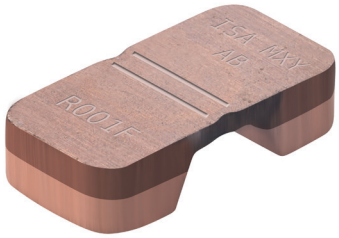
ISABELLENHÜTTE
Innovation by Tradition

PRECISION RESISTORS

WAK // Size 1206



Features

- Constant current up to 90 A (0.5 mOhm)
- 4 W power rating up to 150 °C
- Two terminal configuration
- Excellent long-term stability
- High application temperature range -65 to +175 °C
- RoHS 2011/65/EU compliant
- Max. solder temperature up to 350 °C / 30 sec
- AEC-Q200 qualification in process

RoHS

Applications

- Current sensor for power hybrid applications
- High current applications for the automotive market
- Frequency converters
- Power modules

Technical data

Resistance values	**mOhm**	**1**	**0.5**
Material		ZERANIN®	
Tolerance	**%**	1 / 5	
Temperature coefficient (20-60 °C)	**ppm/K**	<100	<130
Applicable temperature range	**°C**	-65 to +175	
Power rating $P_{150\,°C}$	**W**	2	4
Power rating $P_{70\,°C}$	**W**	6	6
Internal heat resistance (R_{thi})	**K/W**	12	6
Inductance	**nH**	<0.5	
Stability (at rated power) deviation after 2000h, T_K = Terminal temperature		<0.5% (T_K=110 °C) <1.0% (T_K=150 °C)	

Ordering code

WAK - Z - R001 - 1.0

- Tolerance
- Resistance value [Ohm] / „R" represents decimal point
- Material (ZERANIN®)
- Type

Information

WAK-Z-R0005-1.0	C-samples available
WAK-Z-R001-1.0	C-samples available, AEC-Q200 qualified

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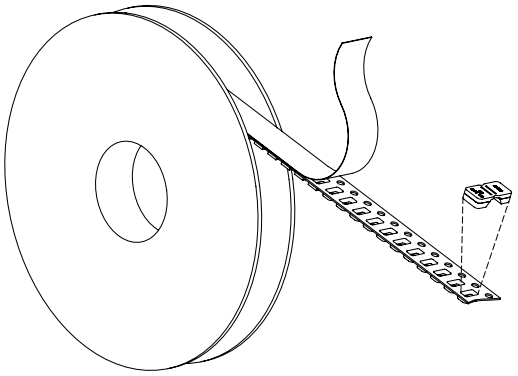
Recommended solder profile

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

Note: we recommend to use 10% less solder paste during screen process, for optimal flow during the soldering process.

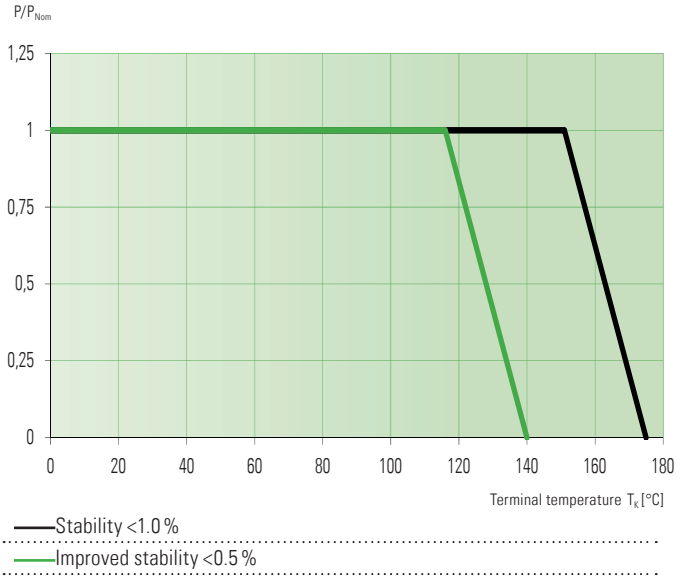


Tape and reel information

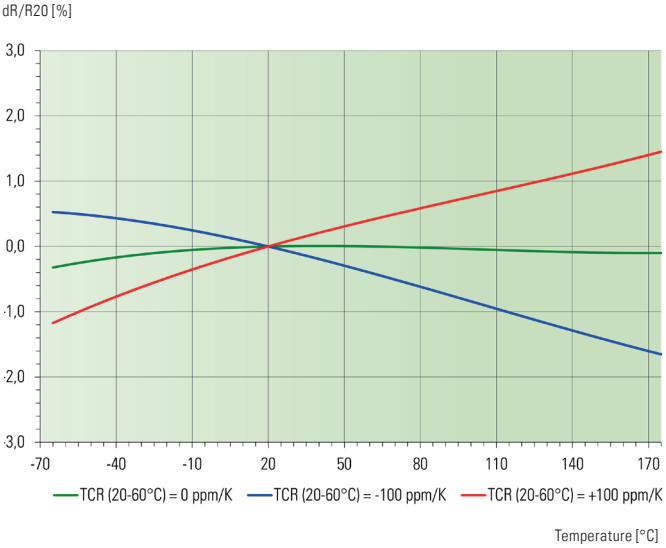
Specification		DIN EN 60286-3
Tape width	**mm**	12
Parts per reel	**pcs**	12500

Note: parts are not marked

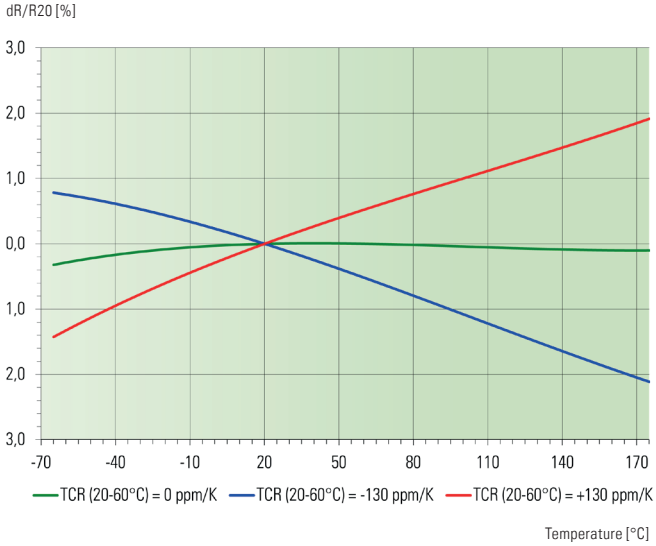
Power derating curve



Temperature dependence of the electrical resistance of ZERANIN® for WAK-Z-R001



Temperature dependence of the electrical resistance of ZERANIN® for WAK-Z-R0005



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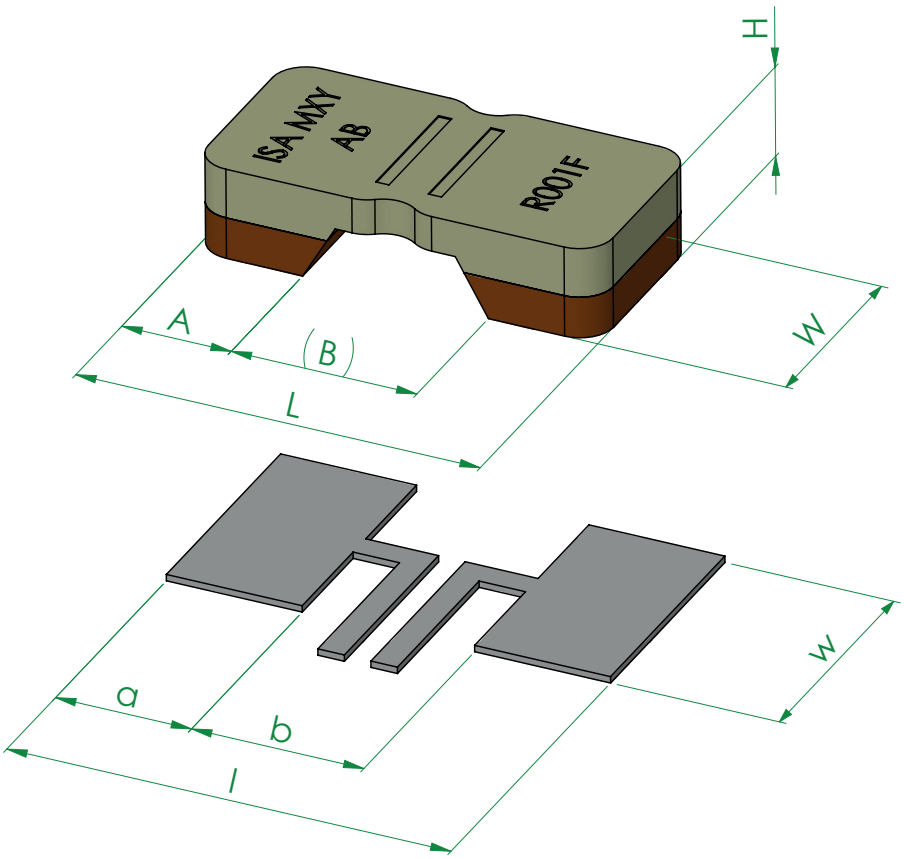
Mechanical dimensions and pcb-layout proposal (Reflow-soldering) [mm] // Z-YM-358d



type:	L	W	H	A	B
WAK-Z-R0005-1.0	3.05 ±0.2	1.52 ±0.2	0.833 +0.2/-0.1	0.97 ±0.2	1.10 ±0.2
WAK-Z-R001-1.0	3.05 ±0.2	1.52 ±0.2	0.7 +0.2/-0.1	0.86 ±0.2	1.40 ±0.2

solder pad type:	l	w	a	b
WAK	3.35	1.82	1.025	1.3

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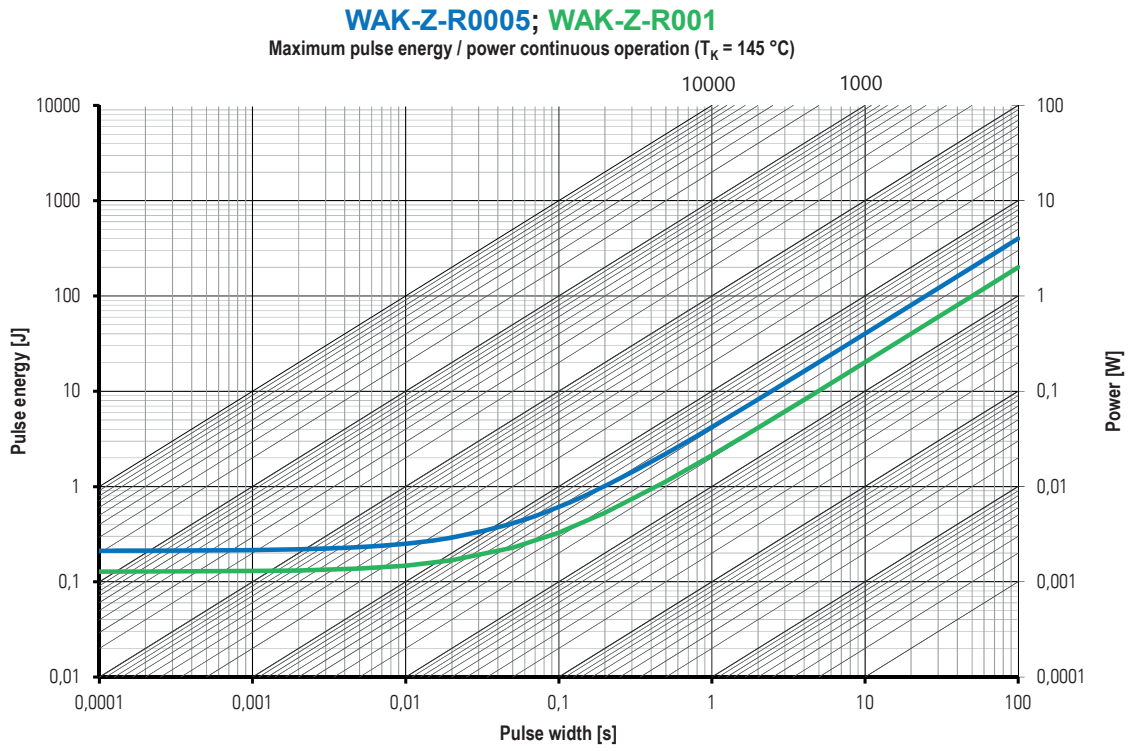
Maximum pulse energy respectively pulse power for permanent operation



Specification

Parameters	Test conditions	Specified values
Temperature Cycling	2000 cycles (-65 °C to +170 °C)	±1.0 %
Low Temperature Storage and Operation	-65 °C for 250 h	±0.1 %
Resistance to Soldering Heat	260 °C for 10 sec / 8h steam aging	n.a.
Moisture Resistance	MIL-STD-202 method 106	±0.2 %
Mechanical Shock	100 g, 6 ms half sine	±0.2 %
Vibration, High Frequency	10 g, 10-2000 Hz	±0.2 %
Operational Life	2000 h, T_K max at rated power	±1.0 %, T_K = 150 °C (in covered condition)
High Temperature Exposure	2000 h / 175 °C	±1.0 % (in covered condition)
Bias Humidity	+85 °C, 85 r.F., 1000 h	±0.5 %