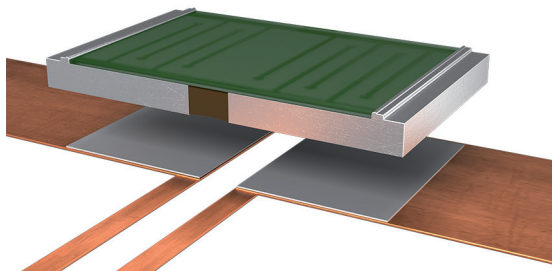




## ISA-PLAN® // PRECISION RESISTORS



### SMK // Size 1206



#### Features

- 1 W power rating at 110 °C
- Constant current up to 11 A (8 mOhm)
- Excellent long-term stability
- High pulse power rating
- 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
- Power modules
- Frequency converters
- Switch mode power supplies

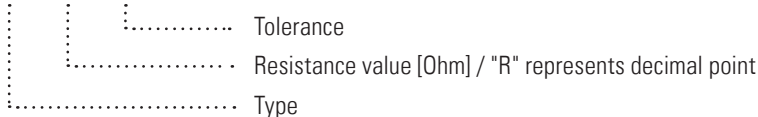
#### Technical data

Resistance values	<b>mOhm</b>	5 to 500
Tolerance	<b>%</b>	1* / 5
Temperature coefficient (20-60 °C)	<b>ppm/K</b>	R < 15 mΩ : < 100 R ≥ 15 mΩ : < 50
Applicable temperature range	<b>°C</b>	-65 to +170
Power rating	<b>W</b>	1
Internal heat resistance (R <sub>thi</sub> )	<b>K/W</b>	< 60
Dielectric withstanding voltage	<b>V AC/DC</b>	200
Inductance	<b>nH</b>	< 3
Stability (Nominal load) deviation after 2000h		< 0.5 % (T <sub>K</sub> =80 °C)
T <sub>K</sub> = Terminal temperature		< 1.0 % (T <sub>K</sub> =110 °C)

\* from 10 mOhm

#### Ordering code

SMK - R010 - 5.0





## SMK // Size 1206

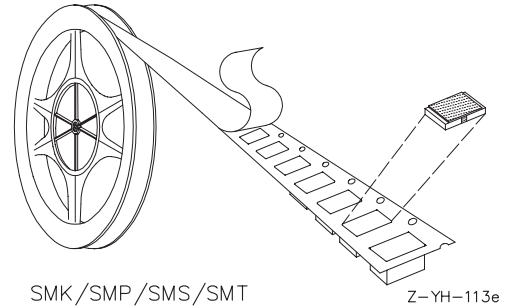
### Recommended solder profile

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	12500		
Packaging weight	g	452		

With differing pcb-layout geometry it is possible that the measured resistance value can vary. Slight deformations during soldering do not affect technical properties of the component.



### Available standard resistance values and tolerances\*

Resistance values	Tolerance	
	1.0	5.0
R005		✓
R008		✓
R010	✓	✓
R020	✓	✓
R025	✓	
R033	✓	
R050	✓	✓
R100	✓	
R170	✓	
R200	✓	✓
R220	✓	
R360	✓	
R500	✓	

\* Further values and tolerances on request

✓ = available

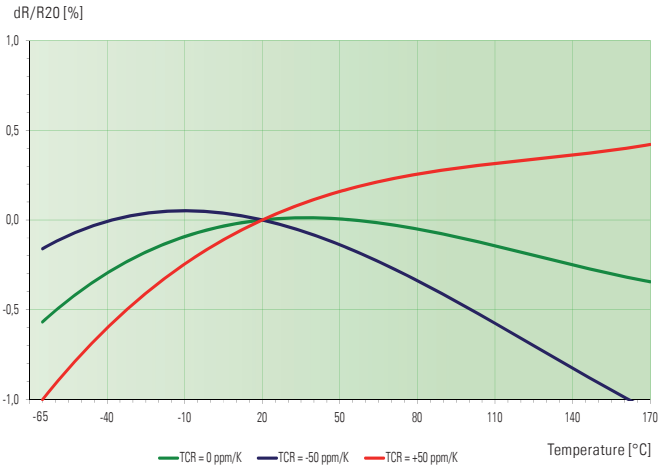
### Specification

Parameters	Test conditions	Specified values
Temperature Cycling	2000 cycles (-55°C to +150°C)	±0.5 %
Low Temperature Storage and Operation	-65°C for 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	±0.1 %
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, TK 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 %

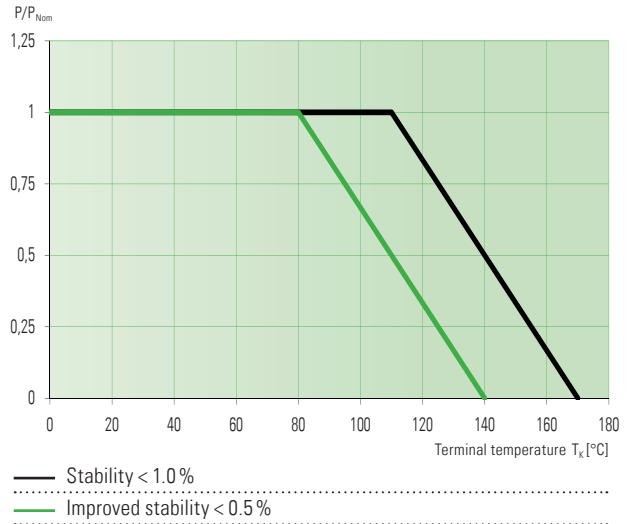


## SMK // Size 1206

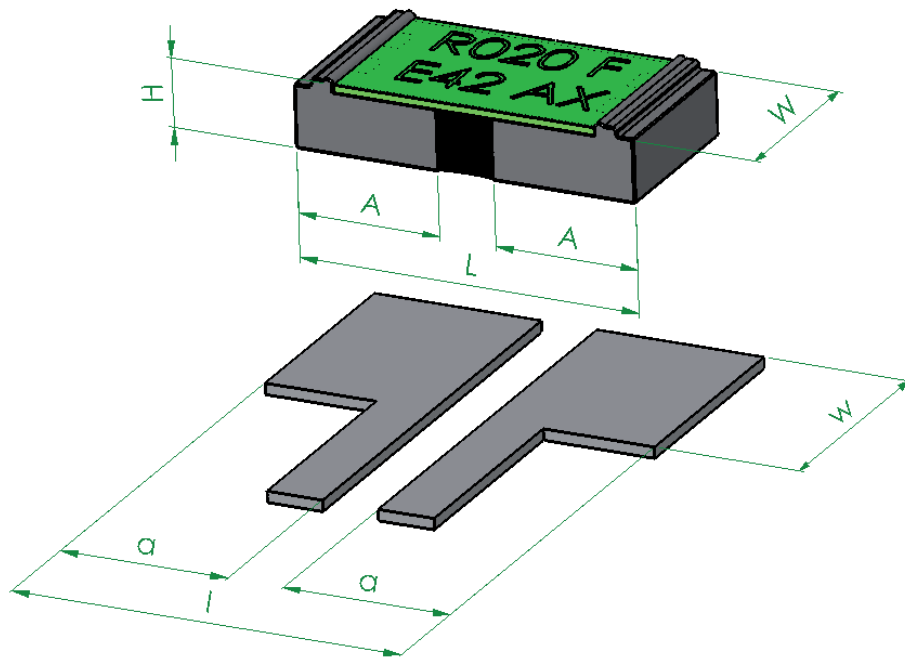
### Temperature dependence of the electrical resistance of MANGANIN® resistors



### Power derating curve



### Mechanical dimensions [mm]



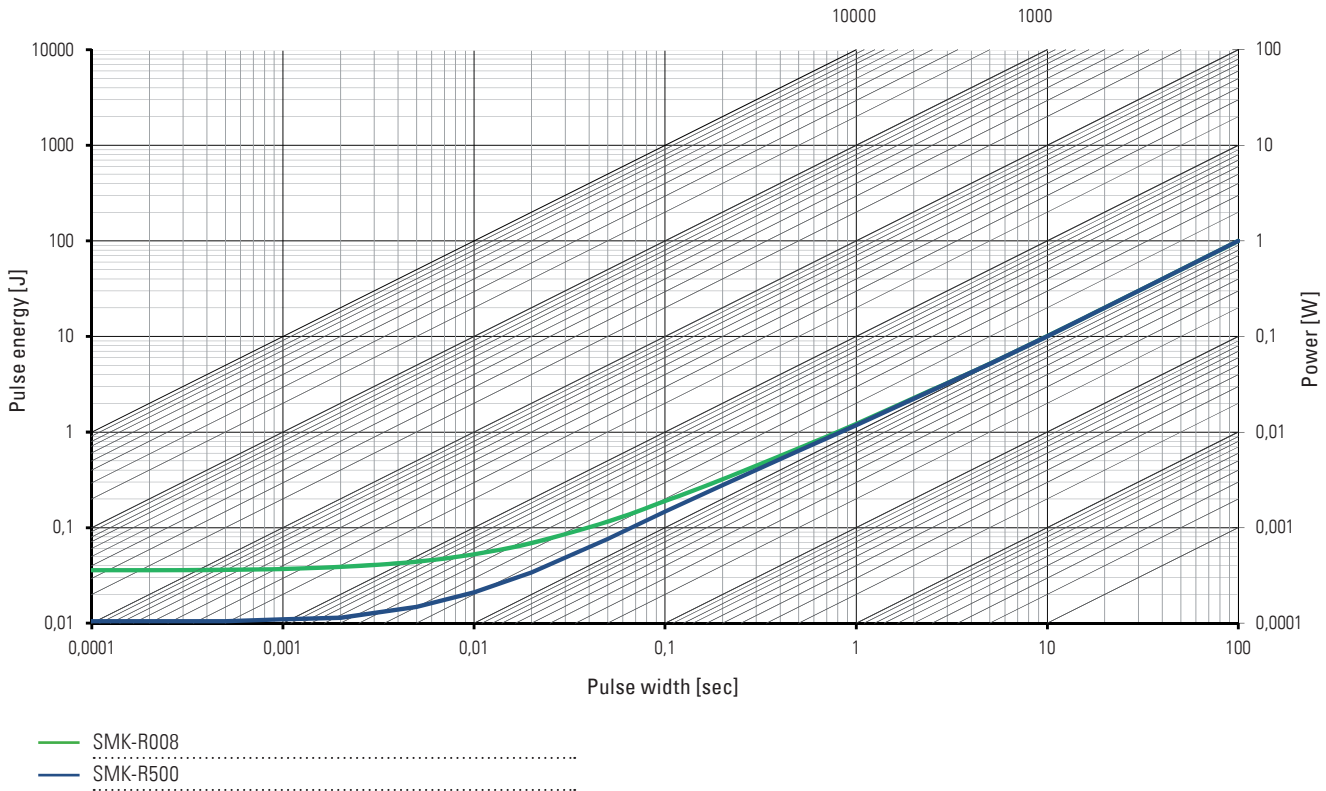
type:	L	W	A	H
SMK	3.05 ± 0.1	1.52 ± 0.1	(1.275)	0.5 ± 0.2

solder pad type:	l	w	a
SMK	3.5	2.0	1.5



**SMK // Size 1206**

**Maximum pulse energy respectively pulse power for permanent operation**



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