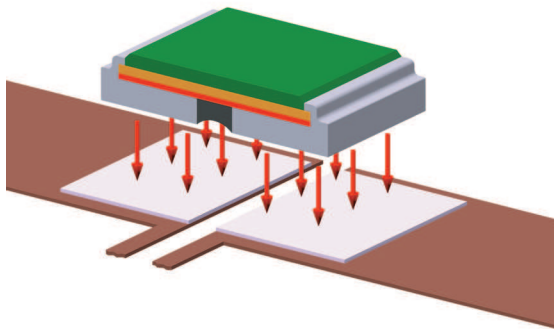




## ISA-PLAN® // PRECISION RESISTORS



### 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



#### 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>	8 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>	-55 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



## SMK // Size 1206

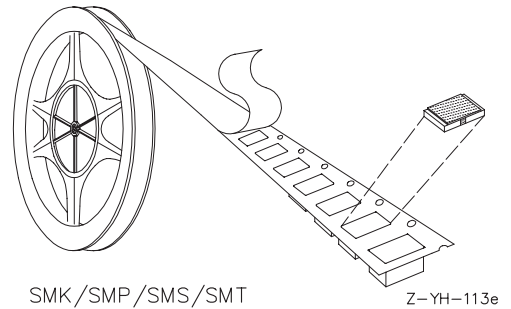
### Recommended solder profile

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.



SMK/SMP/SMS/SMT

Z-YH-113e

### Available standard resistance values and tolerances\*

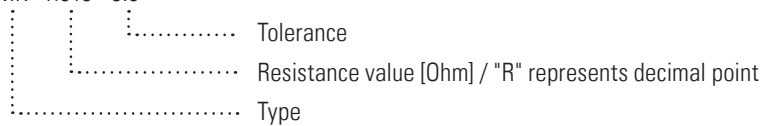
Resistance values	Tolerance	
	1.0	5.0
R008		✓
R010	✓	✓
R020	✓	✓
R025	✓	
R033	✓	
R050	✓	✓
R100	✓	
R170	✓	
R200	✓	✓
R220	✓	
R360	✓	
R500	✓	

\* Further values and tolerances on request

✓ = available

### Ordering code

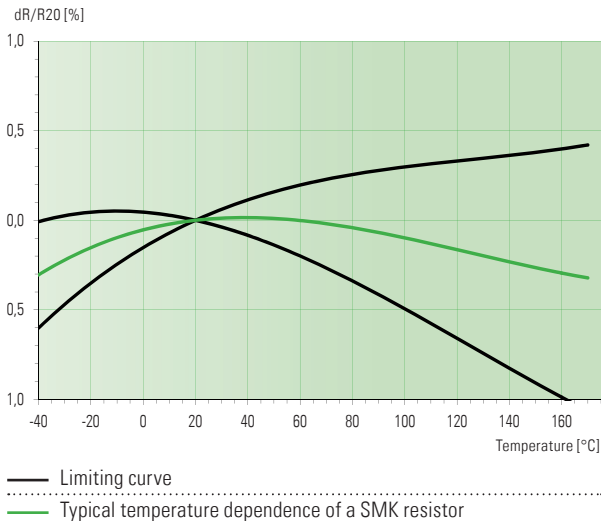
SMK - R010 - 5.0



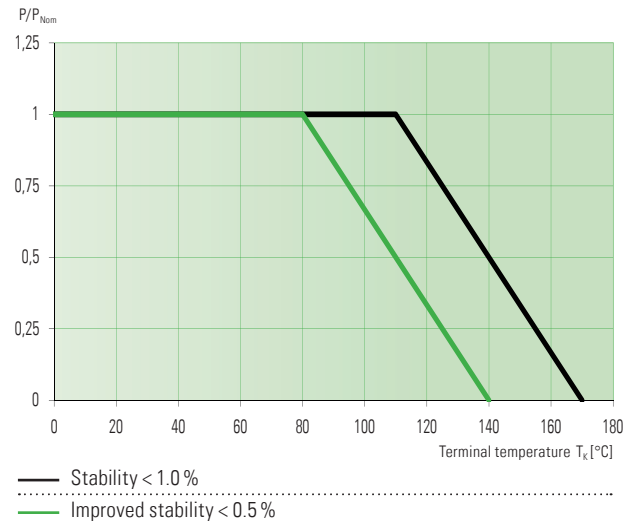


SMK // Size 1206

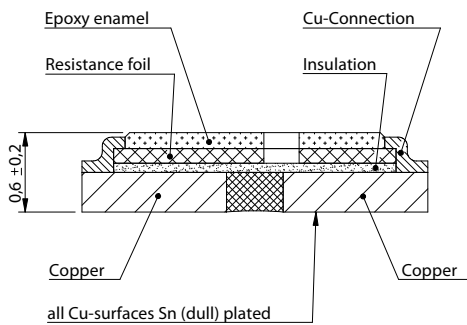
Temperature dependence of the electrical resistance of MANGANIN® resistors



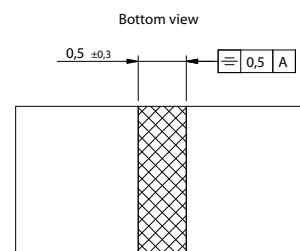
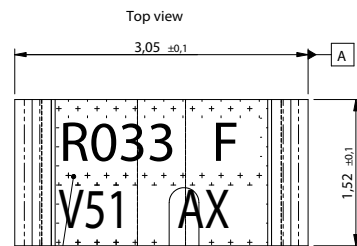
Power derating curve



Mechanical dimensions [mm]



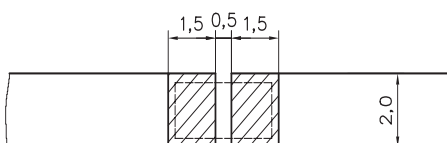
Z-DK-117d



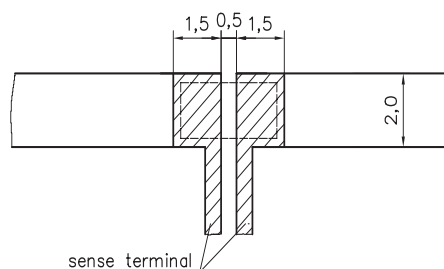
Z-DK-117d

Pcb-layout proposal (Reflow-soldering) [mm]

2 terminal connection



4 terminal connection



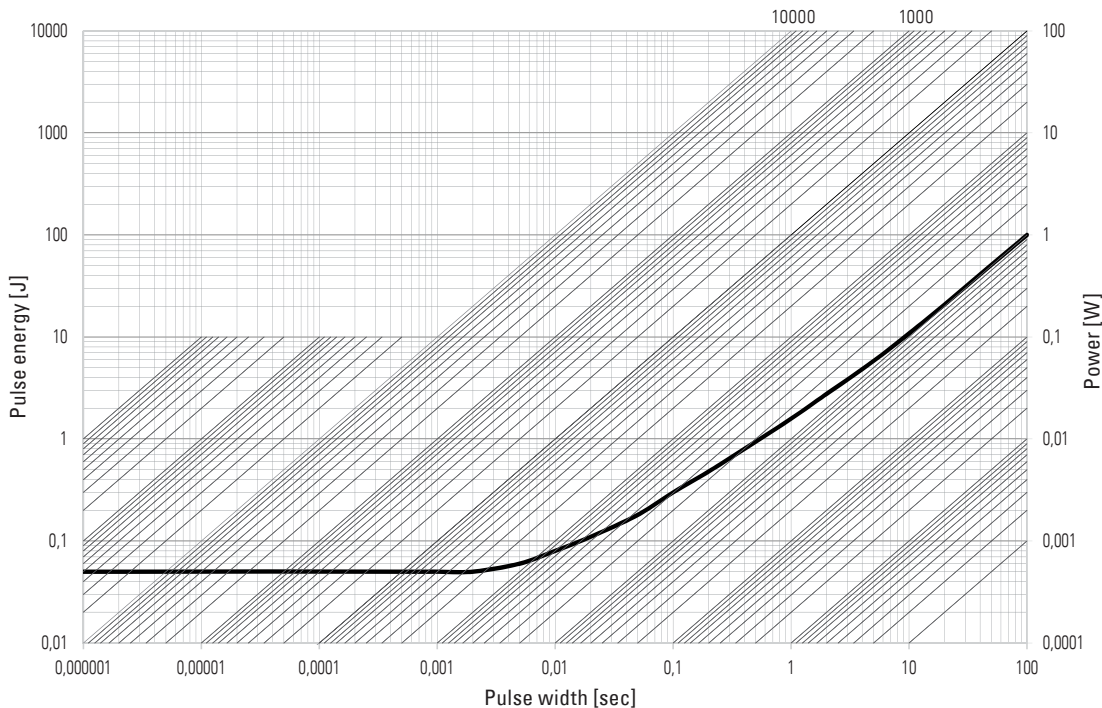
The measured resistance value may vary with differing pcb-layout geometries.

Z-YK-190a



SMK // Size 1206

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



This curve is only valid for the resistance value R008.

**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 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	±0.1 %
Mechanical Shock	100 g, 6 ms half sine	±0.1 %
Vibration, High Frequency	20 g, 10-2000 Hz	±0.1 %
Operational Life	2000 h, TK max at nominal load	±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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