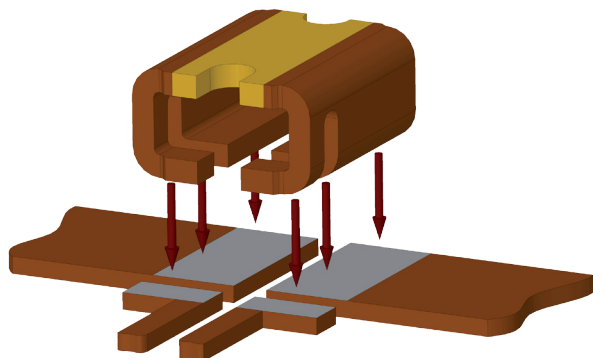




ISA-WELD® // PRECISION RESISTORS

BVN (1216)



Features

- Constant current up to 100 A (0.5 mOhm)
- 5 W power rating up to 130°C
- Four terminal-configuration
- Excellent long-term stability
- Ideal suited for mounting on DBC / IMS substrate
- High application temperature range -55 to +170 °C
- Max. solder temperature up to 350 °C / 30 sec
- RoHS 2011/65/EU compliant
- AEC-Q200 qualified



Applications

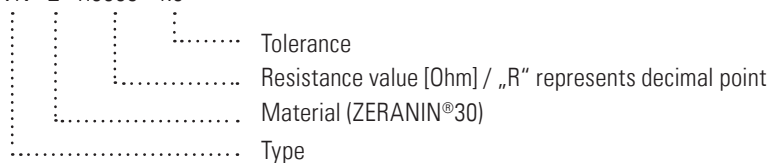
- Current sensor for power hybrid applications
- High current applications for the automotive market
- Frequency converters
- Power modules

Technical data

Resistance values	mOhm	0.5	1
Material		ZERANIN®30	MANGANIN®
Tolerance	%	1 / 5	
Temperature coefficient (20-60 °C)	ppm/K	<50	
Applicable temperature range	°C	-55 to +170	
Power rating P_{100°C}	W	5	3
Internal heat resistance (R _{thi})	K/W	8	15
Inductance	nH	<2	
Stability (at rated power) deviation after 2000h, T _K = Terminal temperature		<0.5% (T _K =100 °C) <1.0% (T _K =130 °C)	

Ordering code

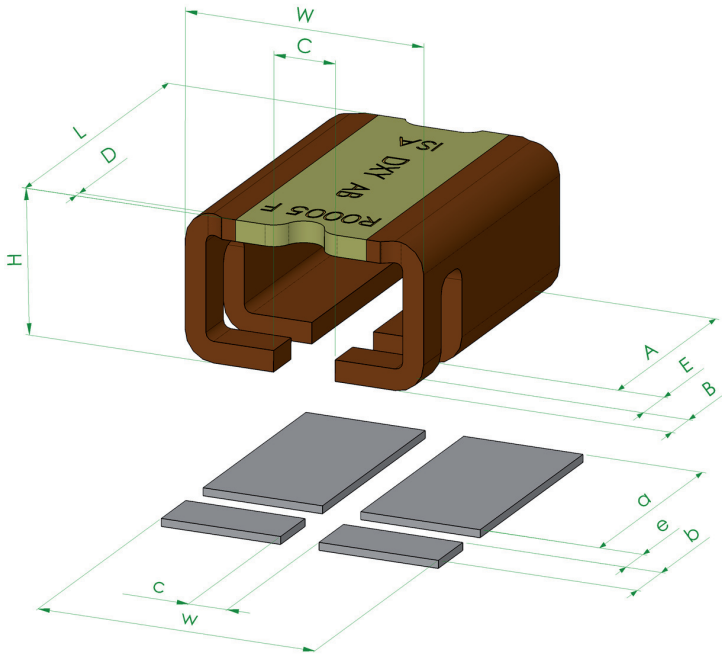
BVN - Z - R0005 - 1.0





BVN (1216)

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



Z-YE-846b

type:	value / mOhm	L	W	H	A	B	C	D	E
BVN-Z-R0005	0.5	4.1 ^{-0.3}	3.1 ^{-0.35}	1.9 ^{-0.35}	2.7 ^{±0.1}	0.5 ^{±0.1}	0.8 ^{+0.3}	0.1	0.6 ^{+0.15}
BVN-M-R001	1	4.1 ^{-0.3}	3.1 ^{-0.35}	1.9 ^{-0.35}	2.7 ^{±0.1}	0.5 ^{±0.1}	0.8 ^{+0.3}	0.1	0.6 ^{+0.15}

solder pad type:	w	a	b	c	e
BVN	3.6	2.95	0.7	0.6	0.5

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	±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



BVN (1216)

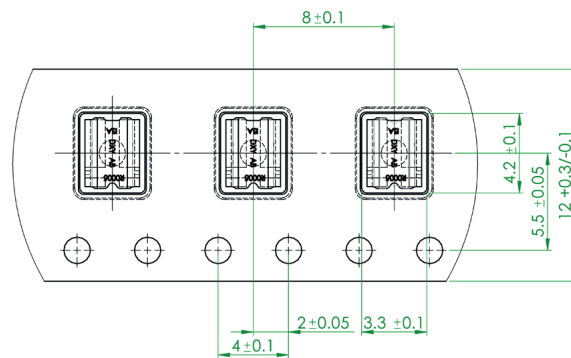
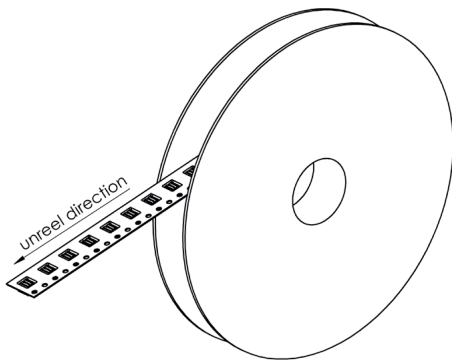
Recommended solder profile

Reflow- and IR-soldering

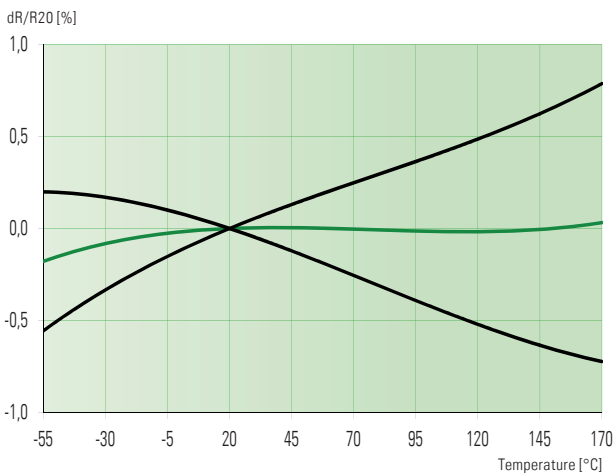
Temperature	°C	260	255	217
Time	sec	peak	40	90

Tape and reel information

Specification	DIN EN 60286-3		
Tape width	mm	12	
Parts per reel	pcs	3000	

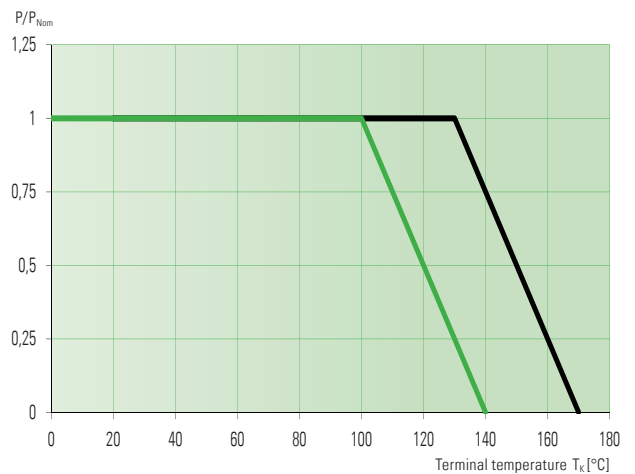


Temperature dependence of the electrical resistance BVN-Z-R0005



— Limiting curve
— Typical temperature dependence of a BVN resistor

Power derating curve

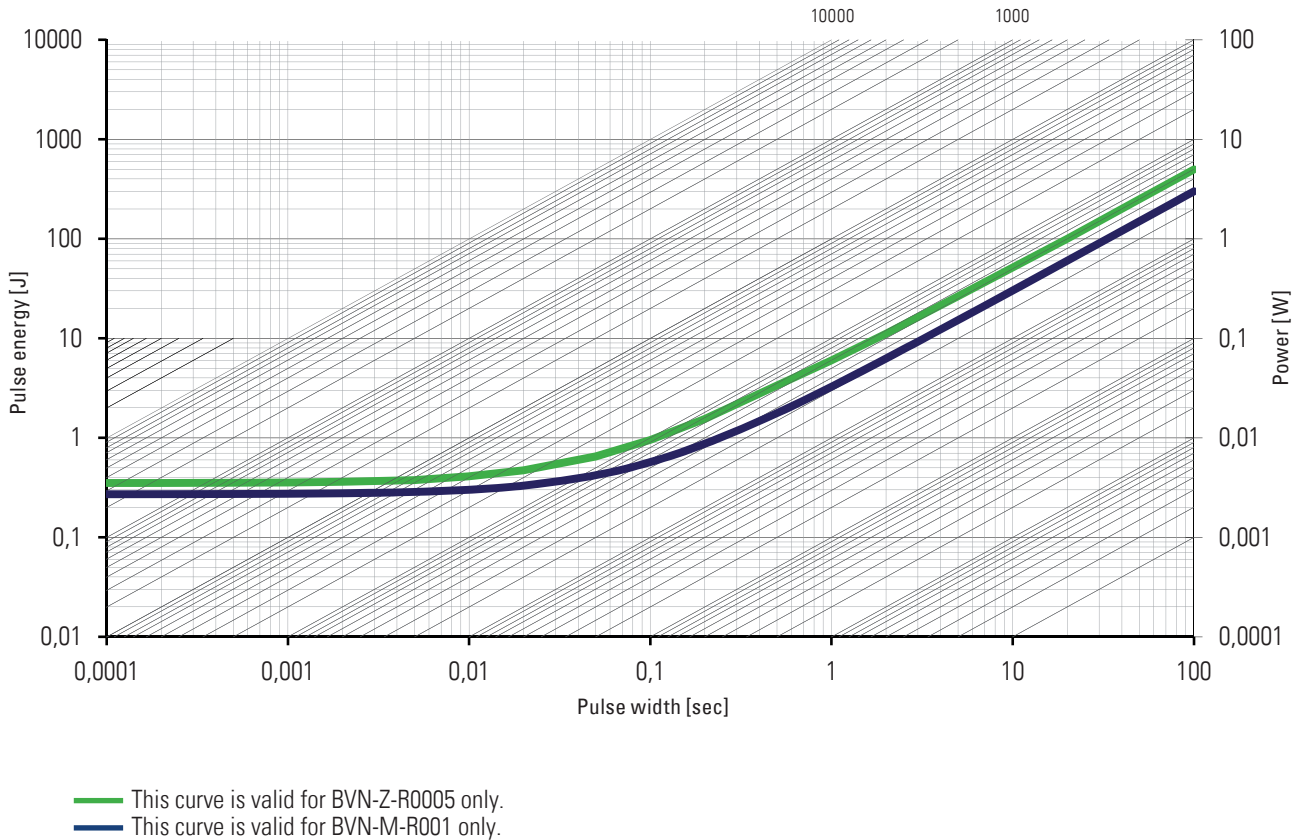


— Stability < 1.0 %
— Improved stability < 0.5 %



BVN (1216)

Maximum pulse energy respectively pulse power for permanent operation



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