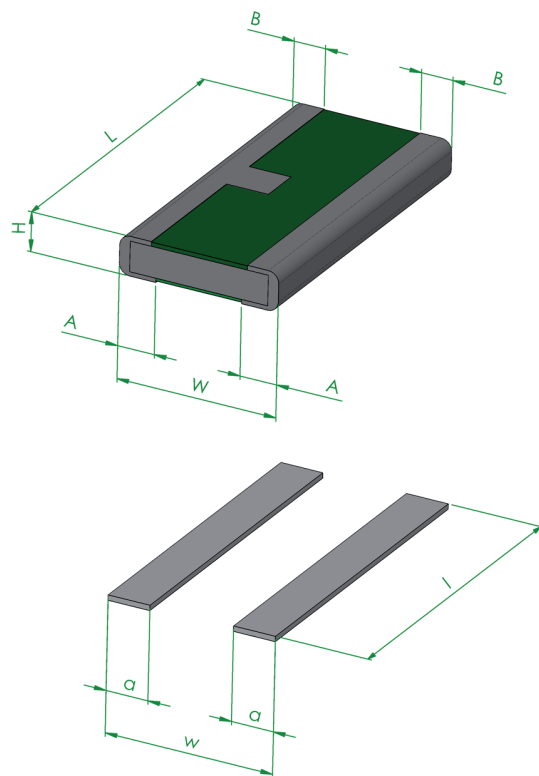
Temperature dependence of the electrical resistance



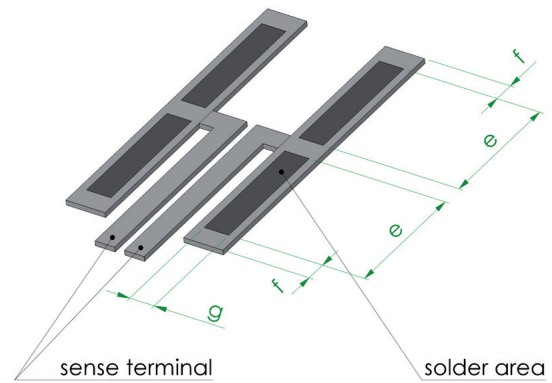
Power derating curve



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



4 terminal connection



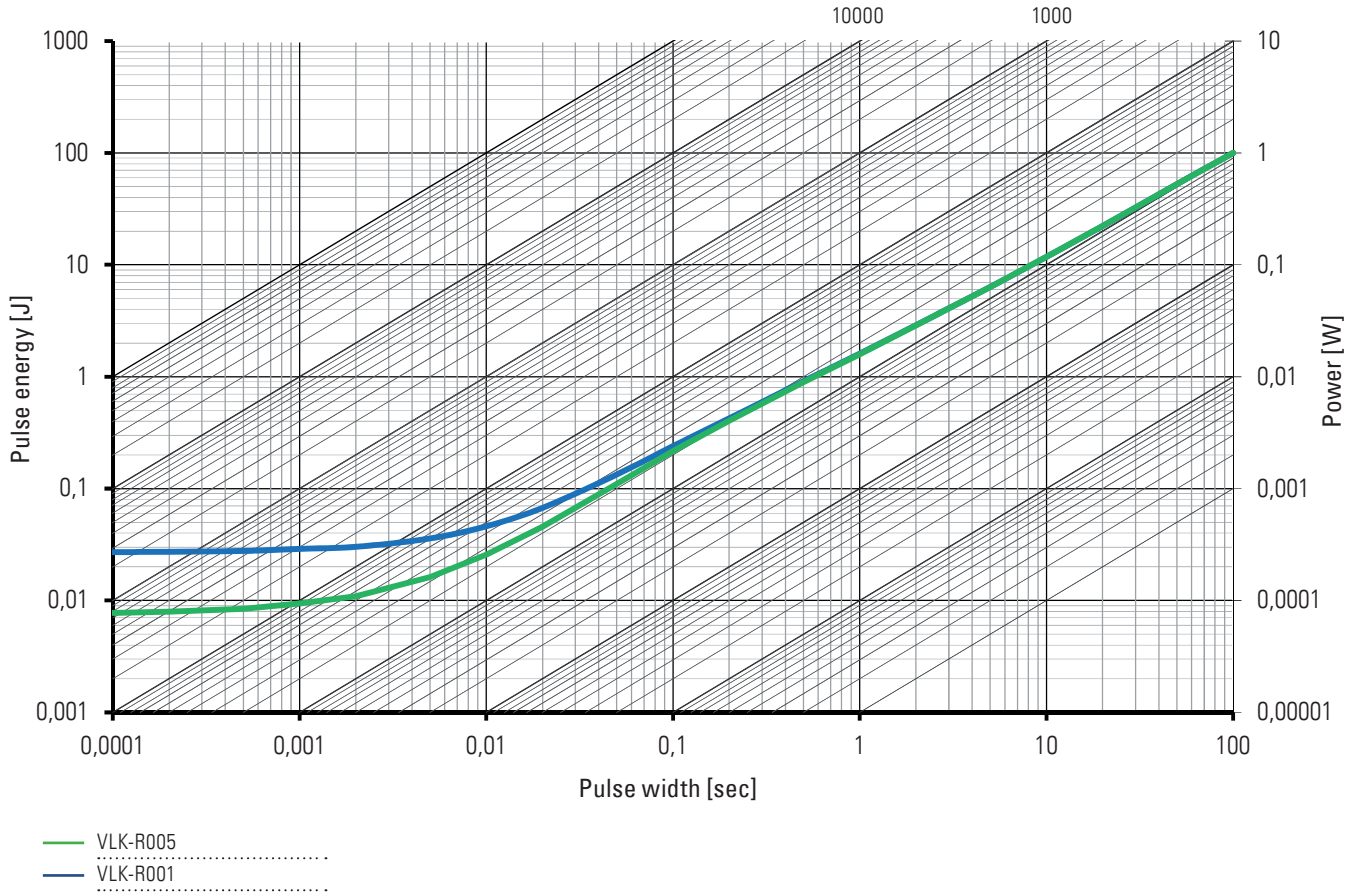
Solder pad type	e	f	g
VLK	1.22	0.2	0.25

Type	L	W	H	A	B
VLK	3.05 ±0.2	1.52 ±0.1	0.35 +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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