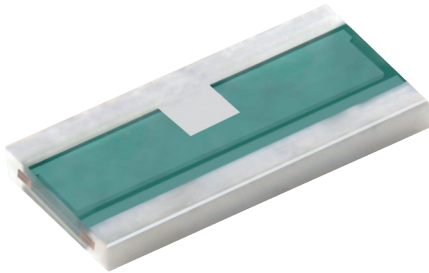


ISA-PLAN® // PRECISION RESISTORS



VLP // Size 1020



Features

- Low resistance values from 1 mOhm
- 2 W power rating at 130 °C
- Constant current up to 45 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	3 / 5 / 6 *
Tolerance	%	1 / 2 / 5 *
Temperature coefficient (20-60 °C)	ppm/K	<50
Applicable temperature range	°C	-65 to +170
Power rating	W	2
Internal heat resistance (R_{thi})	K/W	<20
Dielectric withstanding voltage	V AC/DC	200
Inductance	nH	<1
Stability (at rated power) deviation after 2000h, T_K = Terminal temperature		<0.5 % ($T_K=100$ °C) <0.7 % ($T_K=130$ °C)

* See all standard values and tolerances on page 2



VLP // Size 1020

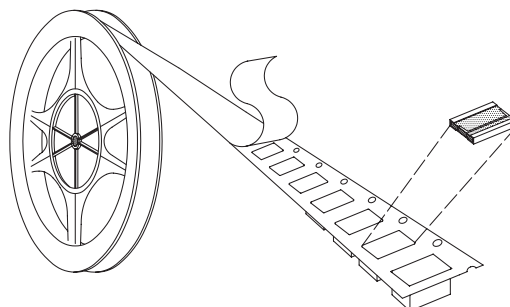
Recommended solder profile

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	12
Reel size	inch	13
Parts per reel	pcs	10000 (Rights to amend data is reserved)
Packaging weight	g	481
Tape material		plastic



Available standard resistance values and tolerances*

Resistance values	Tolerance		
	1.0	2.0	5.0
R003	✓	✓	
R005	✓		✓
R006	✓		✓
R030			✓

* Further values and tolerances on request

✓ = available

Ordering code

VLP - R003 - 1.0

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

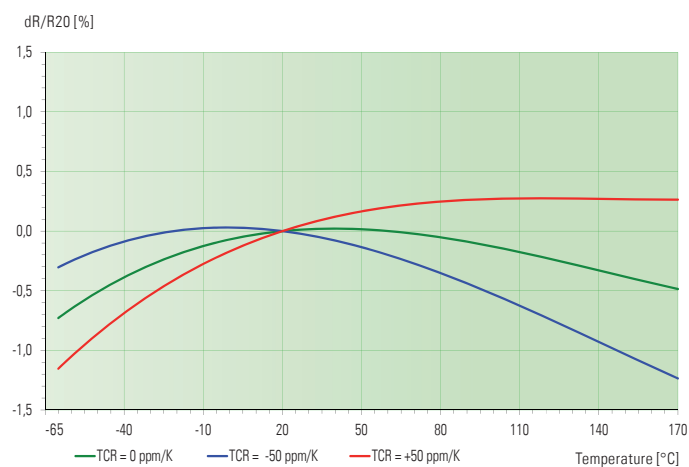
Specification

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 = 130 °C
High Temperature Exposure	2000 h / 170 °C	±0.7 %
Bias Humidity	+85 °C, 85 rF, 1000 h	±0.7 %

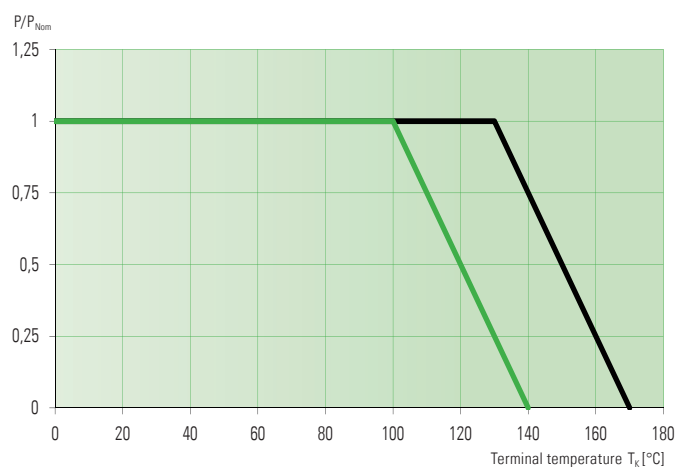


VLP // Size 1020

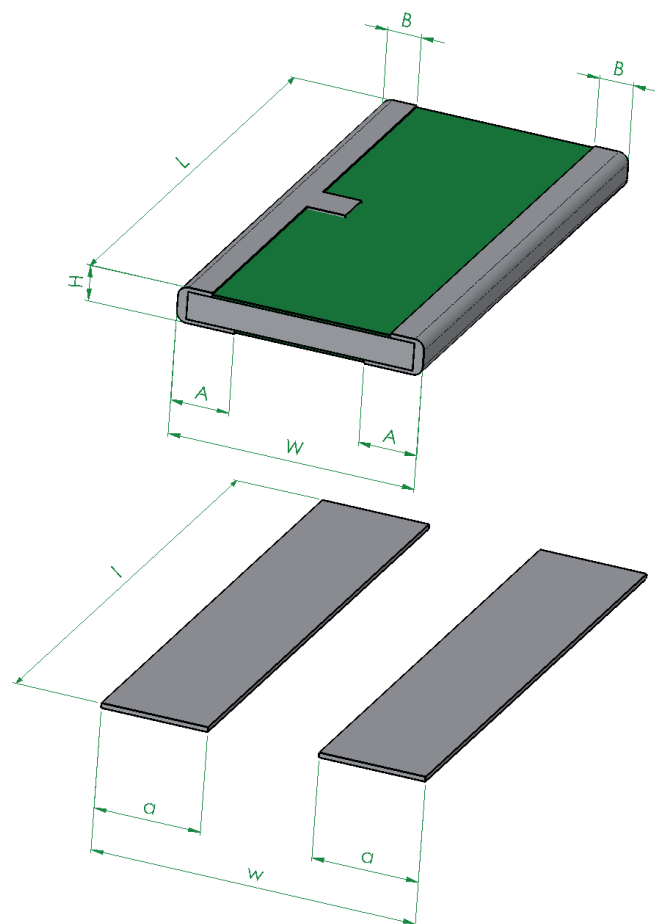
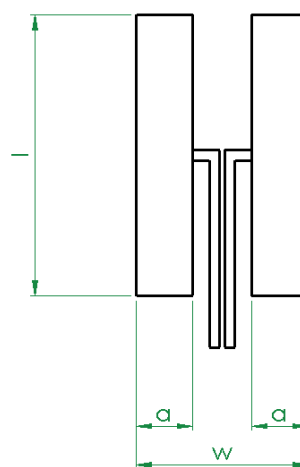
Temperature dependence of the electrical resistance



Power derating curve



Mechanical dimensions and pcb-layout proposal (Reflow-soldering) [mm] // drawing Z-YE-493



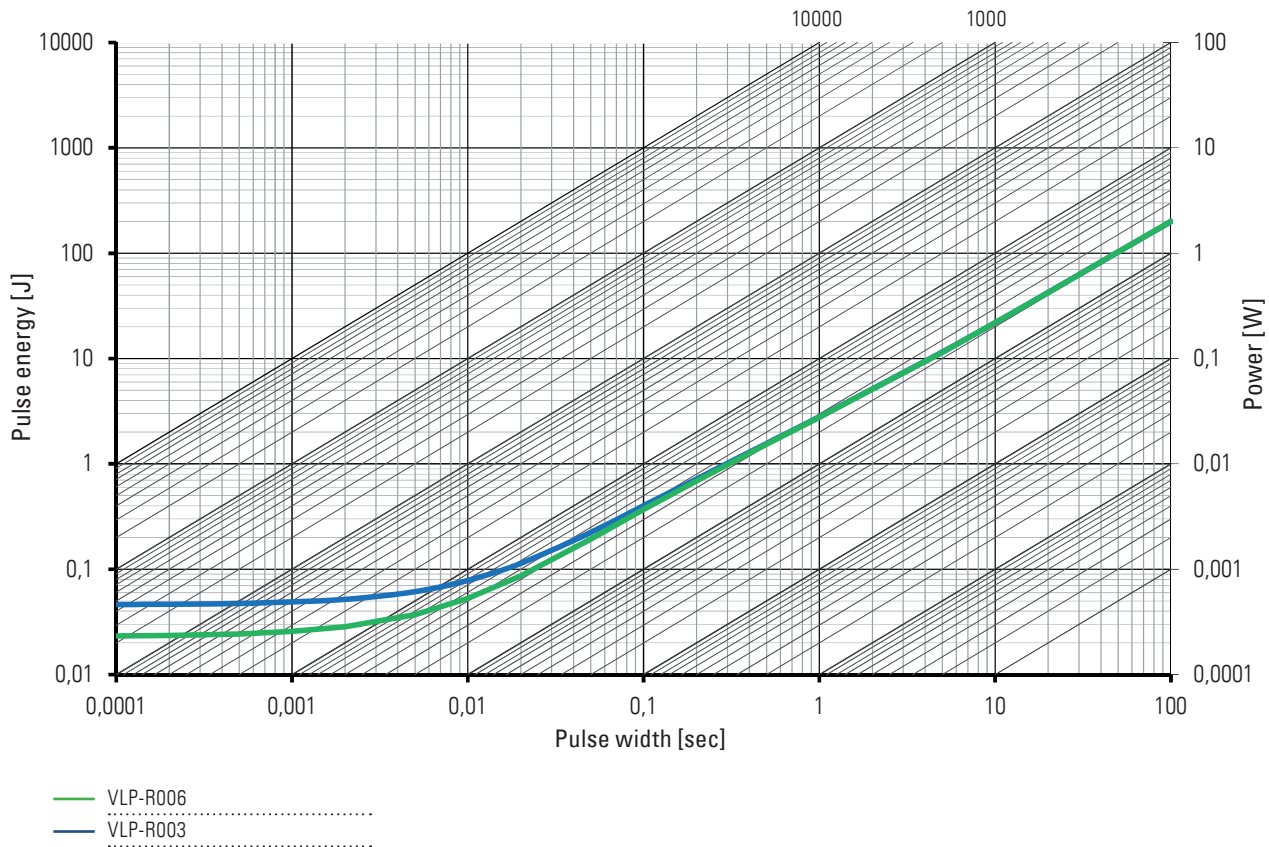
type:	L	W	H	A	B
VLP	5.08 ± 0.2	2.54 ± 0.1	$0.35 +0.2/-0.1$	0.6 ± 0.15	0.35 ± 0.15

solder pad typ:	L	W	a
VLP	5.5	3.35	1.1



VLP // Size 1020

Maximum pulse energy respectively pulse power for permanent operation



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