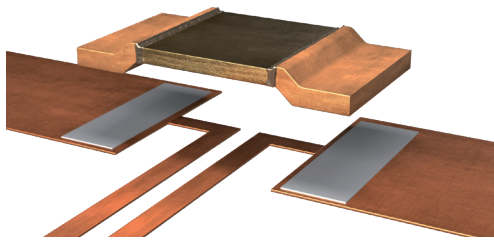




## ISA-WELD® // PRECISION RESISTORS



### BVT (2512)



#### Features

- Power rating up to 6 W <sup>1</sup>
- Continuous current load up to 100 A (0.3 mOhm)
- Heavy copper connectors
- Excellent long-term stability
- High application temperature range -65 to +170 °C due to special design
- RoHS 2011/65/EU compliant
- AEC-Q200 qualification



#### Applications

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

#### Technical data <sup>1</sup>

Resistance values	<b>mOhm</b>	<b>0.3 to 6.8</b>
Tolerance	<b>%</b>	1 / 5
Temperature coefficient (20-60 °C)	<b>ppm/K</b>	from 50
Applicable temperature range	<b>°C</b>	-65 to +170
Power rating <b>P<sub>100°C</sub></b>	<b>W</b>	up to 3
Power rating <b>P<sub>70°C</sub></b>	<b>W</b>	up to 6
Internal heat resistance (R <sub>thi</sub> )	<b>K/W</b>	from 4
Inductance	<b>nH</b>	<2
Stability (at rated power) deviation after 2000h, T <sub>k</sub> = Terminal temperature		<0.5% (T <sub>k</sub> =110 °C) <1.0% (T <sub>k</sub> =140 °C)

<sup>1</sup> For detailed information see table on page 4

#### Ordering code

BVT - Z - R0003 - 1.0

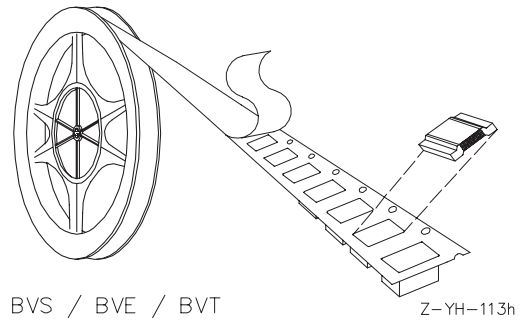
.....	Tolerance
.....	Resistance value [Ohm] / „R“ represents decimal point
.....	Material (ZERANIN®30)
.....	Type



## BVT (2512)

### Tape and reel information

Specification	DIN EN 60286-3	
Tape width	<b>mm</b>	12
Reel size	<b>inch</b>	13
Parts per reel	<b>pcs</b>	5000
Packaging weight	<b>g</b>	453

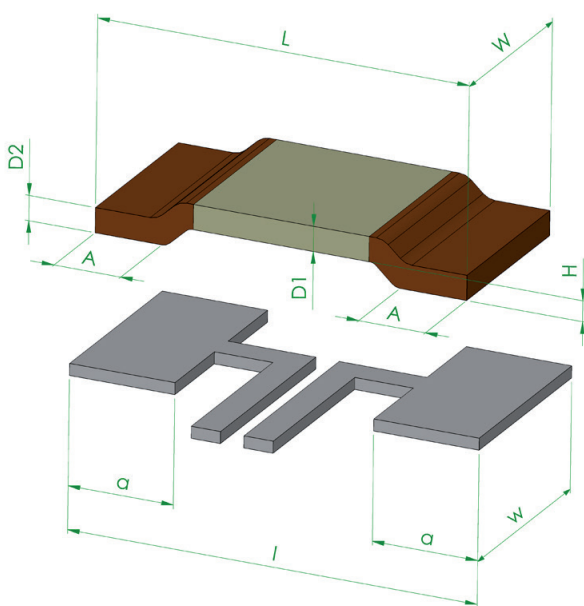


### Specification

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	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, 24 h each axis	±0.2%
Operational Life	2000 h, T <sub>k</sub> max at rated power	±1.0%, T <sub>k</sub> = 140 °C
High Temperature Exposure	2000 h / 170 °C	±1.0% (in covered condition)*
Bias Humidity	+85 °C, 85 r.F., 1000 h	±0.5%

\* for MANGANIN® and ZERANIN®30

### Mechanical dimensions and pcb-layout proposal (Reflow-soldering) [mm] // Drawing no. Z-YE-968a



Type	L	W	H	A
BVT	6.35 ±0.15	3.05 ±0.2	0.35 ±0.03	1.14 -0.4

Solder pad type	l	w	a
BVT	7.0	3.4	1.8

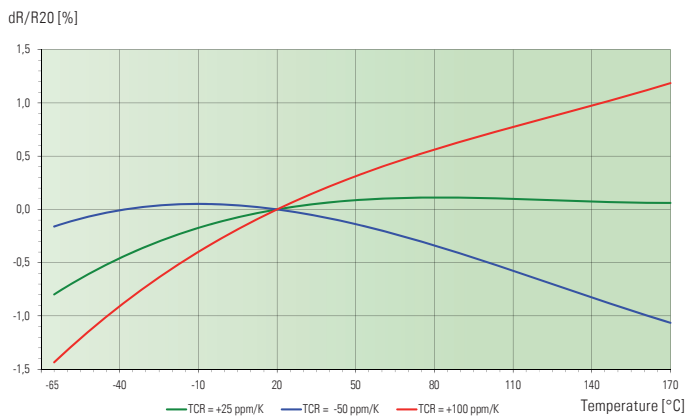
### Recommended surface mount soldering methods

Reflow-, IR- and vacuum soldering

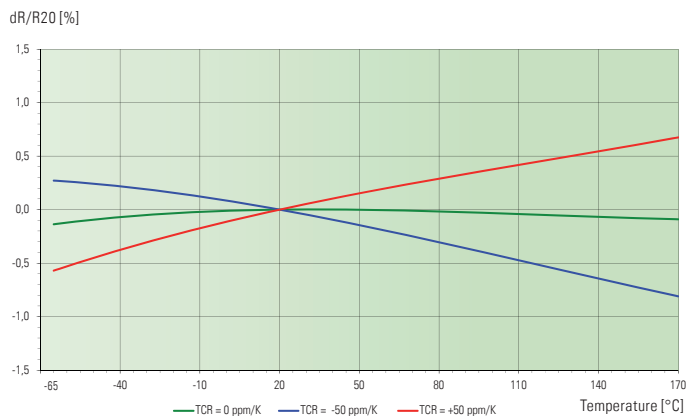


## BVT (2512)

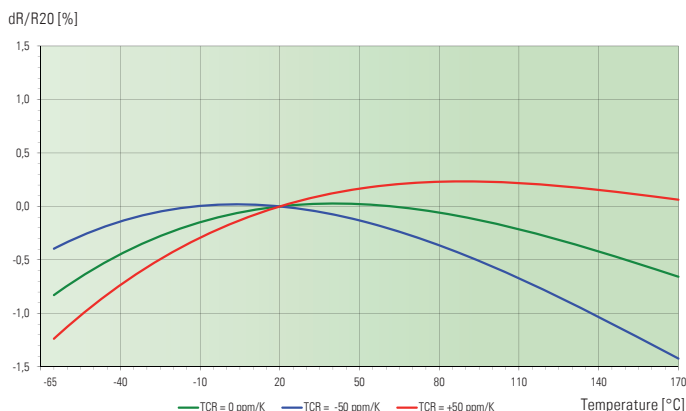
### Temperature dependence of the electrical resistance of MANGANIN® resistors. Example: BVT-M-R001



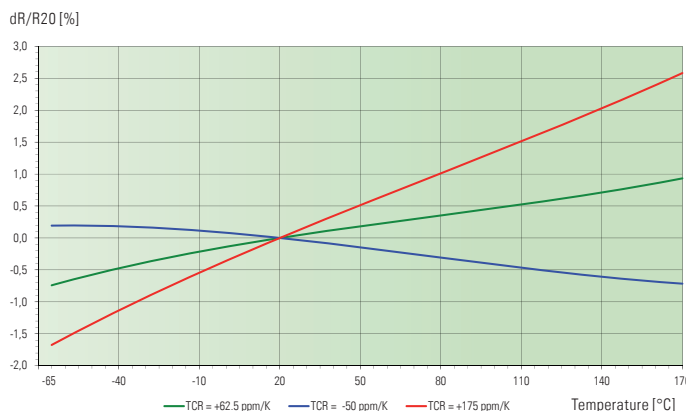
### Temperature dependence of the electrical resistance of ISAOHM® resistors



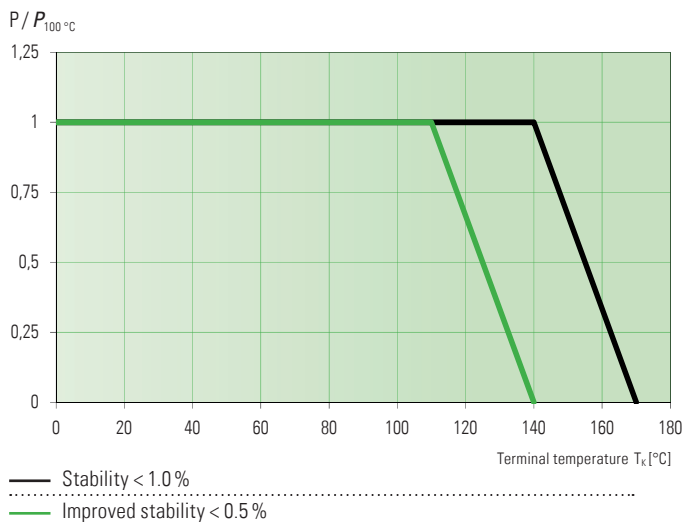
### Temperature dependence of the electrical resistance of NOVENTIN® resistors



### Temperature dependence of the electrical resistance of ZERANIN® 30 resistors

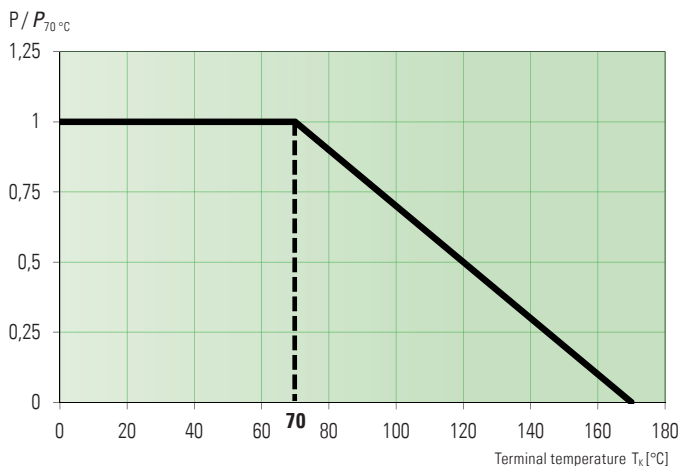


### Power derating curve at 100 °C Example: BVT-M-R0005



### Power derating curve at 70 °C

For detailed information see table on page 4



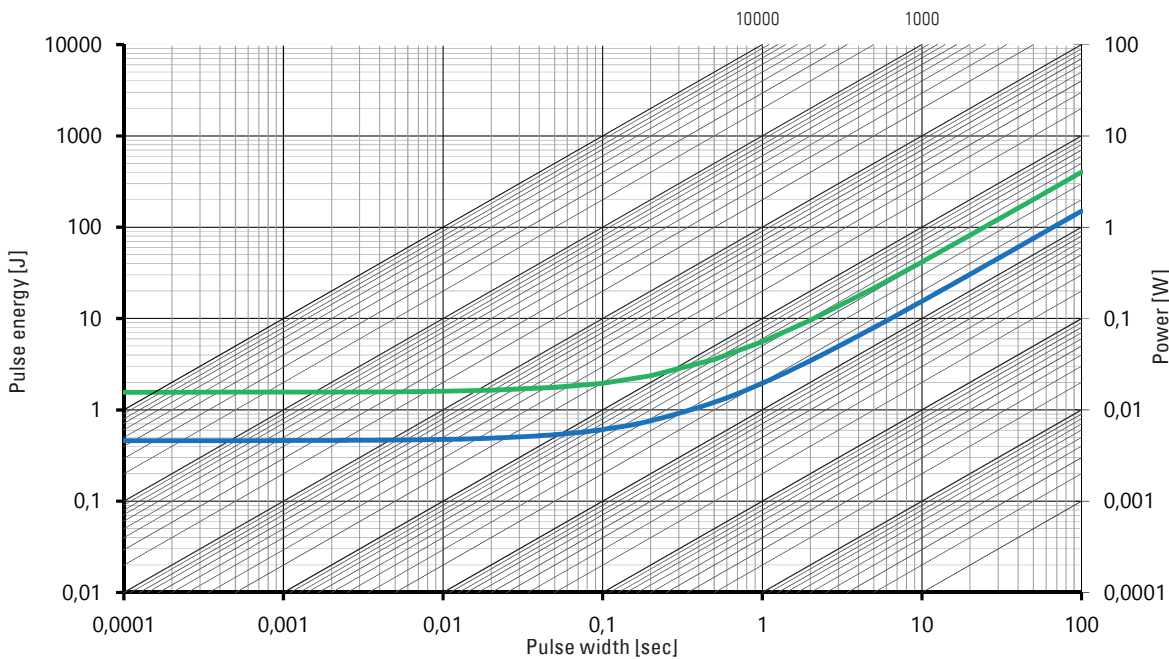


**BVT (2512)**

Type	Value [mΩ]	Thickness [mm]		R <sub>thi</sub> [K/W]	TC [ppm/K]	P <sub>100 °C</sub> [W]	P <sub>70 °C</sub> [W]
		D1	D2				
BVT-K-R000	0	0.42	0.42			I <sub>max</sub> = 100 A	
BVT-Z-R0003	0.3	1.00	1.00	4	<175	4	6
BVT-M-R0005	0.5	0.85	0.84	7	<115	4	6
BVT-M-R001	1.0	0.42	0.42	14	<100	4	6
BVT-M-R00136	1.36	0.31	0.42	16	<80	3.8	5.5
BVT-V-R002	2.0	0.46	0.64	20	<50	3.5	5
BVT-I-R002	2.0	0.72	0.64	16	<50	4	6
BVT-I-R003	3.0	0.48	0.42	24	<50	3	4
BVT-I-R004	4.0	0.36	0.42	32	<50	2	3
BVT-I-R005	5.0	0.36	0.42	40	<50	1.5	2.5
BVT-I-R0068	6.8	0.36	0.42	60	<50	1.5	2

Material type I=ISAOHM®, K=SF-copper tinned, M=MANGANIN®, Z=ZERANIN®30, V=NOVENTIN®

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



- This curve is valid for the resistance value BVT-Z-R0003 only.
- This curve is valid for the resistance value R0068 only.

**Disclaimer** // All products, product specifications and data are subject to change without notice. The product specifications do not expand or otherwise modify Isabellenhütte's terms and conditions of sale, including but not limited to, the warranty expressed therein. Isabellenhütte makes no warranty, representation or guarantee other than as set forth in its terms and conditions of sale. Information provided in datasheets and/or specifications may vary from actual results in different applications. Any statements made by Isabellenhütte regarding the suitability of products for certain types of applications are based on its knowledge of typical requirements that are often placed on its products. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in the application intended. No license, express or implied, or otherwise, to any intellectual property rights is granted by this document. Any and all liability arising out of the application or use of any product shall be as set forth in Isabellenhütte's terms and conditions of sale.

