



ISA-WELD® // PRECISION RESISTORS



BAL // SIZE 5216 (METRIC)

PRELIMINARY VERSION



Features

- Up to 12 W permanent power
- Continuous current load up to 350 A
- High pulse power rating
- Shunt available with tinned or untinned terminals
- AEC-Q200 qualification



Applications

- Current sensor for EBM (Electronic Battery Management) in motorcars, trucks, forklifts, hybrid and electric vehicles
- Current sensing in bus bars

Technical data

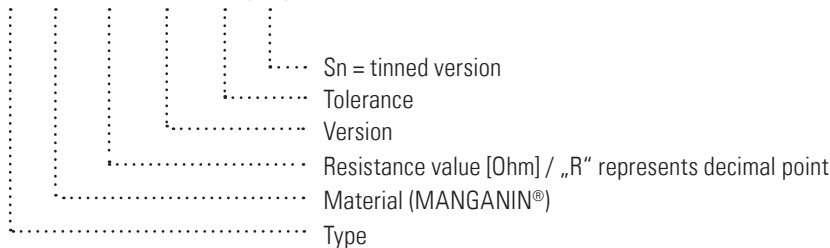
Resistance values	mOhm	0.1
Tolerance	%	5
Temperature coefficient (20-60 °C)	ppm/K	20 ± 40
Applicable temperature range	°C	-40 to +170
Power rating [P]	W	12
Internal heat resistance (R_{thi})	K/W	2
Stability (Nominal load) deviation after 2,000 h		<0.3 % ($T_{max.} = 125\text{°C}$)
		<0.5 % ($T_{max.} = 140\text{°C}$)
		<1.0 % ($T_{max.} = 170\text{°C}$)

Note

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

Ordering code example

BAL - M - R0001 - V01 - 5.0 (-Sn)



Information

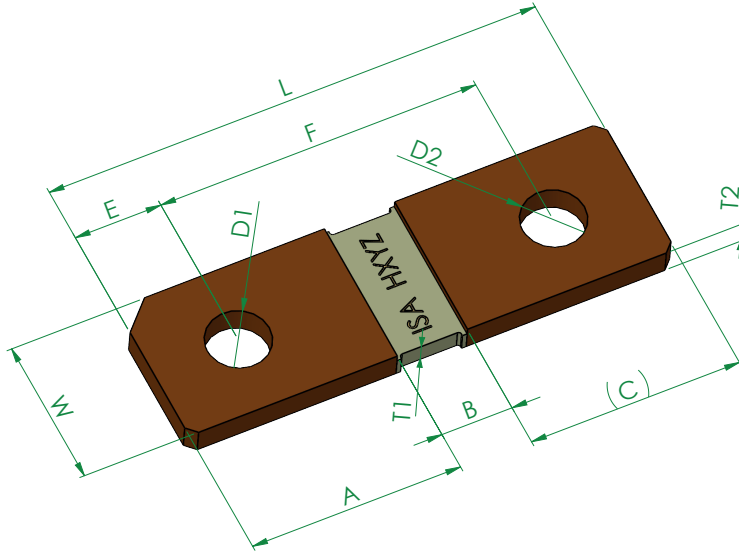
Packaging

140 pcs. per tube for automotive parts



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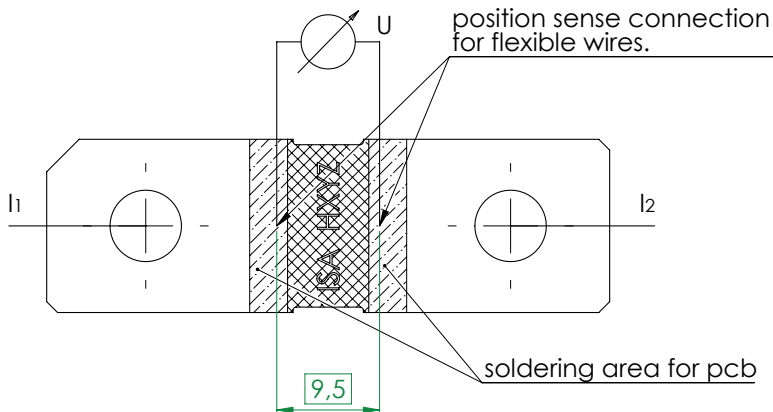
Mechanical dimensions [mm] // Z-YN-744c



type	A	B	C	D1	D2	E
BAL-M-R0001-V01-5.0	22.25 ±0.3	7.5 ±0.3	(22.25)	∅6.6 ±0.1	∅6.6 ±0.1	9.15 ±0.3
BAL-M-R0001-V01-5.0-Sn	22.25 ±0.3	7.5 ±0.3	(22.25)	∅6.6 ±0.1	∅6.6 ±0.1	9.15 ±0.3
BAL-M-R0001-V07-5.0-Sn	22.25 ±0.3	7.5 ±0.3	(22.25)	∅7.2 ±0.1	∅7.2 ±0.1	9.15 ±0.3

type	F	L	T1	T2	W	Copper surface
BAL-M-R0001-V01-5.0	33.7 ±0.2	52 ±0.2	2.2 ±0.2	3 ±0.15	16 ±0.2	blank
BAL-M-R0001-V01-5.0-Sn	33.7 ±0.2	52 ±0.2	2.2 ±0.2	3 ±0.15	16 ±0.2	tinned
BAL-M-R0001-V07-5.0-Sn	33.7 ±0.2	52 ±0.2	2.2 ±0.2	3 ±0.15	16 ±0.2	tinned

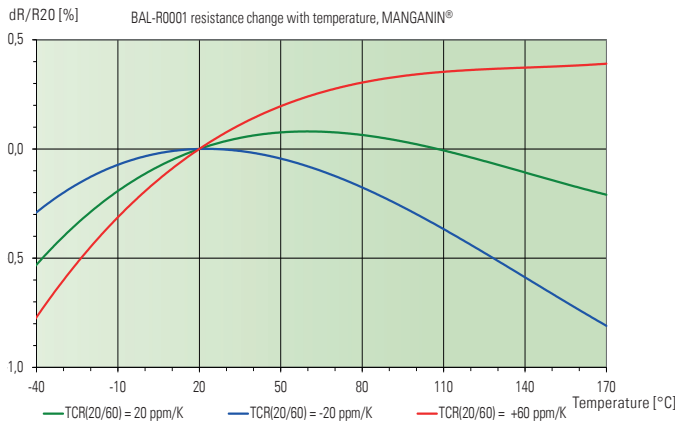
Connection diagram



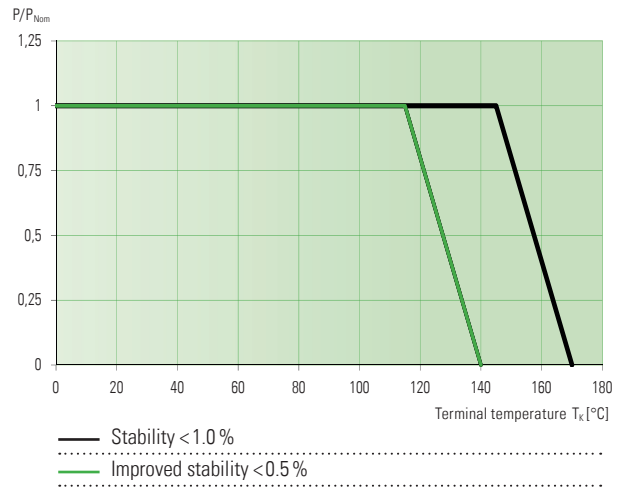


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Temperature dependence of the electrical resistance



Power derating curve



Specification

Parameters	Test conditions	Specified values
Temperature Cycling	1000 cycles (-55 °C to +150 °C)	±0.5 %
Low Temperature Storage	-65 °C for 250 h	±0.1 %
Moisture Resistance	65 °C / 90 – 100 % RH	±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, $T_k = 115$ °C, $P = 12$ W	±0.5 %
High Temperature Exposure	2000 h / 140 °C	±0.5 %
Bias Humidity	+85 °C, 85 % RH, 1000 h	±0.3 %

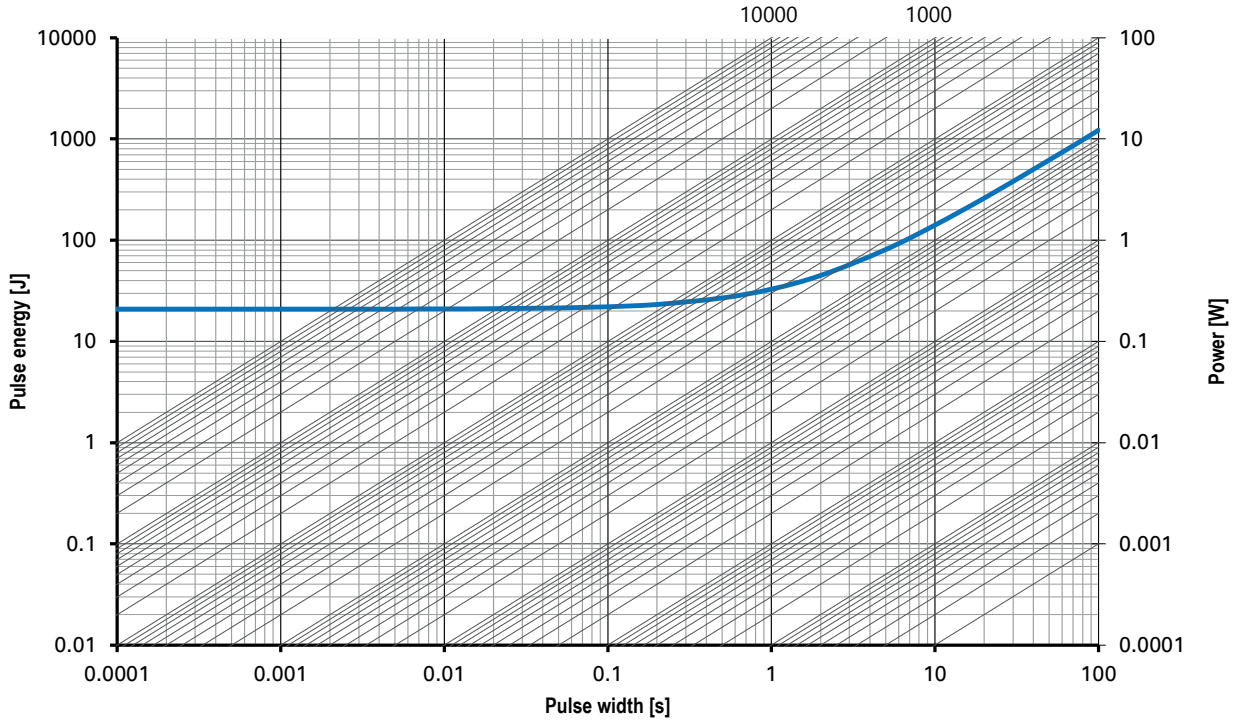


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Maximum pulse energy respectively pulse power for permanent operation

BAL-M-R0001

Maximum pulse energy / power for continuous operation ($T_K = 145\text{ °C}$)



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