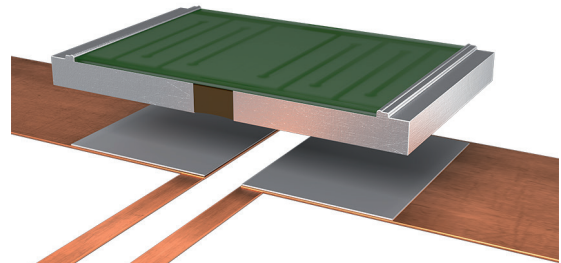


SMS (2512)

ISA-PLAN® PRECISION RESISTOR



FEATURES

- 5 W power rating at 70 °C
- Constant current up to 25 A (5 mOhm)
- Excellent long-term stability
- High pulse power rating
- Mounting: Reflow-, and IR-soldering
- AEC-Q200 qualified
- Available as Jumper, see "SMS-R000" data sheet



APPLICATIONS

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

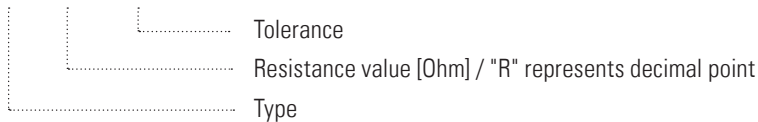
Technical data

Resistance values	mOhm	0.005 to 1 *
Tolerance	%	0.5 / 1 / 2 / 5 *
Temperature coefficient (20-60 °C)	ppm/K	0 ± 50
Applicable temperature range	°C	-65 to +170
Power rating P_{110°C}	W	3
Power rating P_{70°C}		5
Internal heat resistance (R_{thi})	K/W	<20
Dielectric withstanding voltage (AC/DC)	V	200
Inductance	nH	<3
Stability (at rated power) deviation after 2000h	%	<0.5 ($T_K = 80\text{ °C}$)
T_K = Terminal temperature		<1.0 ($T_K = 110\text{ °C}$)

* For detailed information see table on page 3

Ordering code

SMS - R005 - 1.0



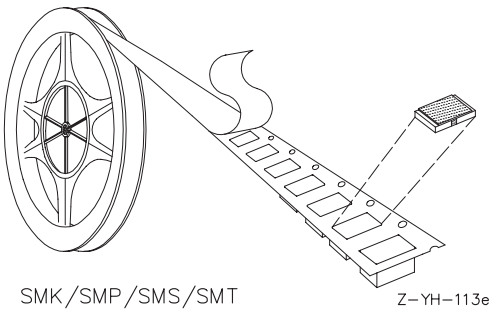
Recommended solder profile

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

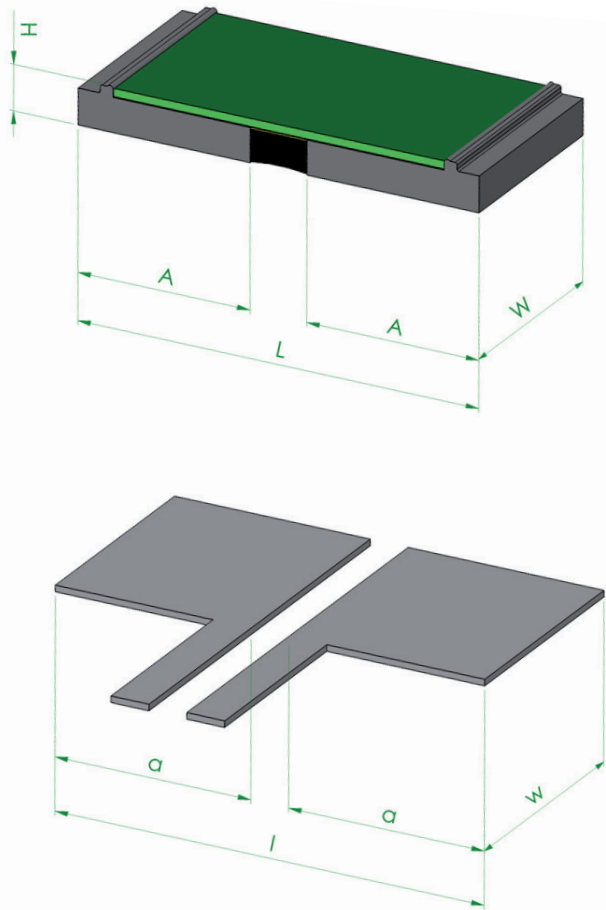
Tape and reel information

Specification		DIN EN 60286-3		
Tape width	mm	12		
Reel size	inch	13		
Parts per reel	pcs	5000		
Packaging weight	g	453		

Slight deformations during soldering do not affect technical properties of the component.



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



Type	L	W	H	A
SMS	6.35 ± 0.2	3.05 ± 0.1	0.8 ± 0.2	2.725 ± 0.4

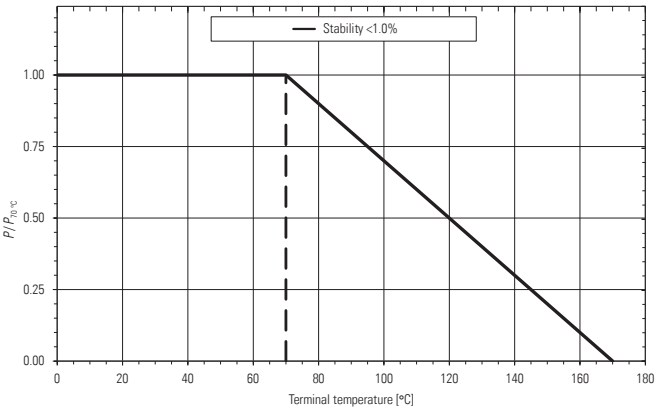
Solder pad type	l	w	a
SMS	6.8	3.5	3.1

Available standard resistance values and tolerances*

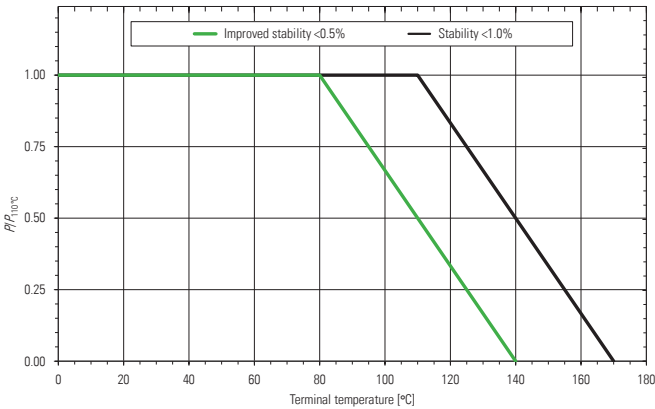
Resistance values	Tolerance			
	0.5	1.0	2.0	5.0
R005		✓		✓
R0075		✓		
R008		✓		
R009		✓		
R010		✓		
R012		✓		
R015		✓		
R018		✓		
R020	✓	✓		
R022		✓		✓
R025		✓		
R030		✓		
R033	✓	✓		
R039		✓		
R040	✓	✓		
R047		✓		
R050	✓	✓		
R068	✓	✓		

Resistance values	Tolerance			
	0.5	1.0	2.0	5.0
R075		✓		
R082		✓		
R100	✓	✓		
R120		✓		✓
R150	✓	✓		✓
R180		✓		
R200	✓	✓	✓	
R220	✓	✓		
R250		✓		✓
R270	✓	✓		
R330	✓	✓		
R390		✓		
R470		✓		
R500		✓		
R680		✓		
R820		✓		
1R00	✓	✓	✓	

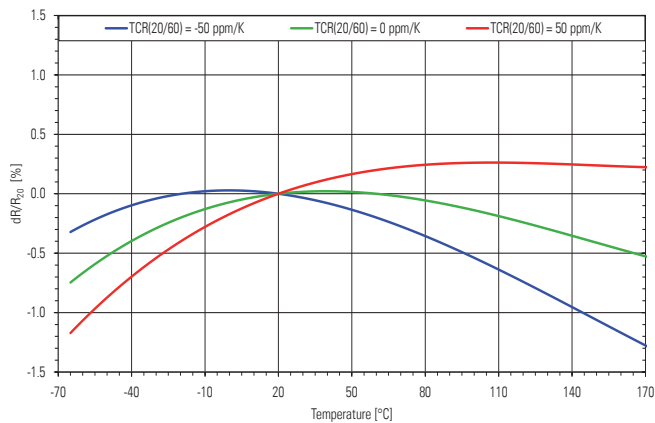
Power derating curve at 70 °C



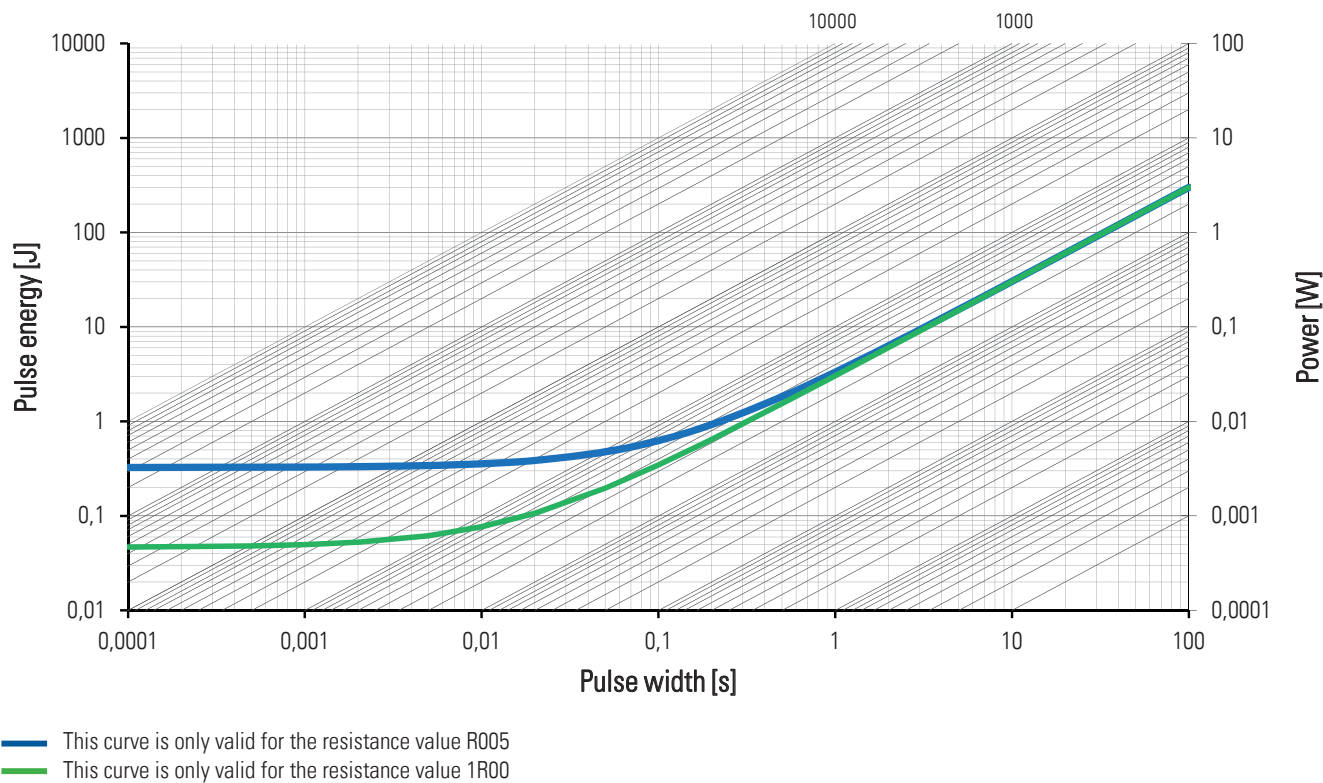
Power derating curve at 110 °C



Temperature dependence of the electrical resistance of MANGANIN® resistors



Maximum pulse energy respectively pulse power for permanent operation ($T_K=110\text{ }^{\circ}\text{C}$)



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%
Mechanical Shock	100 g, 6 ms half sine	±0.1%
Vibration, High Frequency	10 g, 10-2000 Hz, 24 h each axis	±0.1%
Operational Life	2000 h, T_K max at rated power	±1.0%
High Temperature Exposure	2000 h / 170 °C	±1.0%
Bias Humidity	+85 °C, 85 r.F., 1000 h	±0.5%

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