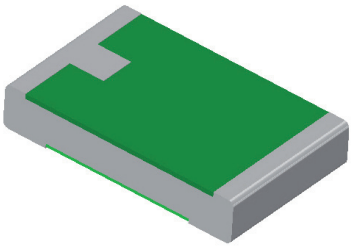
ISABELLENHÜTTE
Innovation by Tradition

ISA-PLAN® // PRECISION RESISTORS

VMI // 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

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	**mOhm**	10 / 20 / 30 / 50
Tolerance	**%**	5
Temperature coefficient (20-60 °C)	**ppm/K**	<30 [1]
Applicable temperature range	**°C**	-55 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] R010, R020: <50 ppm/K

Ordering code

VMI - R010 - 5.0

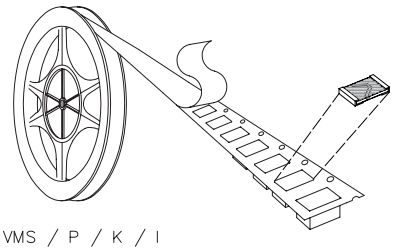
- Tolerance
- Resistance value [Ohm] / „R" represents decimal point
- Type

Download from alldatasheet.com

VMI // Size 0805

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

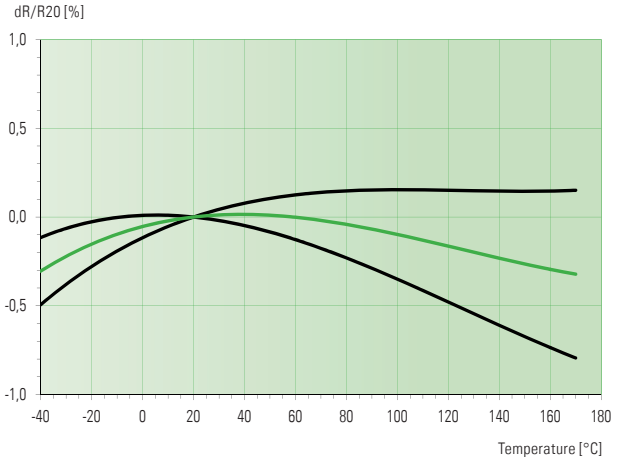
Specification

Parameters	**Test conditions**	**Specified values**
Temperature Cycling	2000 cycles (-55 °C to +150 °C)	±0.5 %
Low Temperature Storage and Operation	-65 °C for 24 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	20 g, 10-2000 Hz	±0.2 %
Operational Life	2000 h, T_K max at rated power	±1.0 %, T_K = 130 °C
High Temperature Exposure	2000 h / 170 °C	±1.0 %
Bias Humidity	+85 °C, 85 r.F., 1000 h, powered	±0.5 %

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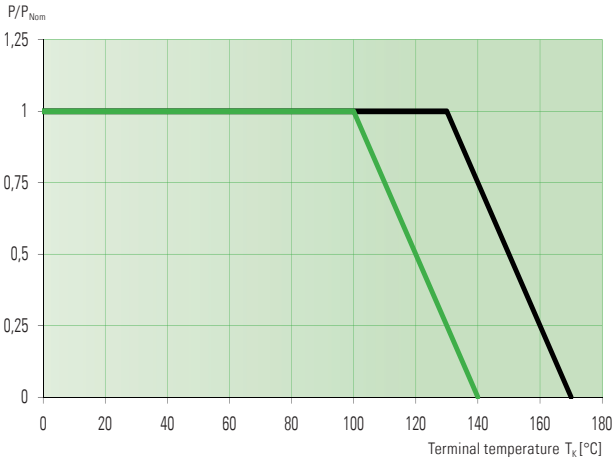
Temperature dependence of the electrical resistance



Limiting curve

Typical temperature dependence of a VMI resistor

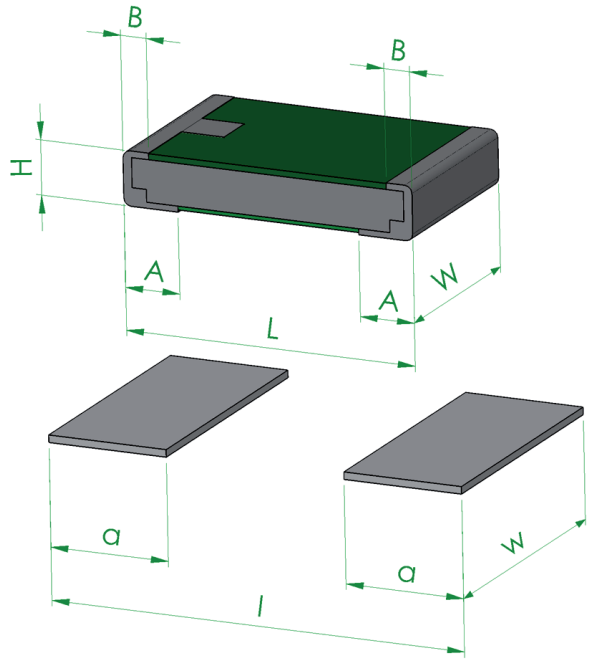
Power derating curve



Stability < 1.0 %

Improved stability < 0.5 %

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



Z-YE-494

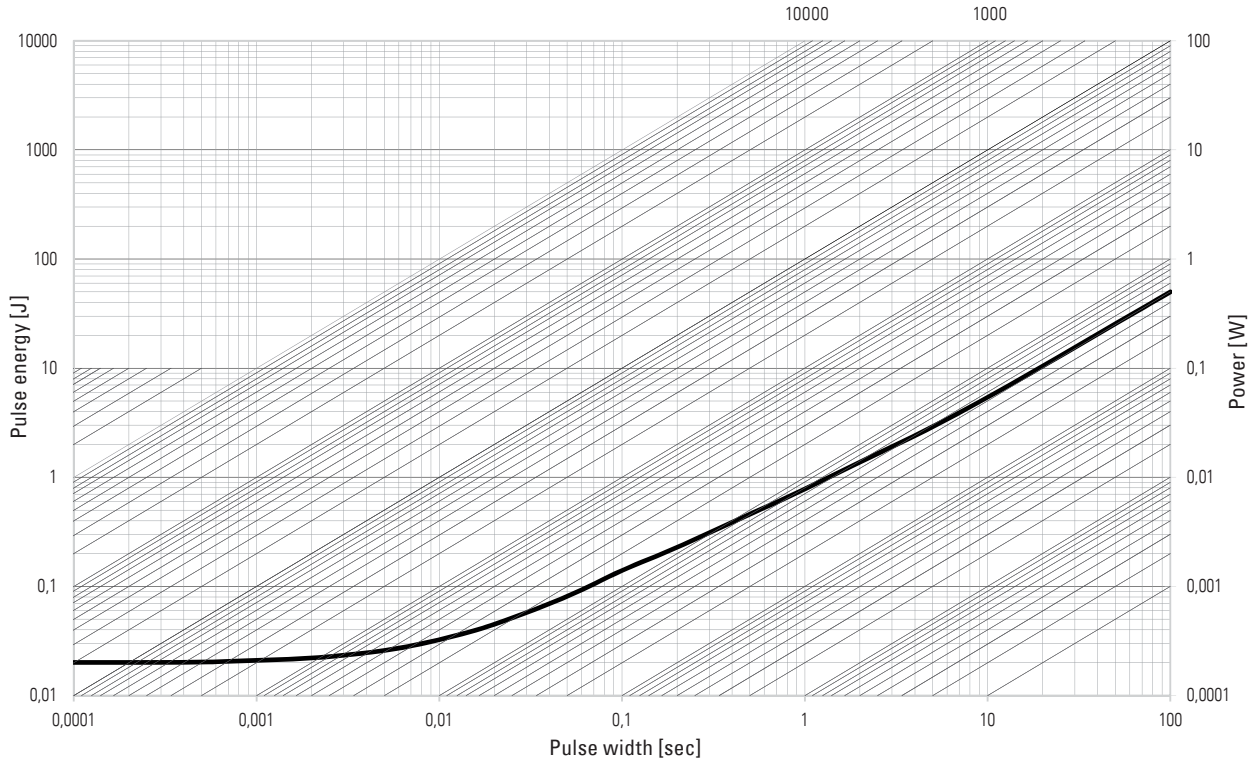
Type	L	W	H	A	B
VMI	2.03 ±0.15	1.27 ±0.15	0.4 ±0.15	0.38 ±0.15	0.18 +0.1/-0.05

Solder pad type	l	w	a
VMI	2.9	1.8	0.82

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Maximum pulse energy respectively pulse power for permanent operation



This curve is only valid for the resistance value R010. The shape of the curve in the range below 0.1 sec will be different for other resistance values. Therefore a separate qualification should be made for pulse power close to the above curve.

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