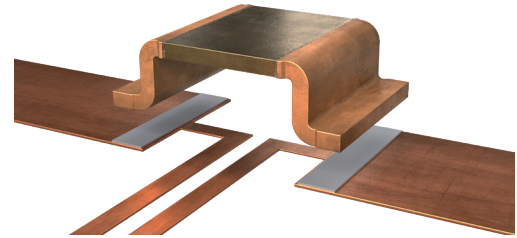


BVZ (4026)

ISA-WELD® PRECISION RESISTOR



FEATURES

- Constant current up to 160 A (0.525 mOhm)
- Power rating up to 13 W
- Excellent long-term stability
- Ideal suited for mounting on DBC / IMS substrate
- Max. solder temperature up to 350 °C / 30 sec
- AEC-Q200 qualified



APPLICATIONS

- Power modules
- High current applications for the automotive market
- Frequency converters

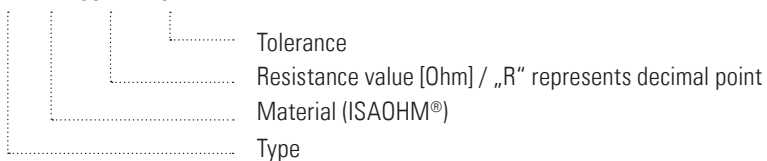
Technical data¹

Resistance values	mOhm	0.525 / 0.77 / 1 / 1.5 / 2.4 / 3
Tolerance	%	1 / 2 / 5
Temperature coefficient (20-60 °C)	ppm/K	from 0 ± 60
Applicable temperature range	°C	-65 to +170
Power rating P_{100°C}	W	up to 8
Power rating P_{70°C}	W	up to 13
Internal heat resistance (R_{thi})	K/W	from 5
Inductance	nH	<3
Stability (at rated power) deviation after 2000 h	%	<0.5 ($T_{max} = 140 °C$) <1.0 ($T_{max} = 170 °C$)

¹For detailed information see table on page 3

Ordering code

BVZ - I - R0024 - 1.0



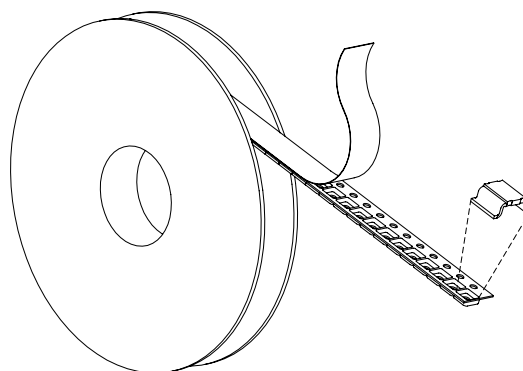
Recommended solder profile

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	24	
Reel size	inch	13	
Parts per reel	pcs	1400	
Packaging weight	g	576	

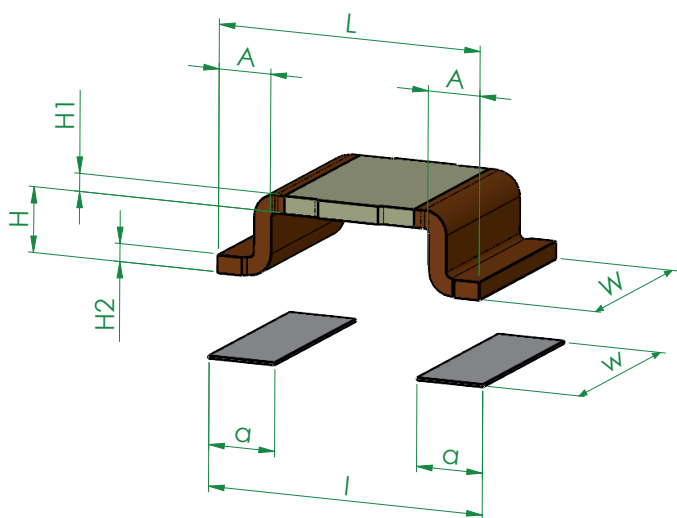


Alternative solder profile

H2 soldering under vacuum

Temperature	°C	350
Time	min	20

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



	L	W	A	H	H1	H2
BVZ-Z-R000525	10.1 ± 0.2	6.9 _{0/-0.1}	2 ± 0.1	2.4 ± 0.1	0.42 ± 0.1	0.42 ± 0.05
BVZ-M-R00077					1.1 ± 0.1	0.66 ± 0.05
BVZ-I-R001					0.66 ± 0.1	
BVZ-I-R0015					0.35 ± 0.1	0.4 ± 0.05
BVZ-I-R0024						
BVZ-I-R003						
BVZ-I-R004						

solder pad	l	w	a
BVZ	10.6	7.3	2.55

Electrical specification

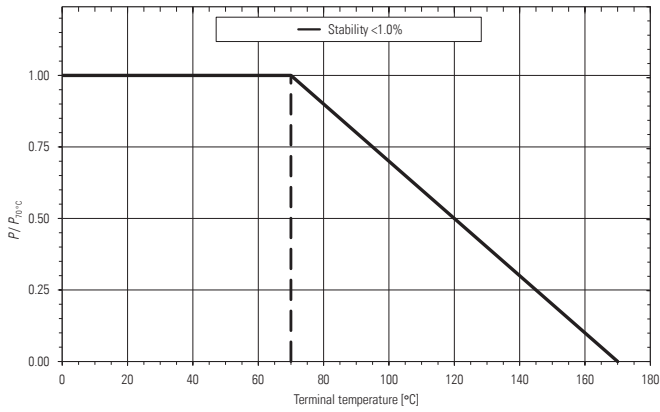
Type	Material	Value [mΩ]	R_{thi} [K/W]	TCR [ppm/K]	$P_{70°C}^*$ [W]	$P_{>100°C}^*$ [W]
BVZ-Z-R000525	ZERANIN®	0.525	5	270 ± 50	13	8
BVZ-M-R00077	MANGANIN®	0.77	8	180 ± 50	10	7.5
BVZ-I-R001	ISAOHM®	1.0	8	100 ± 50	7	5
BVZ-I-R0015	ISAOHM®	1.5	12	60 ± 50	6	4
BVZ-I-R0024	ISAOHM®	2.4	20	10 ± 50	5	3
BVZ-I-R003	ISAOHM®	3.0	21	10 ± 50	5	3

* Recommended max. power (limited by thermal conditions of the assembly)

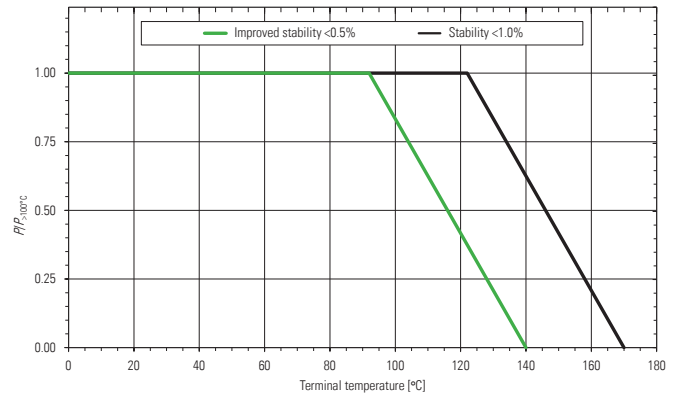
Note: For calculation of the maximum derating terminal temperature (T_k) the following formula can be used: $T_k = T_{max} - (R_{thi} \times P)$.

Example for BVZ-I-R001: $T_k = 170°C - (8 K/W \times 5 W) = 130°C$.

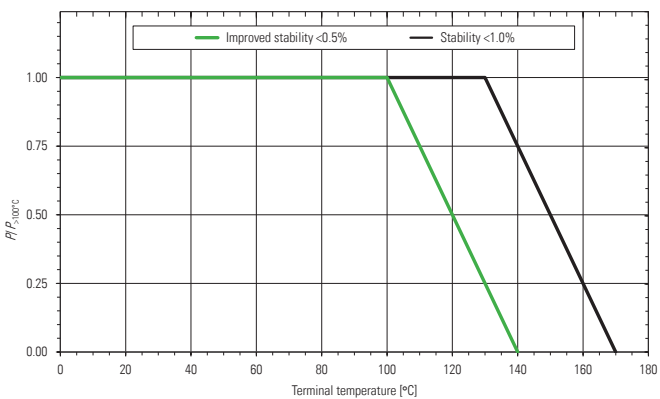
Power derating curve at 70°C. (see table on page 2)



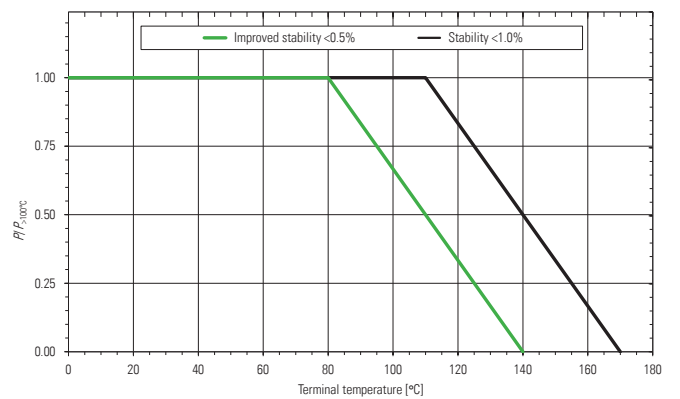
Power derating curve BVZ-I-R0015



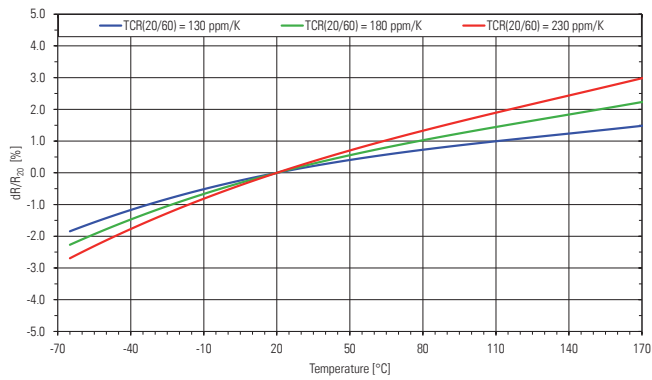
Power derating curve BVZ-Z-R000525 // -I-R001



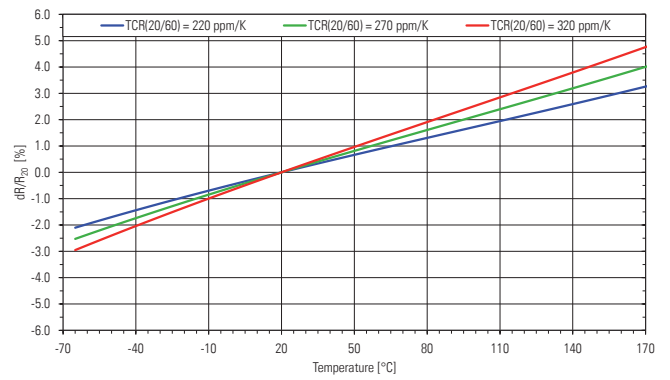
Power derating curve BVZ-M-R00077 // I-R0024 // I-R003



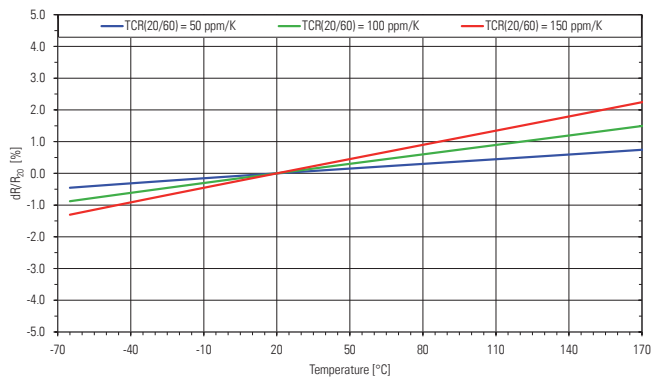
Temperature dependence of the electrical resistance of MANGANIN® resistors



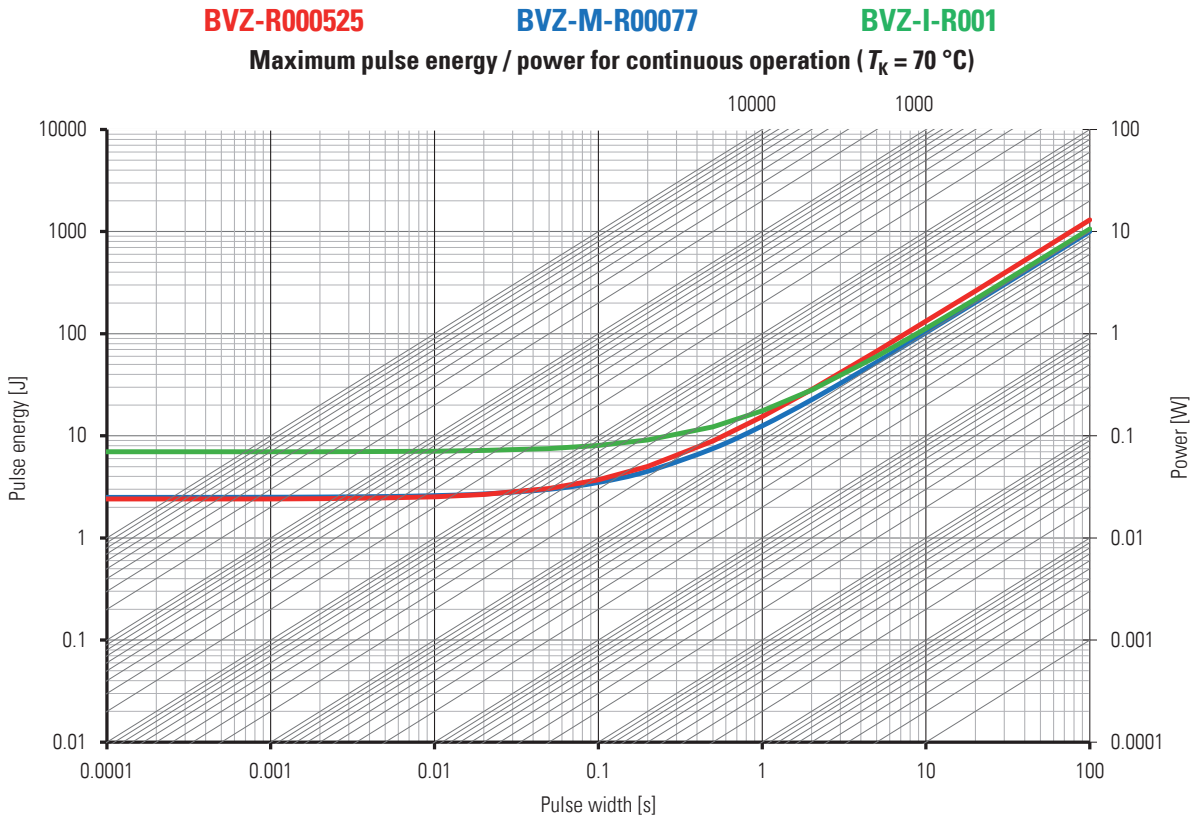
Temperature dependence of the electrical resistance of ZERANIN® resistors



Temperature dependence of the electrical resistance of ISAOHM® resistors. Example: BVZ-I-R001



Maximum pulse energy respectively pulse power for permanent operation



Test 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 %
Mechanical Shock	100 g, 6 ms half sine	±0.2 %
Vibration, High Frequency	10 g, 10-2000 Hz, 24 h each axis	±0.2 %
Operational Life	2000 h, max. T_K at rated power	±1.0 %
High Temperature Exposure	2000 h / 170 °C (in covered condition)*	±1.0 %
Bias Humidity	+85 °C, 85 r.F., 1000 h	±0.5 %

* for MANGANIN® and ZERANIN®30

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