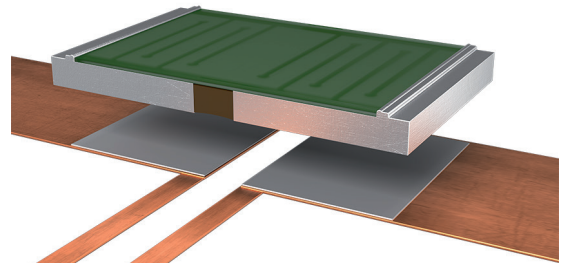


SMT (2817)

ISA-PLAN® PRECISION RESISTOR



FEATURES

- 5 W power rating at 105 °C
- Constant current up to 35 A (4 mOhm)
- Excellent long-term stability
- High pulse power rating
- Mounting: Reflow-, and IR-soldering
- AEC-Q200 qualified
- Available as Jumper, see "SMT-R000" data sheet



APPLICATIONS

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

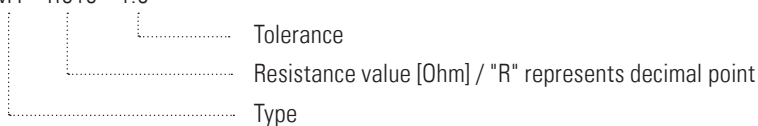
Technical data

Resistance values	Ohm	0.003 to 4.7 *
Tolerance	%	0.5 / 1 / 2 / 5 *
Temperature coefficient (20-60 °C)	ppm/K	<50 for $\geq 10 \text{ m}\Omega$ <100 for $< 10 \text{ m}\Omega$
Applicable temperature range	°C	-65 to +170
Power rating $P_{105^\circ\text{C}}$	W	5 for $< 1 \Omega$ 3 for $\geq 1 \Omega$
Power rating $P_{70^\circ\text{C}}$	W	7 for $< 1 \Omega$ 5 for $\geq 1 \Omega$
Internal heat resistance (R_{thi})	K/W	<13 for $< 1 \Omega$ <22 for $\geq 1 \Omega$
Dielectric withstanding voltage (AC/DC)	V	200
Inductance	nH	<3
Stability (at rated power) deviation after 2000h T_K = Terminal temperature	%	<0.5 ($T_K = 75^\circ\text{C}$) <1.0 ($T_K = 105^\circ\text{C}$)

* For detailed information see table on page 3

Ordering code

SMT - R010 - 1.0



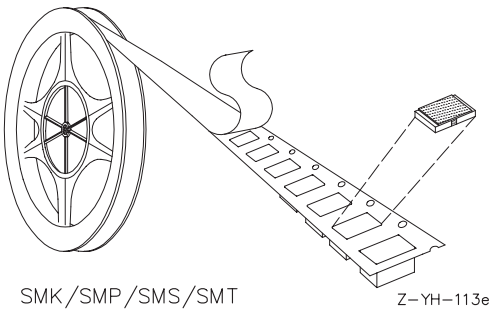
Recommended solder profile

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

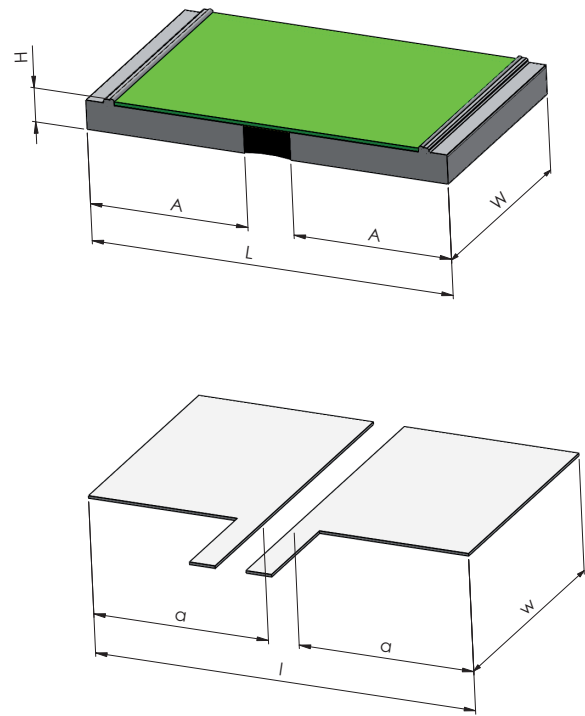
Tape and reel information

Specification	DIN EN 60286-3			
Tape width	mm	12		
Reel size	inch	13		
Parts per reel	pcs	5000		
Packaging weight	g	494		

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



Mechanical dimensions and pcb-layout proposal (Reflow-soldering) [mm] // Z-YE-1019b



Type	L	W	H*	A
SMT	7.1 ± 0.2	4.2 ± 0.1	0.8 ± 0.2	3.1

* for values ≥1Ω, H = 0.7mm ± 0.2

Solder pad type	l	w	a
SMT	7.4	4.6	3.4

Available standard resistance values and tolerances*

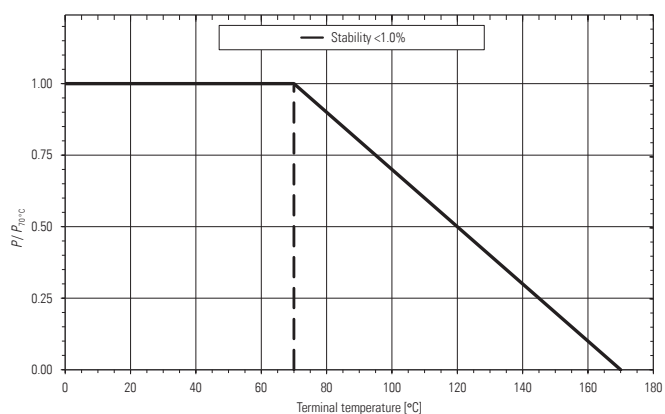
Resistance values	Tolerance			
	0.5	1.0	2.0	5.0
R003		✓		✓
R004		✓		
R005	✓	✓		✓
R0056		✓		
R0068		✓	✓	✓
R008		✓		✓
R0091		✓		
R010		✓	✓	✓
R0135		✓		
R014		✓		
R015		✓		✓
R018		✓		✓
R020		✓		
R022	✓	✓		✓
R025	✓	✓		✓
R027		✓		
R030		✓		
R033	✓	✓		
R039		✓		
R040		✓		
R047		✓		✓
R050	✓	✓		
R056		✓		
R068	✓	✓	✓	
R082		✓		
R100	✓	✓		✓
R120		✓		
R150		✓		
R170		✓	✓	
R180		✓		
R200		✓		
R220		✓		✓
R250		✓		
R270		✓	✓	
R330		✓		
R390		✓		

Resistance values	Tolerance			
	0.5	1.0	2.0	5.0
R400	✓			
R470		✓	✓	
R500	✓	✓		
R560		✓		
R680		✓		
R820		✓		
1R00	✓	✓		
1R20		✓		
1R50		✓		
1R80		✓		
2R00		✓		
2R20		✓		
2R70		✓		
3R00				✓
3R30		✓		
3R90		✓		
4R00		✓		
4R70		✓		

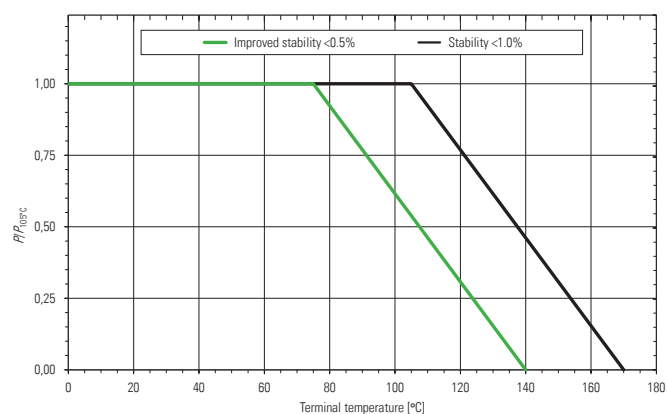
✓ = available

* further values and tolerances on request

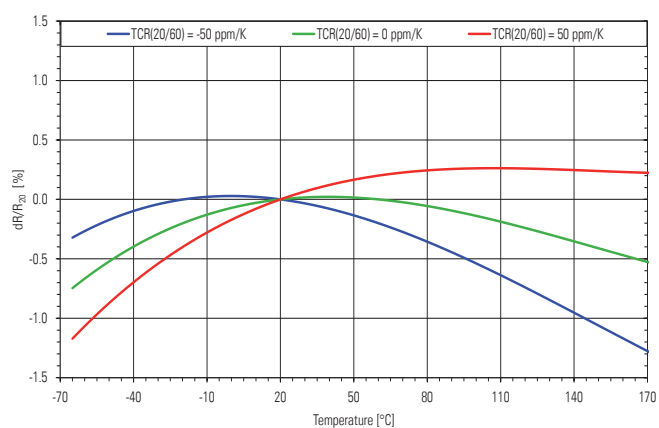
Power derating curve at 70 °C



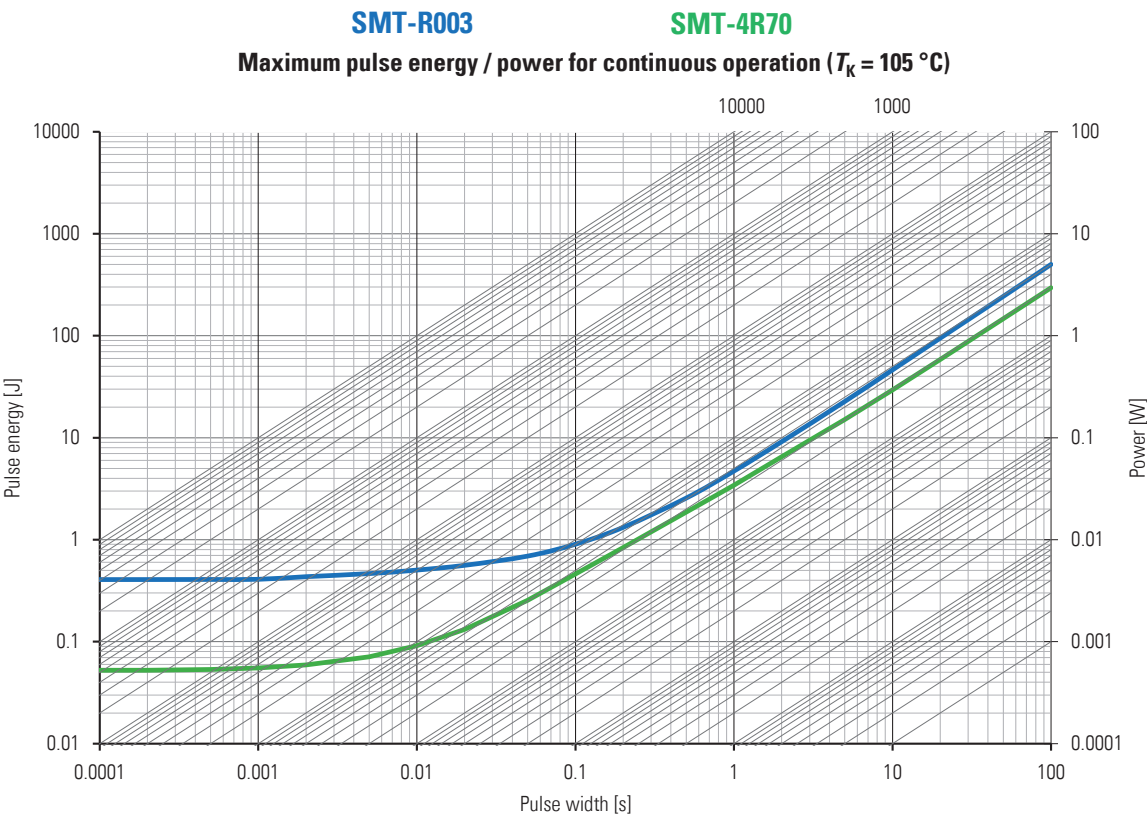
Power derating curve at 105 °C



Temperature dependence of the electrical resistance of MANGANIN® resistors



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 and Operation	-65 °C for 250 h	±0.1%
Resistance to Soldering Heat	260 °C for 10 sec / 8h steam aging	±0.3%
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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