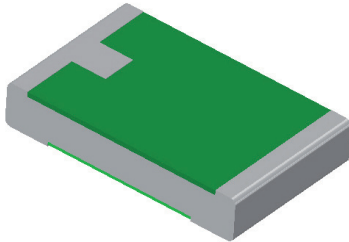




## ISA-PLAN® // PRECISION RESISTORS



### VMI-1.0 // Size 0805



#### Features

- 0.75 W power rating at 100 °C
- Constant current up to 8.5 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



#### 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

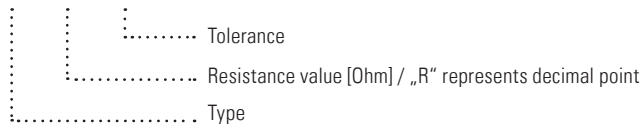
Resistance values <sup>1</sup>	<b>mOhm</b>	10 to 100
Tolerance	<b>%</b>	1.0
Temperature coefficient (20-60 °C) <sup>2</sup>	<b>ppm/K</b>	nominal value ±30
Applicable temperature range	<b>°C</b>	-65 to +170
Power rating <sup>2</sup>	<b>W</b>	up to 0.75
Internal heat resistance ( $R_{th}$ ) <sup>2</sup>	<b>K/W</b>	from 90
Dielectric withstanding voltage	<b>V AC/DC</b>	200
Inductance	<b>nH</b>	<1
Stability (at rated power) deviation after 2000h, $T_K$ = Terminal temperature	<b>%</b>	<0.5 ( $T_K=70$ °C) <1.0 ( $T_K=100$ °C)

<sup>1</sup> See all standard values and tolerances on page 2.

<sup>2</sup> See details in table „Electrical specification“ on page 3.

#### Ordering code

VMI - R010 - 1.0





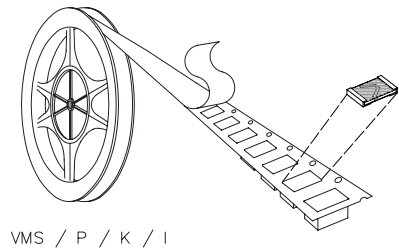
**VMI-1.0 // Size 0805**

**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	15000		
Packaging weight (net)	g	480		

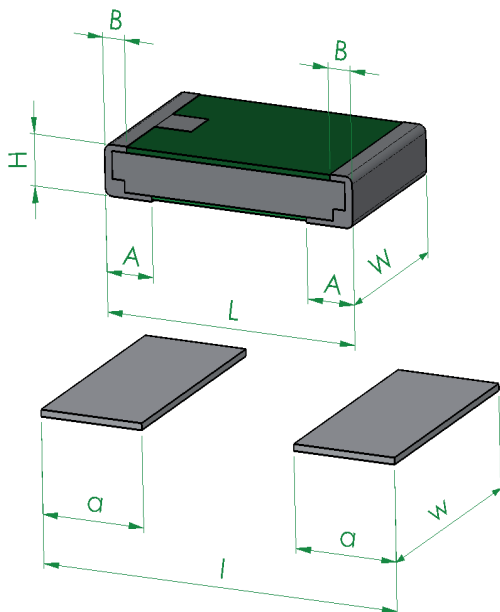


**Resistance values Tolerance 1%**

R010	✓
R012	✓
R020	✓
R033	✓
R050	✓
R075	✓
R100	✓

\* Further values and tolerances on request  
 ✓ = available

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



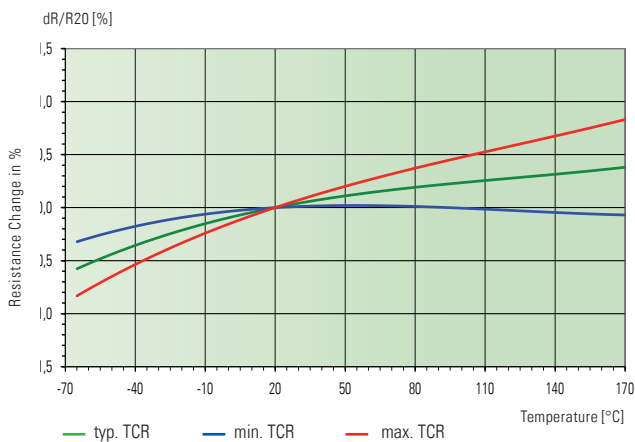
VMI-1.0 // Size 0805

Electrical specification

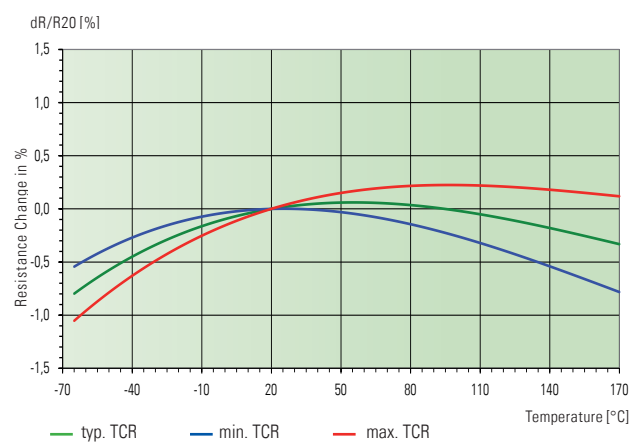
Type	Value [mΩ]	$R_{thi}$ [K/W]	TCR [ppm/K]	$P_{70^\circ\text{C}}$ [W]	$P_{100^\circ\text{C}}$ [W]
VMI-R010	10	<90	25 ±30	1.1	0.75
VMI-R012	12	<95	35 ±30	1.05	0.7
VMI-R020	20	<100	10 ±30	1.0	0.7
VMI-R033	33	<105	10 ±30	0.95	0.65
VMI-R050	50	<115	15 ±30	0.85	0.6
VMI-R075	75	<135	20 ±30	0.7	0.5
VMI-R100	100	<150	5 ±30	0.65	0.45

Temperature dependence of the electrical resistance

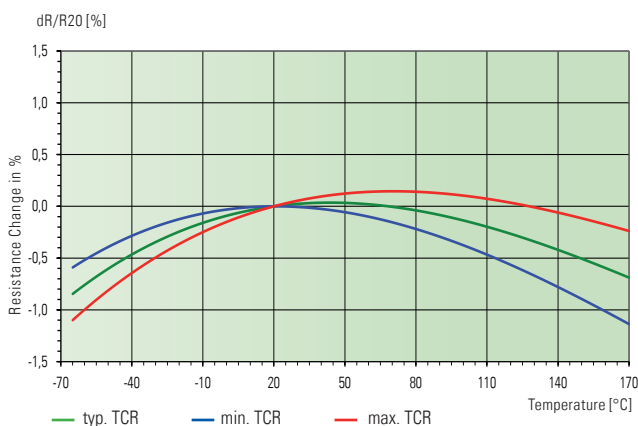
R012 Resistance Change with Temperature (-65 °C ≤ T ≤ 170 °C), ZERANIN®



R050 Resistance Change with Temperature (-65 °C ≤ T ≤ 170 °C), MANGANIN®



R100 Resistance Change with Temperature (-65 °C ≤ T ≤ 170 °C), NOVENTIN®

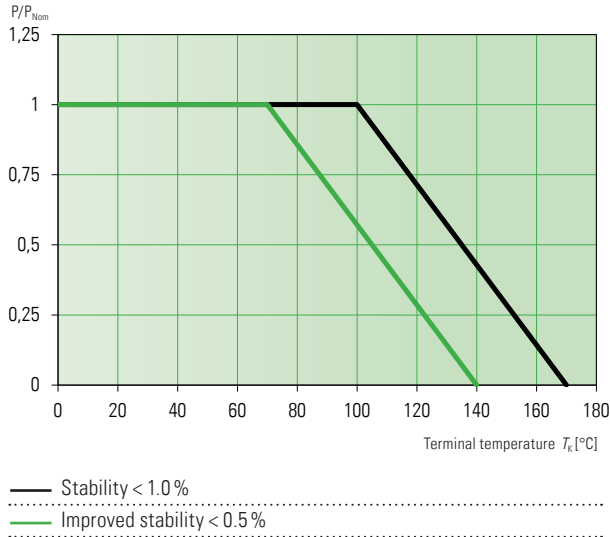




**VMI-1.0 // Size 0805**

**Power derating curve**

For detailed information see table „Electrical specification“



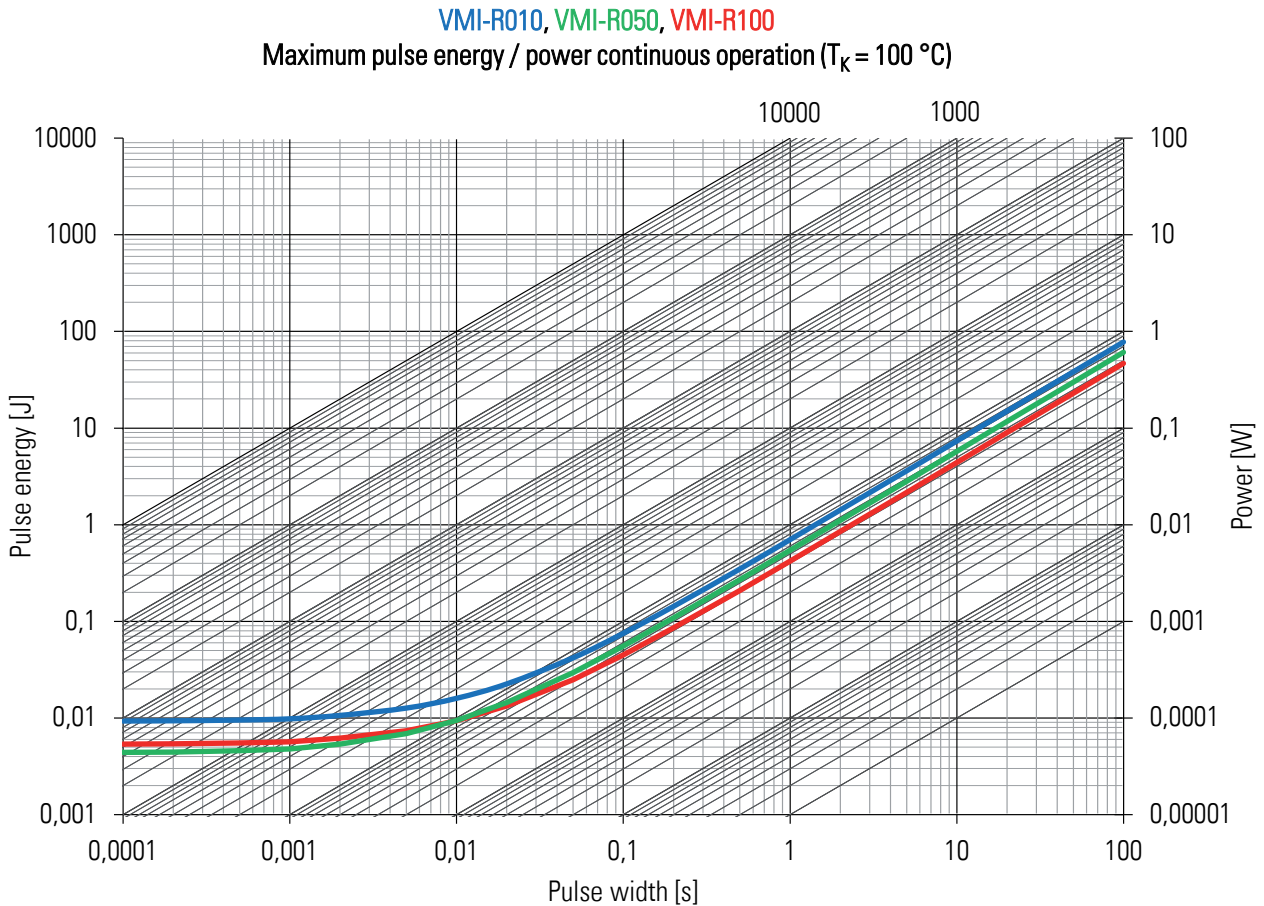
**Specification**

Parameters	Test conditions	Specified values
Temperature Cycling	1000 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, $T_k = 100$ °C max. at rated power	±1.0 %
High Temperature Exposure	2000 h at 170 °C	±1.0 %
Bias Humidity	+85 °C, 85 r.F., 1000 h, powered	±0.5 %



VMI-1.0 // Size 0805

Maximum pulse energy respectively pulse power for permanent operation



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