

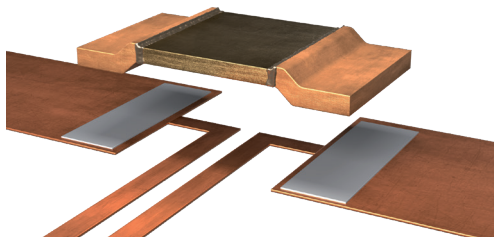


ISA-WELD® // PRECISION RESISTORS



BVS

Size 3920



Features

- Power rating up to 12 W¹
- Continuous current load up to 160 A (0.2 mOhm)
- Heavy copper connectors
- Excellent long-term stability
- Max. solder temperature up to 350 °C / 30 sec
- AEC-Q200 qualified
- RoHS 2011/65/EU compliant



Applications

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

Technical data ¹

Resistance values	mOhm	0.2 to 5
Tolerance	%	1 / 5
Temperature coefficient (20-60 °C)	ppm/K	from 50
Applicable temperature range	°C	-65 to +170
Power rating P_{100 °C}	W	up to 5
Power rating P_{70 °C}	W	up to 12
Internal heat resistance (R _{thi})	K/W	from 3
Inductance	nH	<3
Stability (at rated power) deviation after 2000h, T _K = Terminal temperature		<0.5 % (T _K =100 °C) <1.0 % (T _K =130 °C)

¹ For detailed information see table on page 3

Ordering code

BVS - M - R0005 - 1.0

.....	Tolerance
.....	Resistance value [Ohm] / „R” represents decimal point
.....	Material (MANGANIN®)
.....	Type



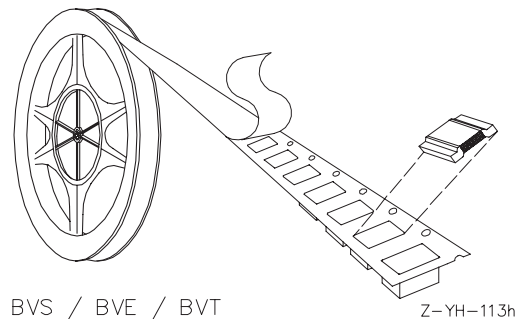
BVS // 3920

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	16		
Reel size	inch	13		
Parts per reel	pcs	3000		
Packaging weight	g	474		



BVS / BVE / BVT

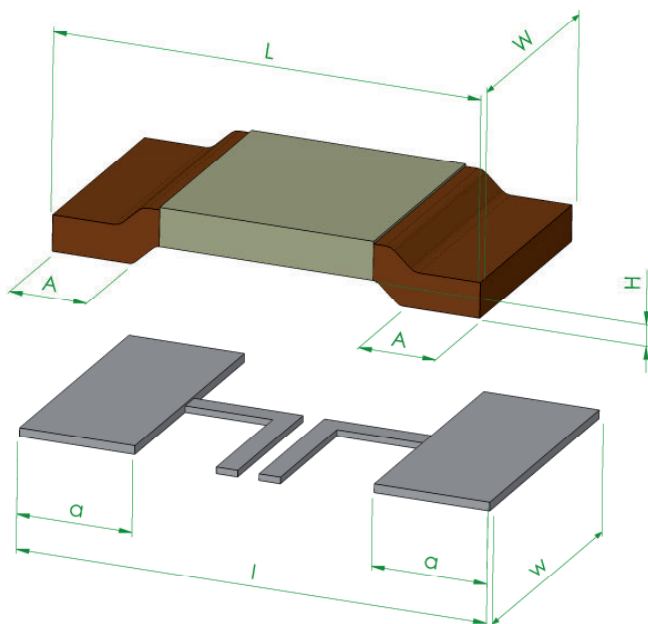
Z-YH-113h

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	±0.1 %
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, T _k max at rated power	±1.0 %, T _k = 130 °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]



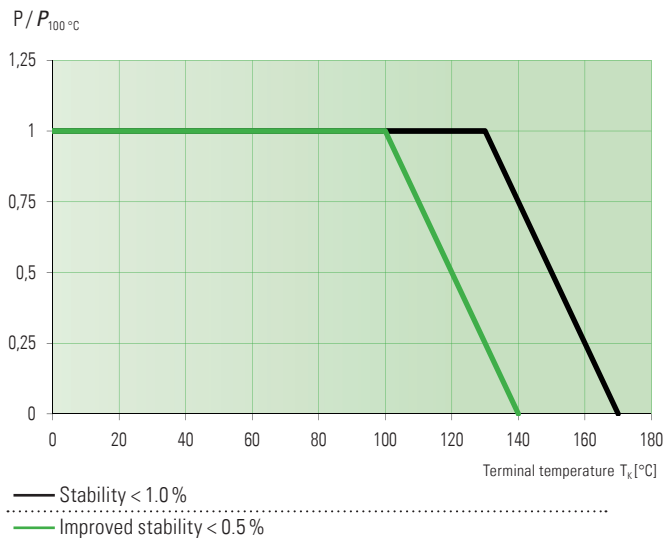
Type	L	W	H	A
BVS	10.0 +0.3	5.2 +0.3/-0.2	0.5 ±0.1	2.0 -0.5

Solder pad type	l	w	a
BVS	11.0	6.2	2.7

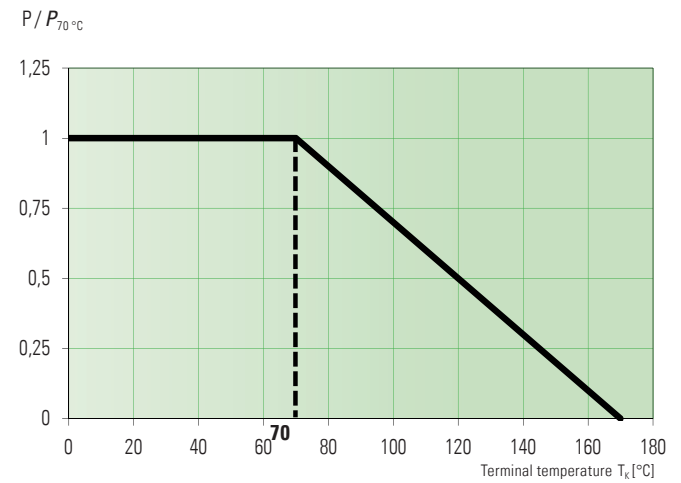


BVS // 3920

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



Power derating curve at 70 °C
Example: BVS-M-R001



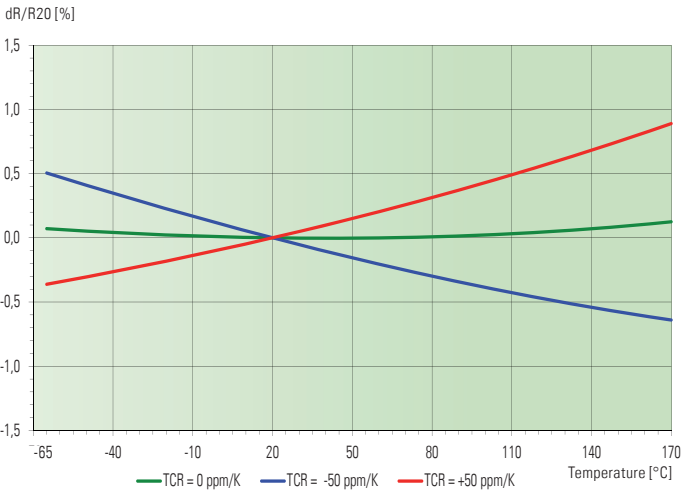
Type	Value [mΩ]	R _{thi} [K/W]	TCR [ppm/K]	P _{100 °C} [W]	P _{70 °C} [W]	Note
BVS-Z-R0002	0.2	3	200	5	12	
BVS-M-R0003	0.3	4.5	150	5	10	
BVS-M-R0005	0.5	8	70	5	9	
BVS-M-R0007	0.7	11	60	5	8	
BVS-M-R001	1	15	<50	4	7	
BVS-A-R001	1	9	<50	5	8	
BVS-A-R0015	1.5	12	<50	4.5	7	
BVS-A-R002	2	16	<50	4	6	Aluchrom material has ferromagnetic properties and should not be used in AC-applications
BVS-A-R0028	2.8	21	<50	3	5	
BVS-A-R003	3	22	<50	3	5	
BVS-A-R004	4	30	<50	2.5	4	
BVS-I-R002	2	16	<50	4	6	
BVS-I-R003	3	24	<50	3	5	
BVS-I-R004	4	32	<50	2.5	4	
BVS-I-R005	5	50	<50	2	3	
BVS-V-R002	2	20	<50	3.5	5	
BVS-K-R000	<0.2 mΩ		I _{max} = 160 A			

Abbreviation type:
 A=Aluchrom
 I=ISAOHM®
 K=SF-copper tinned
 M=MANGANIN®
 V=NOVENTIN®
 Z=ZERANIN®30

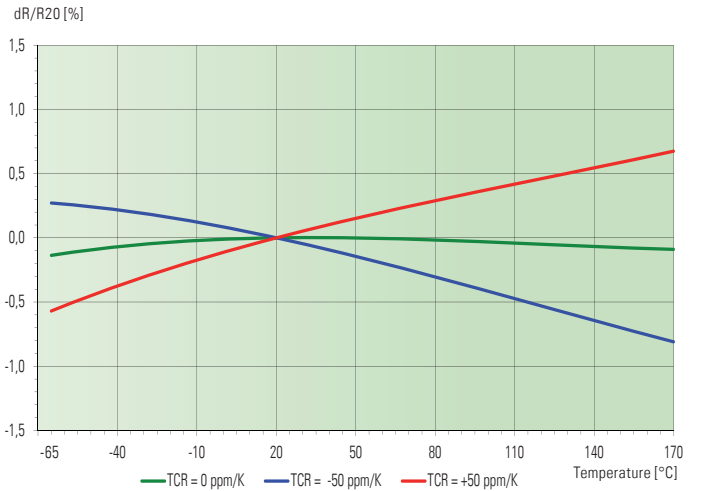


BVS // 3920

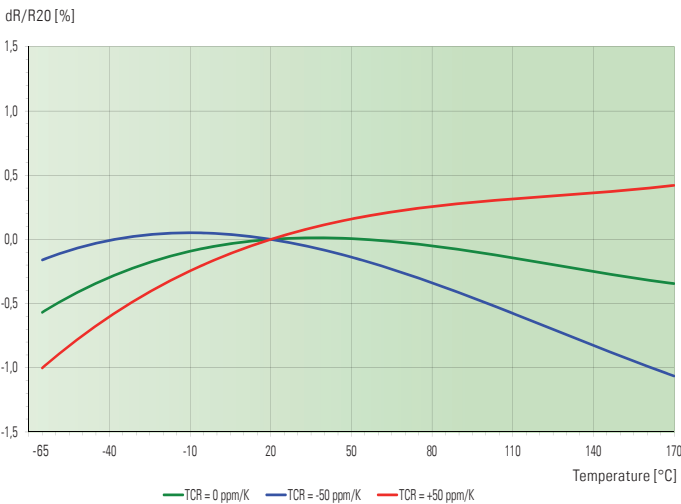
Temperature dependence of the electrical resistance of Aluchrom resistors



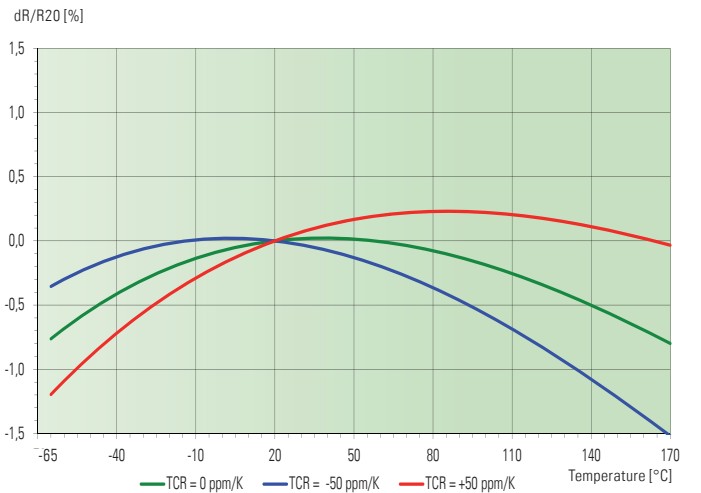
Temperature dependence of the electrical resistance of ISAOHM® resistors



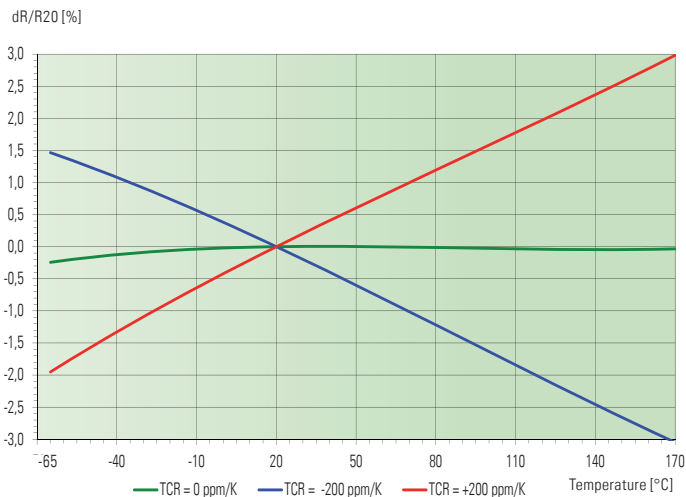
Temperature dependence of the electrical resistance of MANGANIN® resistors



Temperature dependence of the electrical resistance of NOVENTIN® resistors

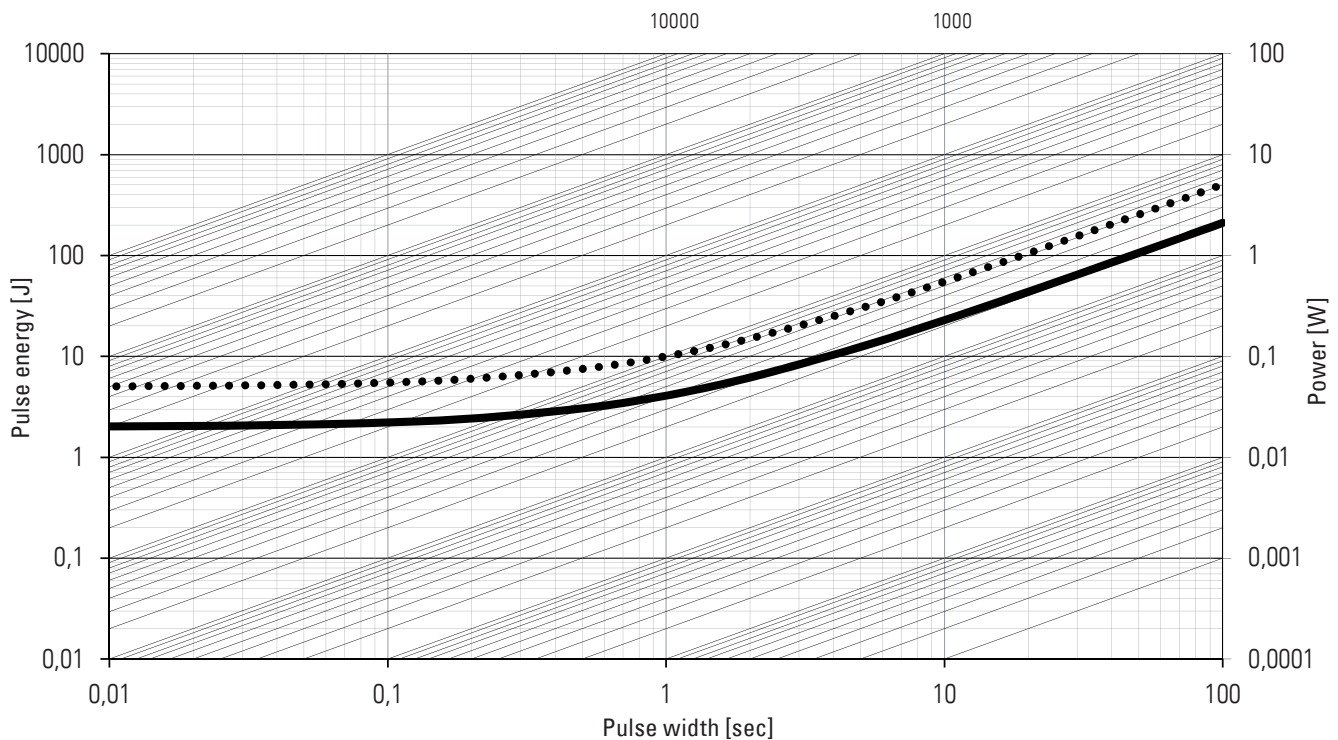


Temperature dependence of the electrical resistance of ZERANIN® resistors





Maximum pulse energy respectively pulse power for permanent operation



- • • This curve is valid for the resistance value R0002 only.
- This curve is valid for the resistance value R005 only. For other values the area inbetween the max. and min curve is valid.

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.

