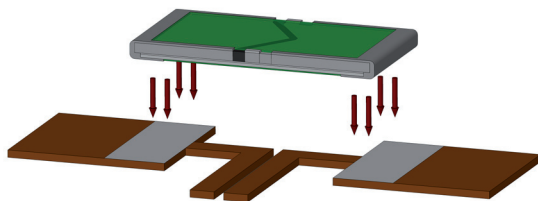




## ISA-PLAN® // PRECISION RESISTORS



### VMS // Size 2512



#### Features

- 3 W power rating at 95 °C
- Constant current up to 25 A (5 mOhm)
- Standard pad size (2512)
- High pulse power rating
- Excellent long-term stability
- 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

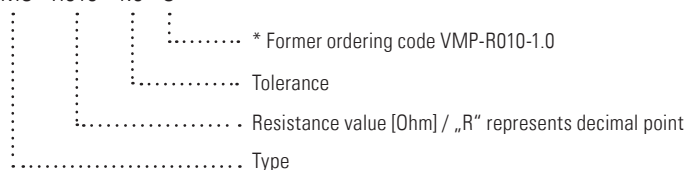
#### Technical data

Resistance values <sup>1</sup>	<b>Ohm</b>	0.005 to 1
Tolerance <sup>1</sup>	<b>%</b>	1 / 2 / 5
Temperature coefficient (20-60 °C)	<b>ppm/K</b>	<20
Applicable temperature range	<b>°C</b>	-65 to +170
Power rating <b>P<sub>95°C</sub></b>	<b>W</b>	3
Power rating <b>P<sub>70°C</sub></b>	<b>W</b>	4
Internal heat resistance (R <sub>thi</sub> )	<b>K/W</b>	<25
Dielectric withstanding voltage	<b>V AC/DC</b>	200
Inductance	<b>nH</b>	<3
Stability (at rated power) deviation after 2000h, T <sub>K</sub> = Terminal temperature		<0.5 % (T <sub>K</sub> =65 °C) <0.7 % (T <sub>K</sub> =95 °C)

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

#### Ordering code

VMS - R010 - 1.0 - U\*





**VMS // Size 2512**

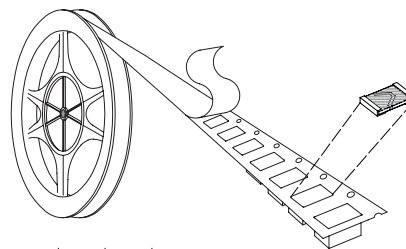
**Recommended solder profile**

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	9000
Packaging weight net	g	539



VMS / P / K / I

**Available standard resistance values and tolerances\***

Resistance values	Tolerance 1 %	Tolerance 2 %	Tolerance 5 %
R005	✓		
R0068			✓
R010	✓		✓
R012	✓		
R015	✓		
R020	✓		
R022	✓		
R025	✓		
R027	✓		
R030	✓		
R033	✓		
R039	✓		
R040	✓		
R047	✓		
R050	✓		
R056	✓		
R068	✓		
R082	✓		
R100	✓		
R120	✓		
R150	✓		
R200	✓		
R220	✓		
R240	✓		
R270		✓	
R330	✓		
R470	✓		
R500	✓		
R680	✓		
1R00	✓		

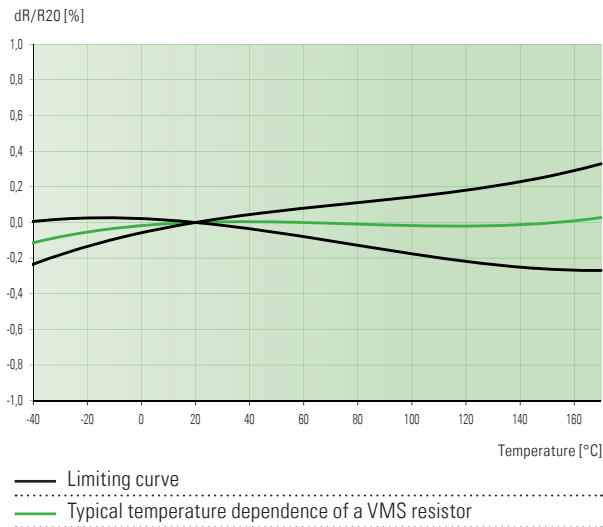
\* Further values and tolerances on request

✓ = available

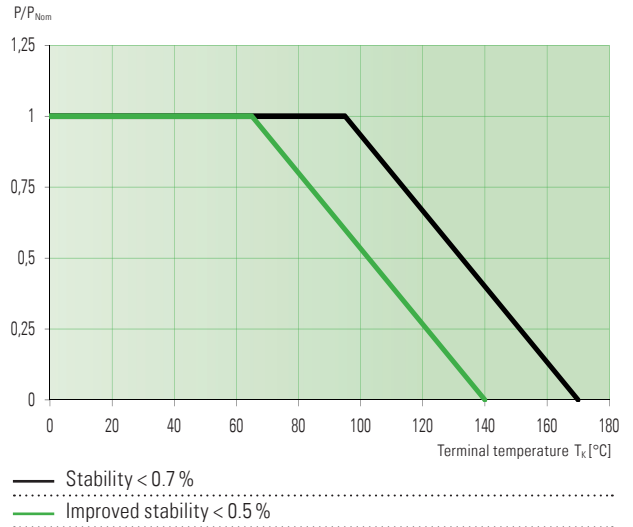


**VMS // Size 2512**

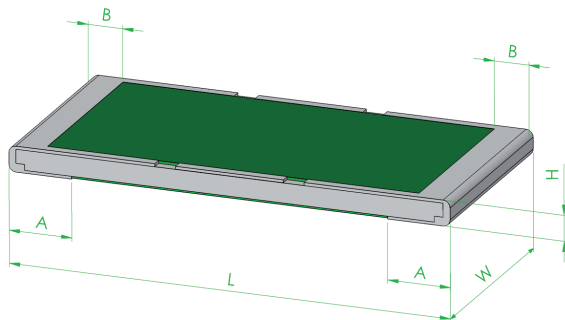
**Temperature dependence of the electrical resistance**



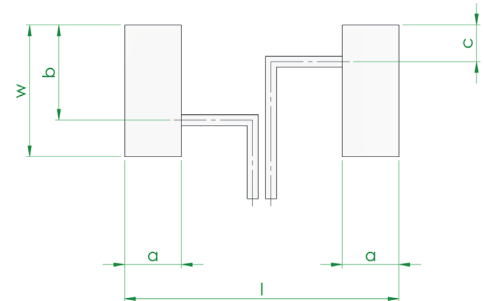
**Power derating curve**



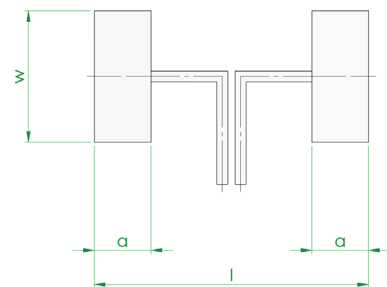
**Mechanical dimensions and pcb-layout proposal (Reflow-soldering) [mm] / Drawing Z-YE-497**



Layout if TC < 20 ppm/K is required for R in between 30 and 80 mOhm



Type	L	W	H	A	B
VMS	6.35 ±0.3	3.05 ±0.2	0.4 ±0.15	0.9 ±0.2	0.5 ±0.2

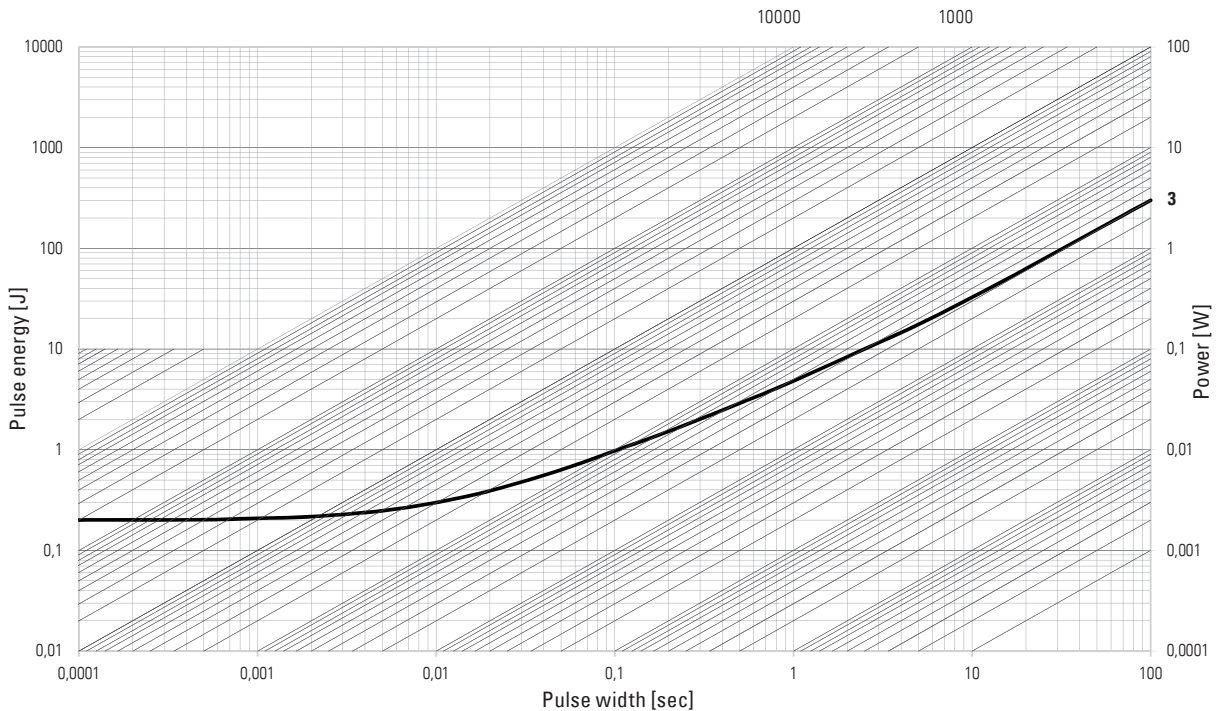


Solder pad type	l	w	a	b	c
VMS	7.5	3.6	1.55	2.6	1.0



VMS // Size 2512

Maximum pulse energy respectively pulse power for permanent operation



This curve is only valid for the resistance value R005. 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.

Specification

Parameters	Test conditions	Specified values
Temperature Cycling	2000 cycles (-55 °C to +150 °C)	±0.5 %
Low Temperature Storage	-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	±0.3 %
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 <sub>k</sub> max at rated power	±1.0 %, T <sub>k</sub> = 95 °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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