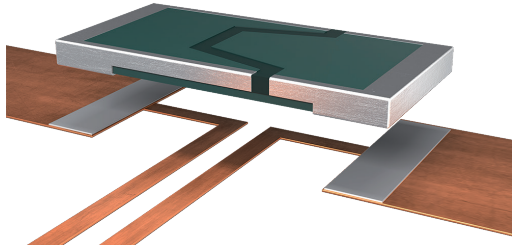




ISA-PLAN® // PRECISION RESISTORS



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

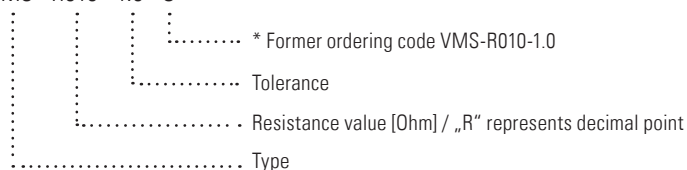
Technical data

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

¹ See all standard values and tolerances on page 2

Ordering code

VMS - R010 - 1.0 - U*





VMS // Size 2512

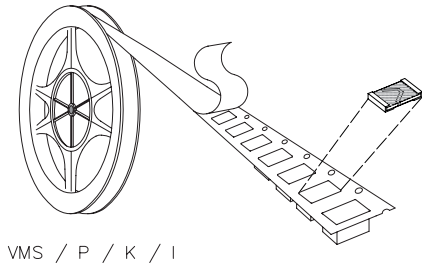
Recommended solder profile

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	✓		
R030	✓		
R033	✓		
R039	✓		
R040	✓		
R047	✓		
R050	✓		
R056	✓		
R068	✓		
R082	✓		
R100	✓		
R120	✓		
R150	✓		
R180	✓		
R200	✓		
R220	✓		
R240	✓		
R270		✓	
R300	✓		
R330	✓		
R470	✓		
R500	✓		
R680	✓		
1R00	✓		

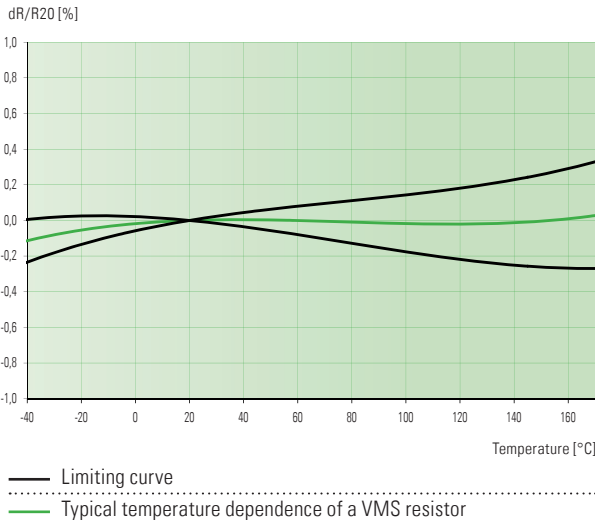
* Further values and tolerances on request

✓ = available

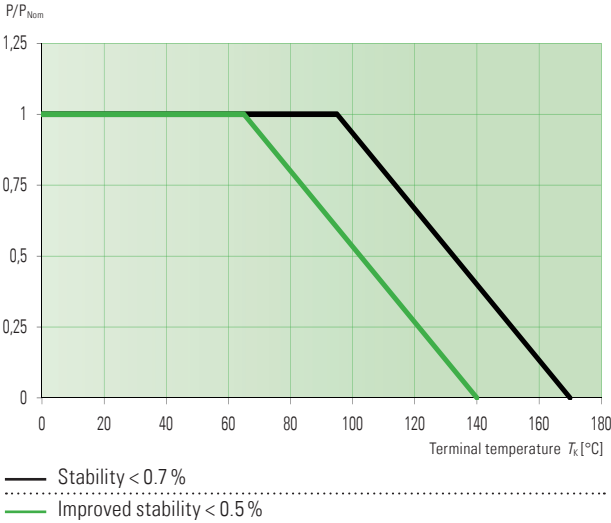


VMS // Size 2512

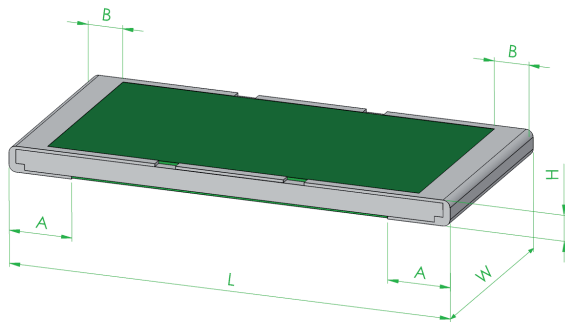
Temperature dependence of the electrical resistance



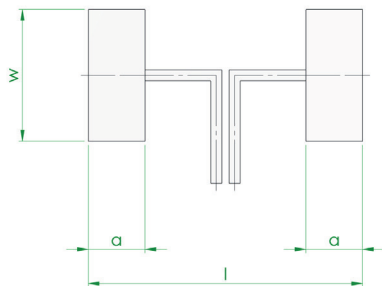
Power derating curve



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

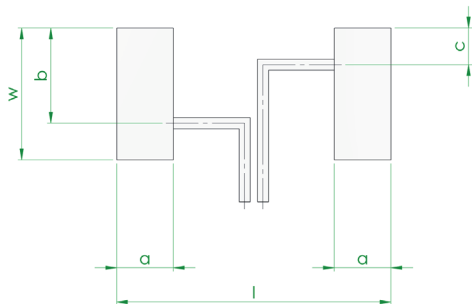


Layout 1



Layout 2

Layout for values > 30 mOhm if TC < 20 ppm/K is required



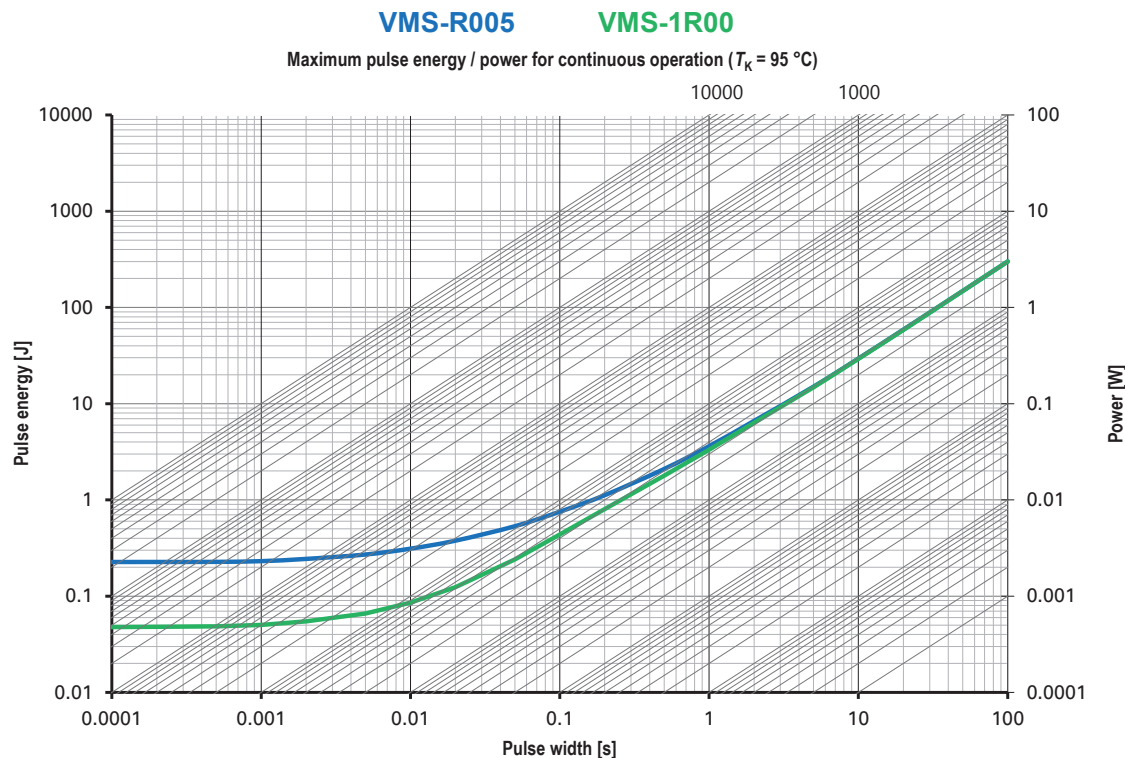
Type	L	W	H	A	B
VMS	6.35 ± 0.3	3.05 ± 0.2	0.4 ± 0.15	0.9 ± 0.2	0.5 ± 0.2

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



Specification

Parameters	Test conditions	Specified values
Temperature Cycling	2000 cycles (-55 °C to +150 °C)	±0.5 %
Low Temperature Storage	-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	±0.3 %
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, $T_K = 95^\circ\text{C}$ at rated power	±0.7 %
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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