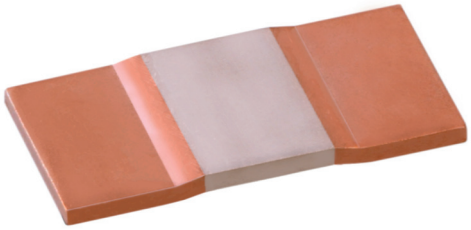
ISABELLENHÜTTE
Innovation by Tradition

ISA-WELD® // PRECISION RESISTORS

BVE
Size 5930



Features

- Power rating up to 15 W
- Continuous current load up to 220 A (0.2 mOhm)
- Heavy copper connectors
- Excellent long-term stability
- Ideal suited for mounting on DBC / IMS substrate
- Max. solder temperature up to 350 °C / 30 sec
- AEC-Q200 qualified
- RoHS 2011/65/EU compliant

RoHS

Applications

- Current sensor for power hybrid applications
- For welding on bus bars
- High current applications for the automotive market
- Frequency converters
- Power modules

Technical data [1]

Resistance values	**mOhm**	0.1 to 2
Tolerance	**%**	1 / 5
Temperature coefficient (20-60 °C)	**ppm/K**	from 50
Applicable temperature range	**°C**	-55 to +170
Power rating $P_{100°C}$	**W**	up to 10
Power rating $P_{70°C}$	**W**	up to 15
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=90 °C) <1.0% (T_K=120 °C)

[1] For detailed information see table on page 3

Ordering code

BVE - M - R0005 - 1.0

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

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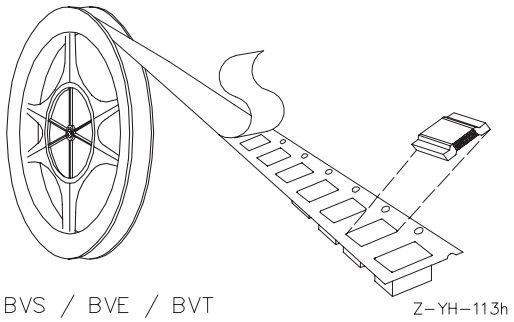
Recommended solder profile

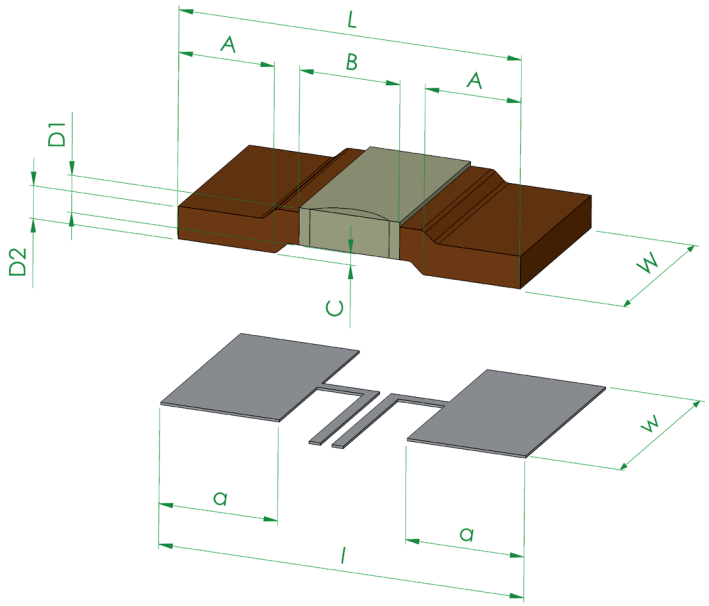
Reflow-, IR- and wave-soldering				
Temperature	**°C**	260	255	217
Time	**sec**	peak	40	90

Tape and reel information

Specification		DIN EN 60286-3
Tape width	**mm**	24
Reel size	**inch**	13
Parts per reel	**pcs**	2000
Packaging weight	**g**	563



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



Z-YE-583

type:	value / mOhm	L	W	A	B	C	D1	D2
BVE-Z-R0001	0.1	15 ±0.2	7.75 +0.3/-0.2	4.95 +0.1/-0.7	3.7 +0.2/-0.3	0.5 ±0.1	1.42 ±0.1	1.42 ±0.1
BVE-M-R0002	0.2	15 ±0.2	7.75 +0.3/-0.2	4.2 +0.1/-0.7	5 +0.2/-0.3	0.5 ±0.1	1.42 ±0.1	1.42 ±0.1
BVE-M-R0003	0.3	15 ±0.2	7.75 +0.3/-0.2	4.2 +0.1/-0.7	5 +0.2/-0.3	0.5 ±0.1	0.94 ±0.1	0.4 ±0.1
BVE-M-R0005	0.5	15 ±0.2	7.75 +0.3/-0.2	4.2 +0.1/-0.7	5 +0.2/-0.3	0.5 ±0.1	0.56 ±0.1	0.56 ±0.1
BVE-A-R0005	0.5	15 ±0.2	7.75 +0.3/-0.2	4.2 +0.1/-0.7	4.4 +0.2/-0.3	0.5 ±0.1	1.62 ±0.1	1.42 ±0.1
BVE-A-R001	1	15 ±0.2	7.75 +0.3/-0.2	4.2 +0.1/-0.7	4.9 +0.2/-0.3	0.5 ±0.1	0.91 ±0.1	0.84 ±0.1
BVE-A-R002	2	15 ±0.2	7.75 +0.3/-0.2	4.2 +0.1/-0.7	4.9 +0.2/-0.3	0.5 ±0.1	0.44 ±0.05	0.64 ±0.1

solder pad type:	l	w	a
BVE	**16**	8.75	5.2

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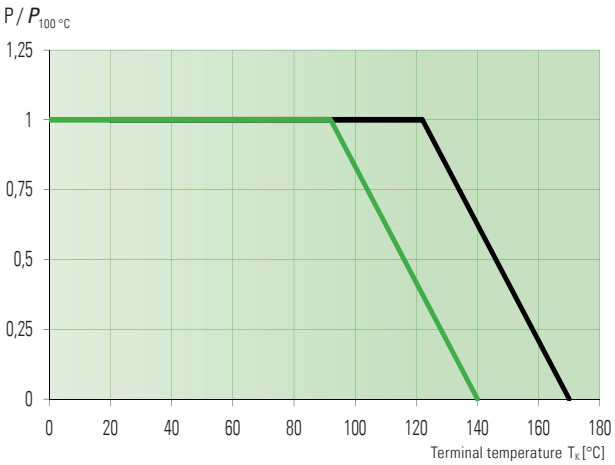
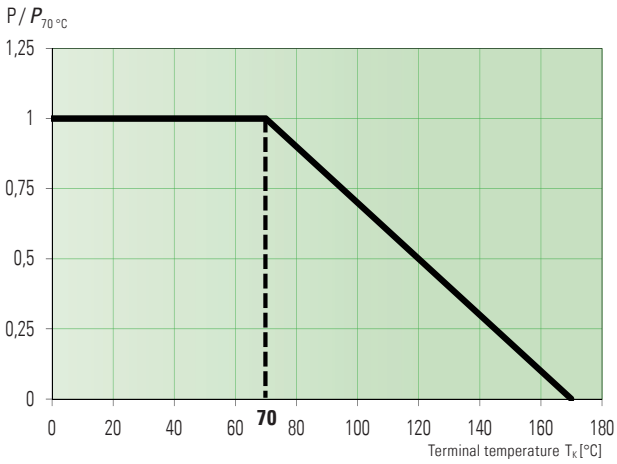
Power derating curve at 100 °C
Example: BVE-M-R0005



Stability <1.0%
Improved stability <0.5%

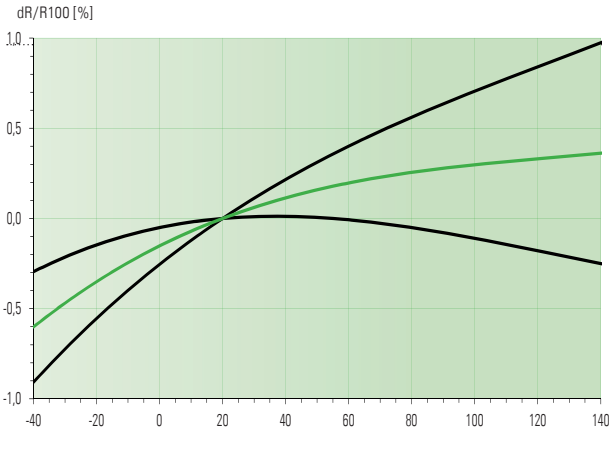
Power derating curve at 70 °C
Example: BVE-A-R002



Type	Value [mΩ]	R_{thi} [K/W]	TC [ppm/K]	$P_{100\,°C}$ [W]	$P_{70\,°C}$ [W]
BVE-Z-R0001	0.1	2.0	<200	10	15
BVE-M-R0002	0.2	3.0	<100	10	15
BVE-M-R0003	0.3	4.5	<100	7	10
BVE-M-R0005	0.5	8.0	<75	6	8
BVE-A-R0005	0.5	5.0	<75	7	10
BVE-A-R001	1.0	8.0	<50	6	9
BVE-A-R002	2.0	14.5	<50	4	7

Abbrevation type A=Aluchrom, M=MANGANIN®, Z=ZERANIN®30

Temperature dependence of the electrical resistance



Limiting curve
Typical temperature dependence of a BVE resistor

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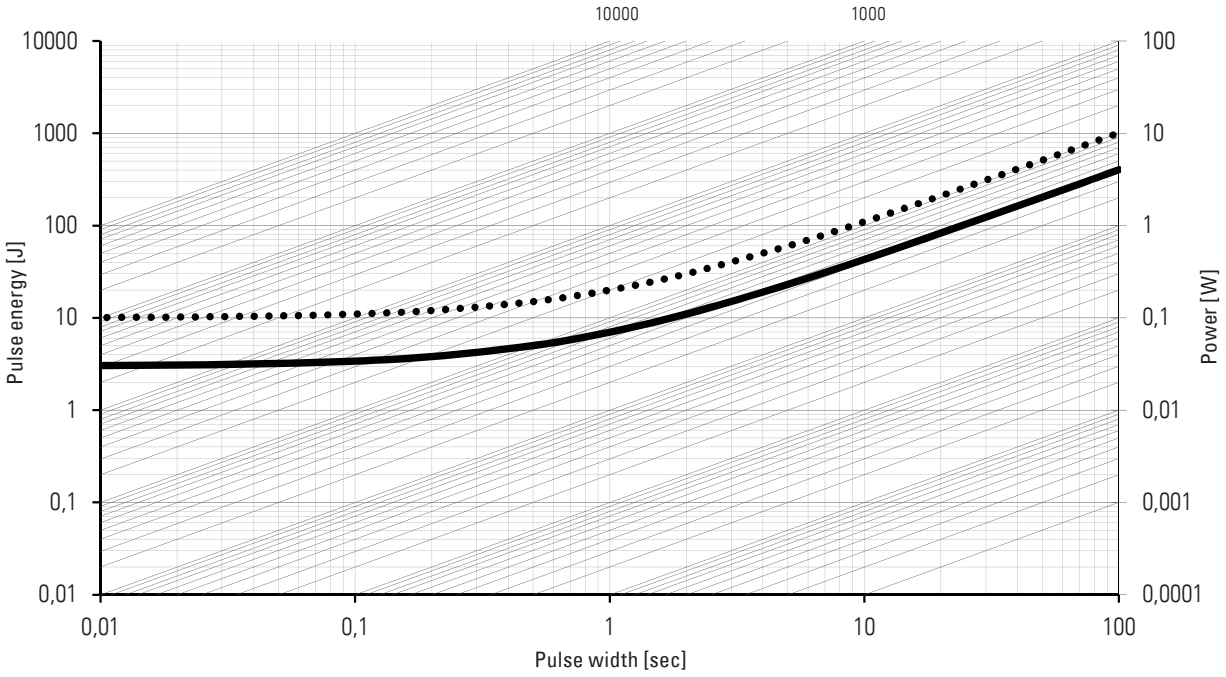
Maximum pulse energy respectively pulse power for permanent operation



• • • This curve is valid for the resistance value R0001 only.
——— This curve is valid for the resistance value R002 only.
For other values the area inbetween the max. and min curve is valid.

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 24 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	20 g, 10-2000 Hz	±0.2%
Operational Life	2000 h, T_K max at rated power	±1.0%, T_K = 120 °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

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