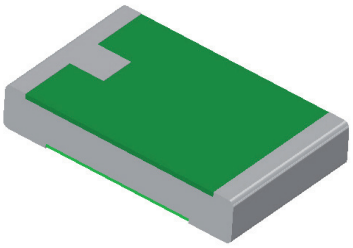
ISABELLENHÜTTE
Innovation by Tradition

ISA-PLAN® // PRECISION RESISTORS

VMI-5.0 // Size 0805



Features

- 0.5 W power rating at 100 °C
- Constant current up to 7 A (10 mOhm)
- Small size (0805)
- High pulse power rating
- Excellent long-term stability
- Mounting: Reflow- and IR-soldering
- RoHS 2011/65/EU compliant
- AEC-Q200 qualified

RoHS

Applications

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

Technical data

Resistance values[1]	**mOhm**	10 to 50
Tolerance[1]	**%**	5
Temperature coefficient (20-60 °C)	**ppm/K**	<30[2]
Applicable temperature range	**°C**	-65 to +170
Power rating	**W**	0.5
Internal heat resistance (R_{thi})	**K/W**	<80
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) <1.0 % (T_K=130 °C)

[1] see all standard values and tolerances on page 2

[2] R010, R020: <50ppm/K

Ordering code

VMI - R010 - 5.0

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

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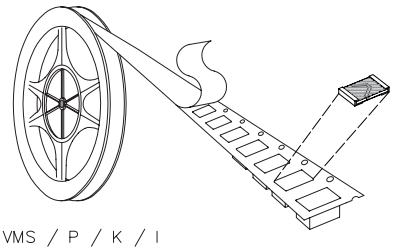
Recommended solder profile

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



VMS / P / K / I

Tape and reel information

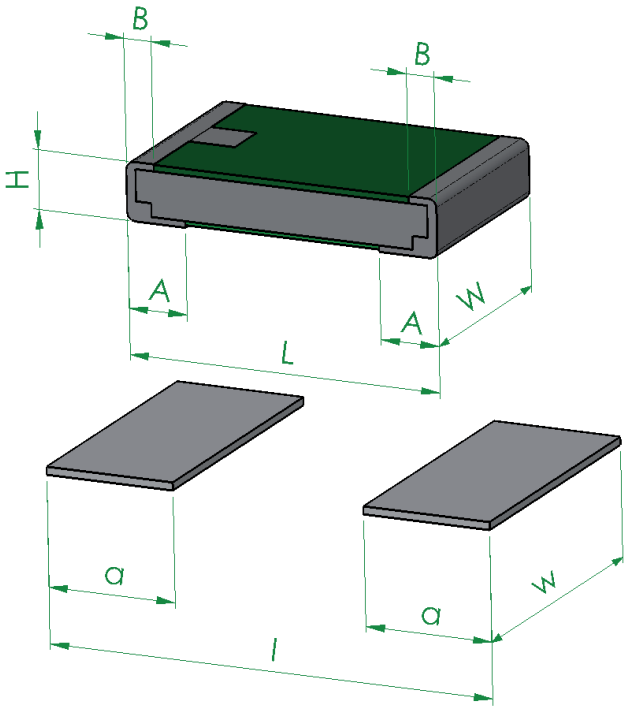
Specification		DIN EN 60286-3
Tape width	**mm**	8
Reel size	**inch**	13
Parts per reel	**pcs**	15000
Packaging weight (net)	**g**	480

Available standard resistance values and tolerances*

Resistance values	**Tolerance 5%**
R010	✓
R020	✓
R030	✓
R050	✓

* for 1% tolerance see datasheet VMI-1.0
✓ = available

Mechanical dimensions and pcb-layout proposal (Reflow-soldering) [mm] // Drawing no. Z-YE-494a



type:	L	W	H	A	B
VMI	2.03 ±0.15	1.27 ±0.15	0.4 ±0.15	0.38 ±0.1	0.18 +0.15/-0.1

solder pad type:	l	w	a
VMI	2.9	1.8	0.82

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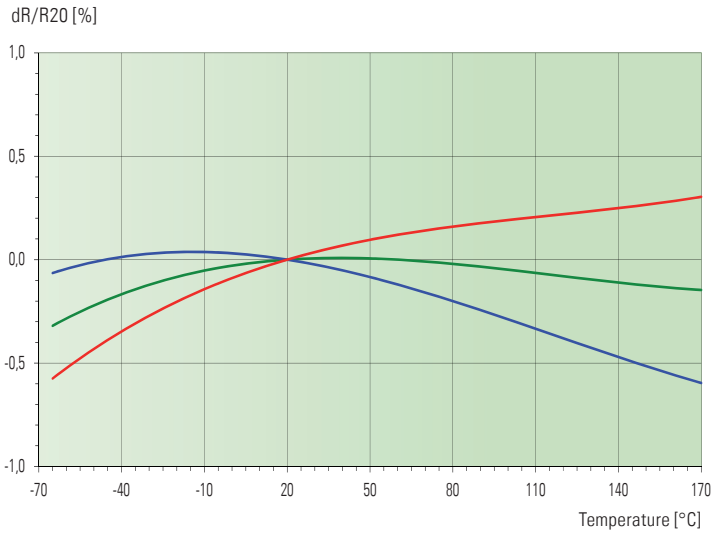
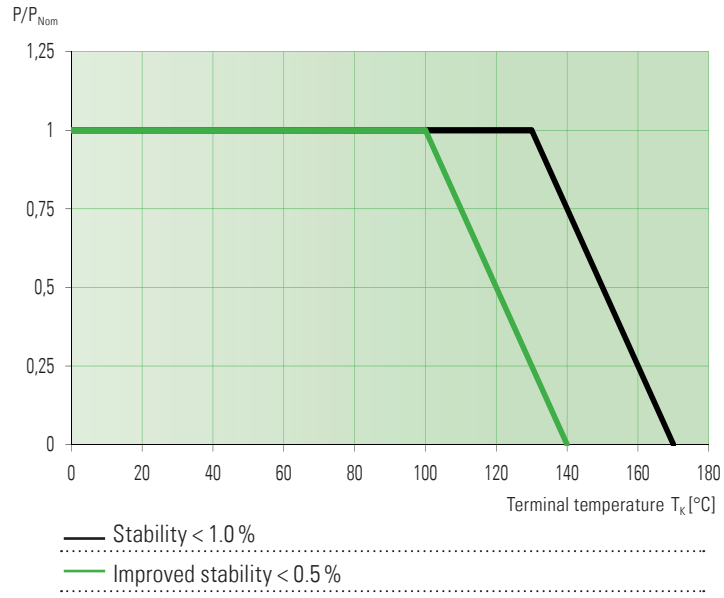
Components resistance change with temperature (-65 °C ≤ T ≤ 170 °C)



Power derating curve



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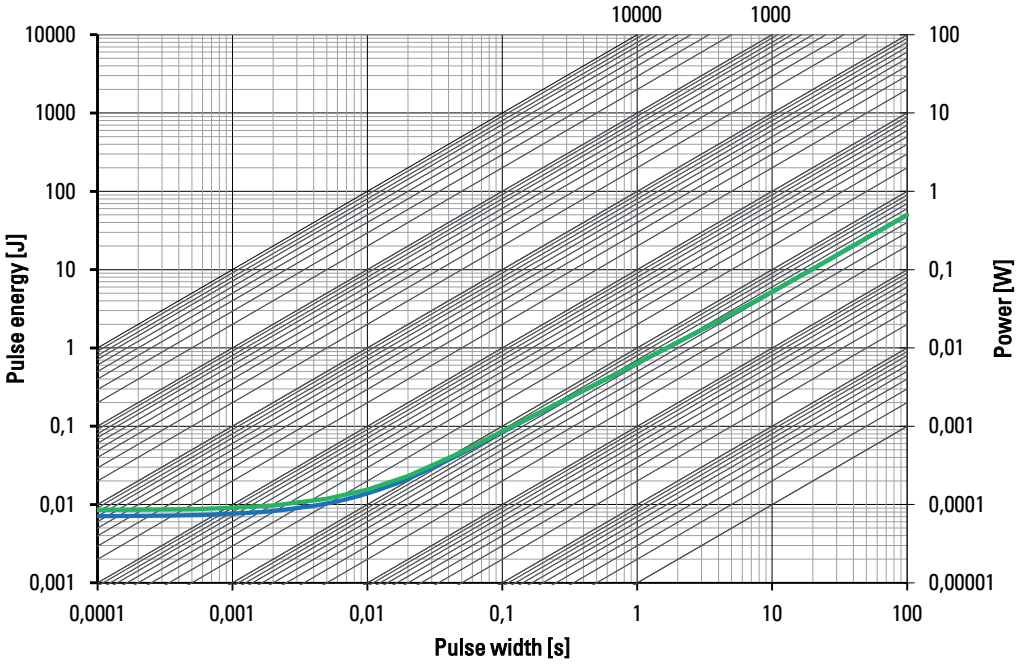
Maximum pulse energy respectively pulse power for permanent operation

VMI-R010, VMI-R050

Maximum pulse energy / power continuous operation (T_K = 130 °C)



Specification

Parameters	Test conditions	Specified values
Temperature Cycling	2000 cycles (-55 °C to +150 °C)	±0.5 %
Low Temperature Storage and Operation	-65 °C for 250 h	±0.1 %
Resistance to Soldering Heat	260 °C for 10 sec / 8h steam aging	±0.3 %
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 = 130 °C at rated power	±1.0 %
High Temperature Exposure	2000 h / 170 °C	±1.0 %
Bias Humidity	+85 °C, 85 r.F., 1000 h, powered	±0.5 %