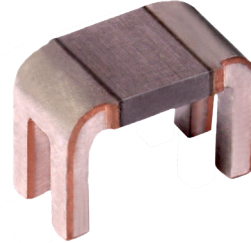




BVH (3820)

ISA-WELD® PRECISION RESISTOR



FEATURES

- 5 W power rating at 135 °C
- Continuous current load up to 150 A (0.5 mOhm)
- Heavy copper connectors
- Excellent long-term stability
- Max. solder temperature up to 350 °C / 30 sec



APPLICATIONS

- High current applications for the automotive market
- USP (uninterrupted power supplies)
- Frequency converters
- Power tools

Technical data¹

Resistance values	mOhm	0.3 / 0.5
Tolerance	%	5
Temperature coefficient (20-60 °C)	ppm/K	200 ± 100
Applicable temperature range	°C	-55 to +170
Power rating P_{100 °C}	W	up to 7
Power rating P_{70 °C}	W	10
Internal heat resistance (R _{thi})	K/W	from 4
Inductance	nH	<3
Stability (at rated power) deviation after 2000h	%	<0.5 (T _{max.} = 140 °C) <1.0 (T _{max.} = 170 °C)

¹ For detailed information see table on page 3

Ordering code

BVH - M - R0005 - 5.0

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

Packaging

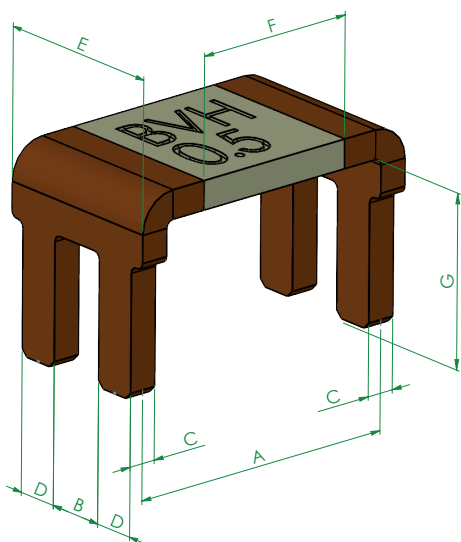
3000 pcs. sealed in plastic bags. Evacuated and refilled with dry nitrogen

Recommended solder profile

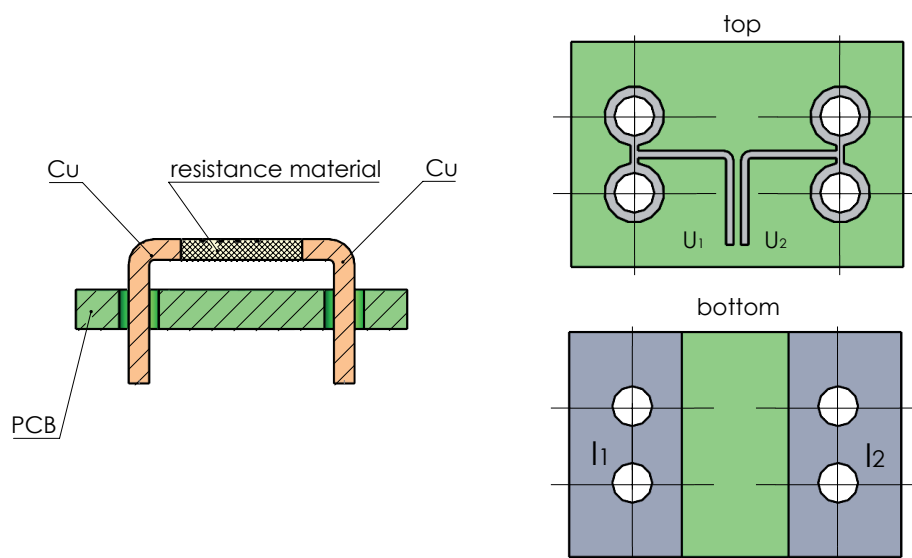
Reflow-, IR- and wave-soldering

Temperature	°C	260	255	217
Time	sec	peak	40	90

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



Type	A	B	C	D	E	F	G
BVH-M-R0003	8.3 ± 0.2	1.8 ± 0.1	1.42 ± 0.1	1.3 ± 0.1	5.3 ± 0.5	4.9 ± 0.3	5 ± 0.2
BVH-M-R0005			0.84 ± 0.1				



Electrical specification

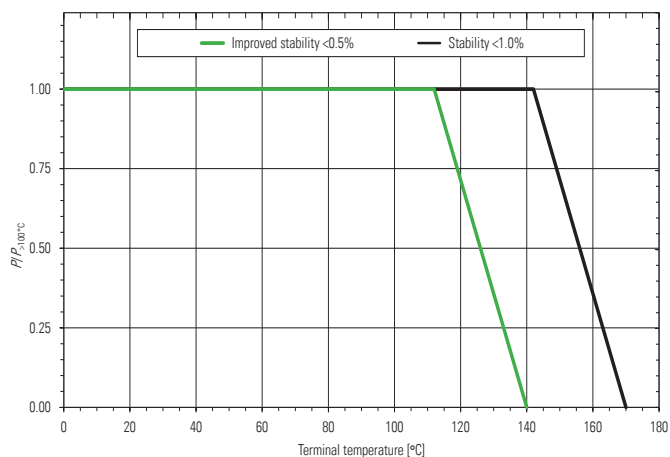
Type	Material	Value [mΩ]	R_{thi} [K/W]	TCR [ppm/K]	$P_{70^{\circ}\text{C}^*}$ [W]	$P_{100^{\circ}\text{C}^*}$ [W]
BVH-M-R0003	MANGANIN®	0.3	4	200 ± 100	10	7
BVH-M-R0005	MANGANIN®	0.5	7	200 ± 100	10	5

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

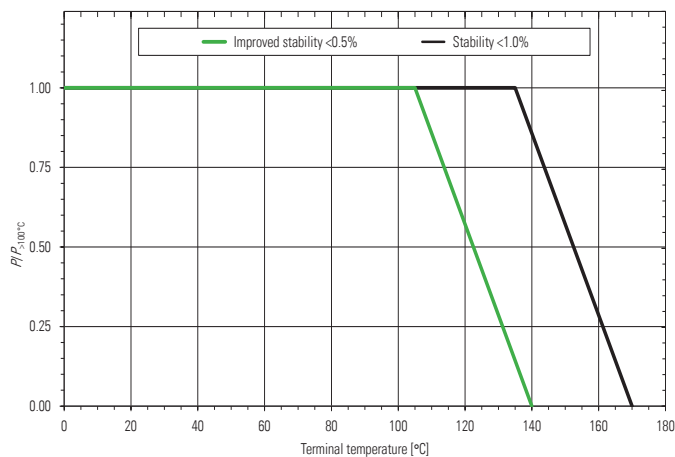
Note: For calculation of the maximum derating terminal temperature (T_K) the following formula can be used: $T_K = T_{max.} - (R_{thi} \times P)$.

Example for BVH-M-R0005: $T_K = 170^{\circ}\text{C} - (7 \text{ K/W} \times 5 \text{ W}) = 135^{\circ}\text{C}$.

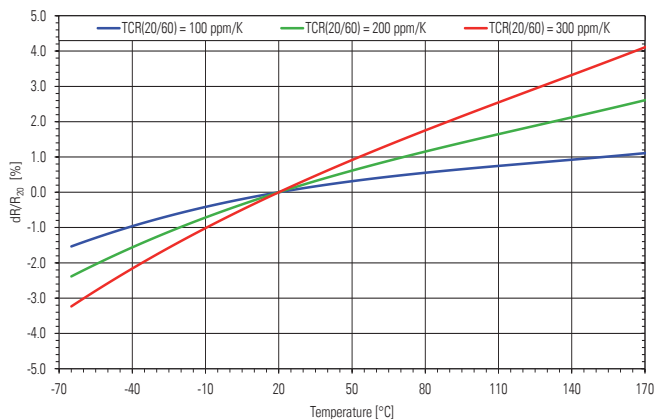
Power derating curve: BVH-M-R0003



Power derating curve: BVH-M-R0005

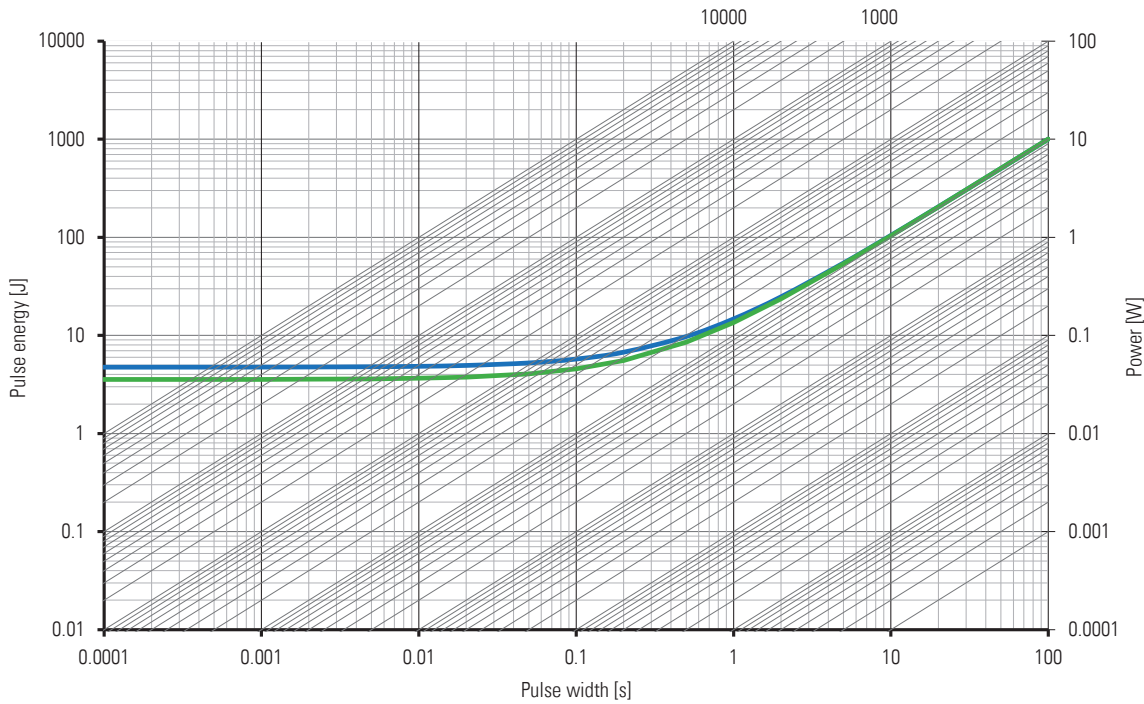


Temperature dependence of the electrical resistance of MANGANIN® resistors



Maximum pulse energy respectively pulse power for permanent operation

BVH-M-R0003 **BVH-M-R0005**
Maximum pulse energy / power for continuous operation ($T_K = 70\text{ °C}$)



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	±0.2%
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%
High Temperature Exposure	2000 h / 170 °C	±1.0%
Bias Humidity	+85 °C, 85 r.F., 1000 h	±0.5%

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