

ISA-WELD® // PRECISION RESISTORS FOR ENERGY METERING



BVD



Features

- _ 3 W power rating
- _ Continuous current load up to 75 A
- _ Excellent long-term stability
- _ Heavy copper connectors
- _ Low inductance value
- _ Mounting: Reflow-soldering or welding on copper
- _ Max. solder temperature up to 350 °C / 30 sec or 250 °C / 10 min
- _ RoHS 2011/65/EU compliant



Applications

- _ Energy metering, kWh-meters
- _ Battery current sensing
- _ High current sensing in automotive applications
- _ Current measurement in battery chargers

Technical data

Resistance values	mOhm	0.5 *
Tolerance	%	5
Temperature coefficient (20-60 °C)	ppm/K	<50
Applicable temperature range	°C	-55 to +140
Power rating	W	3
Internal heat resistance (R_{thi})	K/W	<10
Inductance	nH	<3
Stability (Nominal load) deviation after 2000h, T_K = Terminal temperature		<0.5 % ($T_K=110$ °C)

* Further values on request

Ordering code

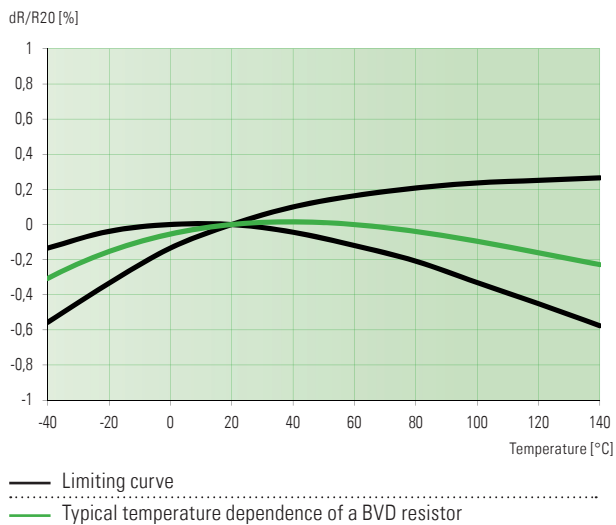
BVD-A - R0005 - 5.0 - D

.....	Version
.....	Tolerance
.....	Resistance value [Ohm] / „R“ represents decimal point
.....	Type

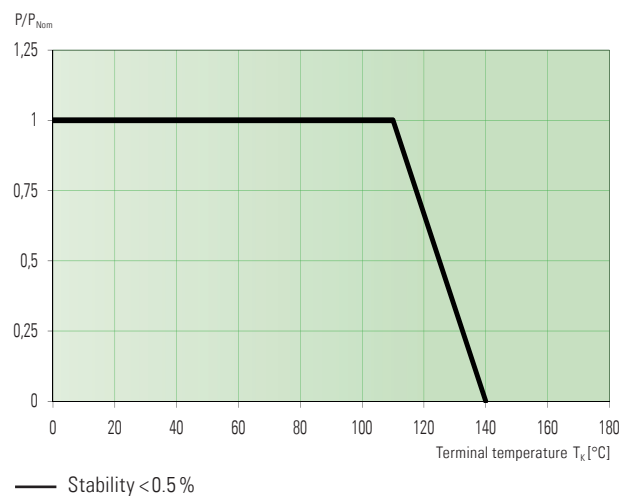


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Temperature dependence of the electrical resistance



Power derating curve



Specification

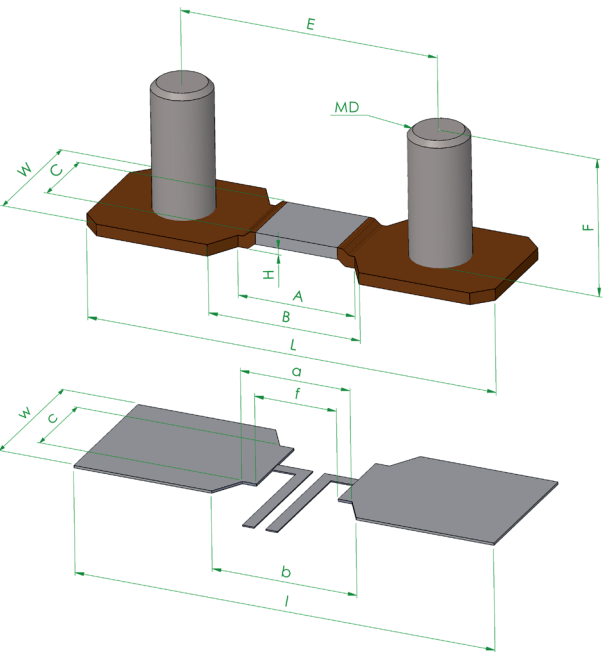
Parameters	Test conditions	Specified values
Temperature Cycling	1000 cycles (-55 °C to +150 °C)	±0.5 %
Low Temperature Storage and Operation	-65 °C for 24 h	±0.5 %
Resistance to Soldering Heat	260 °C for 10 sec / 8h steam aging	±0.5 %
Moisture Resistance	MIL-STD-202 method 106	±0.5 %
Mechanical Shock	100 g, 6 ms half sine	±0.5 %
Vibration, High Frequency	20 g, 10-2000 Hz	±0.5 %
Operational Life	1000 h, TK max at nominal load	±1.0 %
High Temperature Exposure	1000 h / 170 °C	±1.0 %
Bias Humidity	+85 °C, 85 rF, 1000 h	±0.5 %



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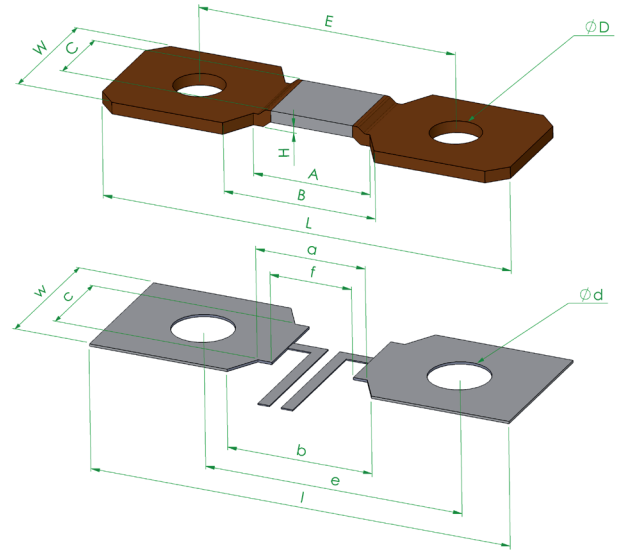
Mechanical dimensions and Pcb-layout proposal, four terminal configuration [mm]

VERSION D



Z-YL-177b

VERSION A (ON REQUEST)



Z-YM-069b

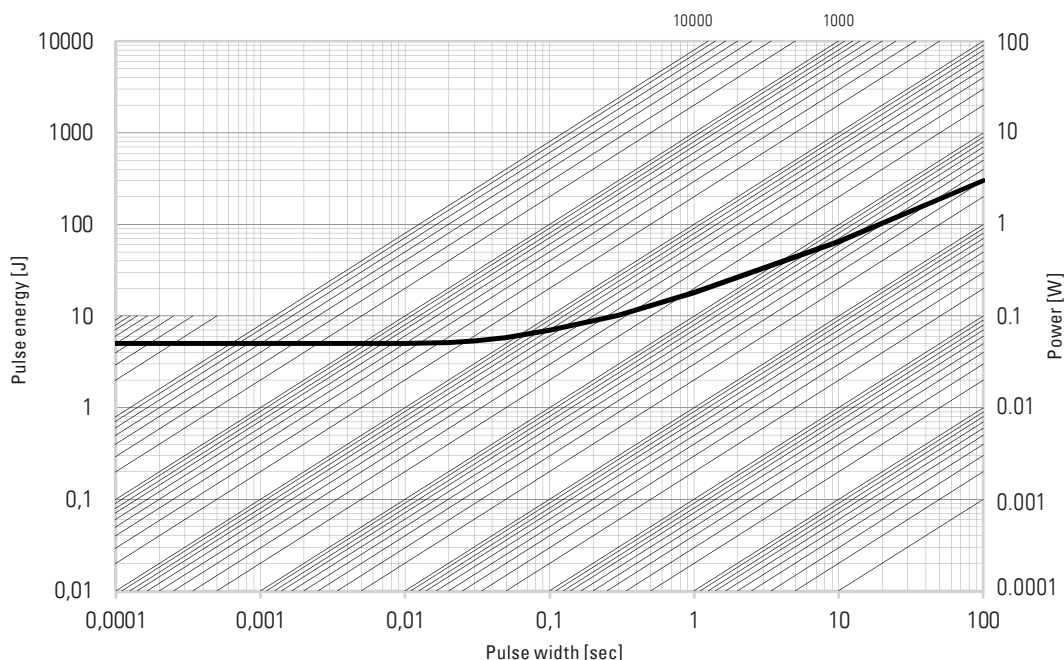
Resistor type	L	W	H	A	B	C	D	E	F
BVD-A-R0005-A	35 ±0.3	11 ±0.2	0.5 ±0.1	10 ±0.2	13 ±0.2	6 ±0.2	Ø 5.1 -0.15	22 ±0.2	-
BVD-A-R0005-D	35 ±0.3	11 ±0.2	0.5 ±0.1	10 ±0.2	13 ±0.2	6 ±0.2	M5	22 ±0.2	12.2 ±0.5

Solder pad type	l	w	a	b	c	d	e	f
BVD-A-R0005-A	36	12	9.4	12.4	7	Ø 5.1	22	7
BVD-A-R0005-D	36	12	9.4	12.4	7	-	-	7



BVD

Maximum pulse energy respectively pulse power for permanent operation



This curve is only valid for the resistance value R0005. The progression of the curve in the lower range could be different for other resistance values. Therefore a separate qualification should be made in thresholds.

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