



**THE DATASHEET OF
PBV-R020-F1-0.5**

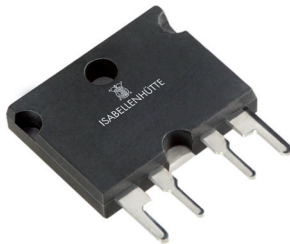




ISA-PLAN® // PRECISION RESISTORS



PBV



Features

- Up to 10 W permanent power
- 4-terminal connection
- Pulse power rating 2 J for 10 ms
- Excellent long-term stability
- RoHS 2011/65/EU compliant



Applications

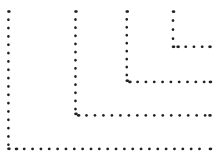
- Power modules
- Frequency converters
- Switch mode power supplies

Technical data

Resistance values	Ohm	0.0005 to 1
Tolerance	%	0.5 / 1 / 5
Temperature coefficient (20-60 °C)	ppm/K	<30 for values ≥R010 <75 for values <R010
Applicable temperature range	°C	-55 to +125
Power rating	W	3 / 10 (on a heatsink)
Thermal resistance to ambient (R _{th})	K/W	<15
Thermal resistance to aluminium substrat (R _{thi})	K/W	<3 <6 for parts <R002
Dielectric withstanding voltage	V AC	500
Inductance	nH	<10
Stability (Nominal load) deviation, T _K = Terminal temperature		<0.5 % after 2000 h (T _K = 70 °C)

Ordering code

PBV - R001 - F1 - 1.0



Tolerance

Terminal

Resistance value [Ohm] / „R“ represents decimal point

Type



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Recommended solder profile

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

Packaging information

Specification	DIN EN 60286-3	
Parts per tube	pcs	25

Assembly instruction

Max. allowed torque for screws M3	1 Nm
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Available standard resistance values and tolerances*

Resistance values	Tolerance 0.5%	Tolerance 1%	Tolerance 5%
R0005		✓	✓
R0015	✓		
R001	✓	✓	✓
R002	✓	✓	
R0022	✓	✓	
R003	✓		✓
R0033	✓	✓	
R0047	✓		
R005	✓	✓	
R0068	✓	✓	
R010	✓	✓	
R015	✓	✓	
R020	✓	✓	
R022	✓	✓	
R025	✓	✓	
R033	✓	✓	
R047	✓		
R050	✓	✓	
R068	✓	✓	
R100	✓	✓	
R150	✓	✓	
R200	✓		
R220	✓		
R500		✓	
1R00	✓		

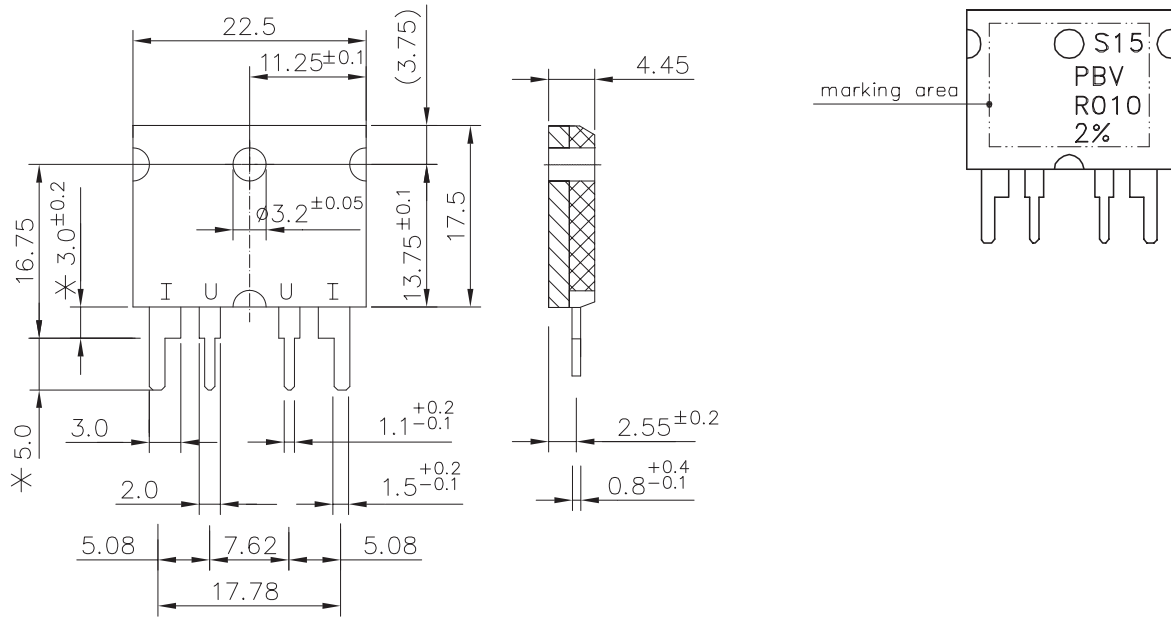
* Further values and tolerances on request

✓ = available



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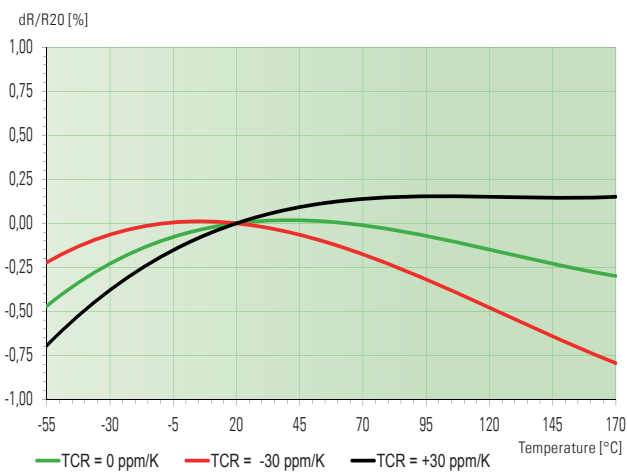
Mechanical dimensions [mm] and marking



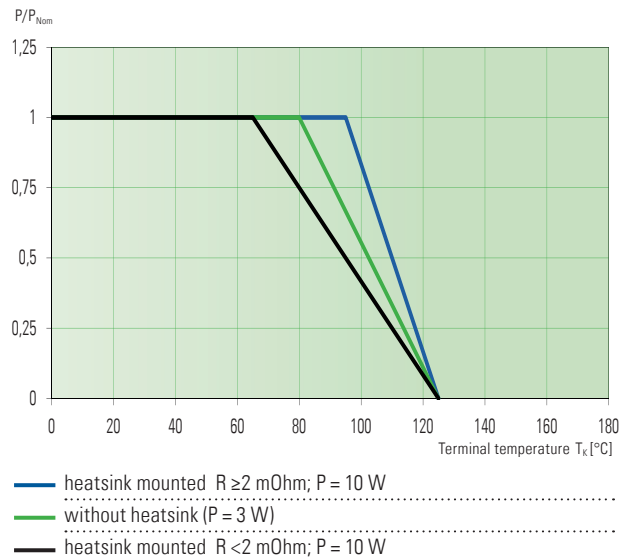
* Measurements for untinned pins

Z-DW-132b

Temperature dependence of the electrical resistance



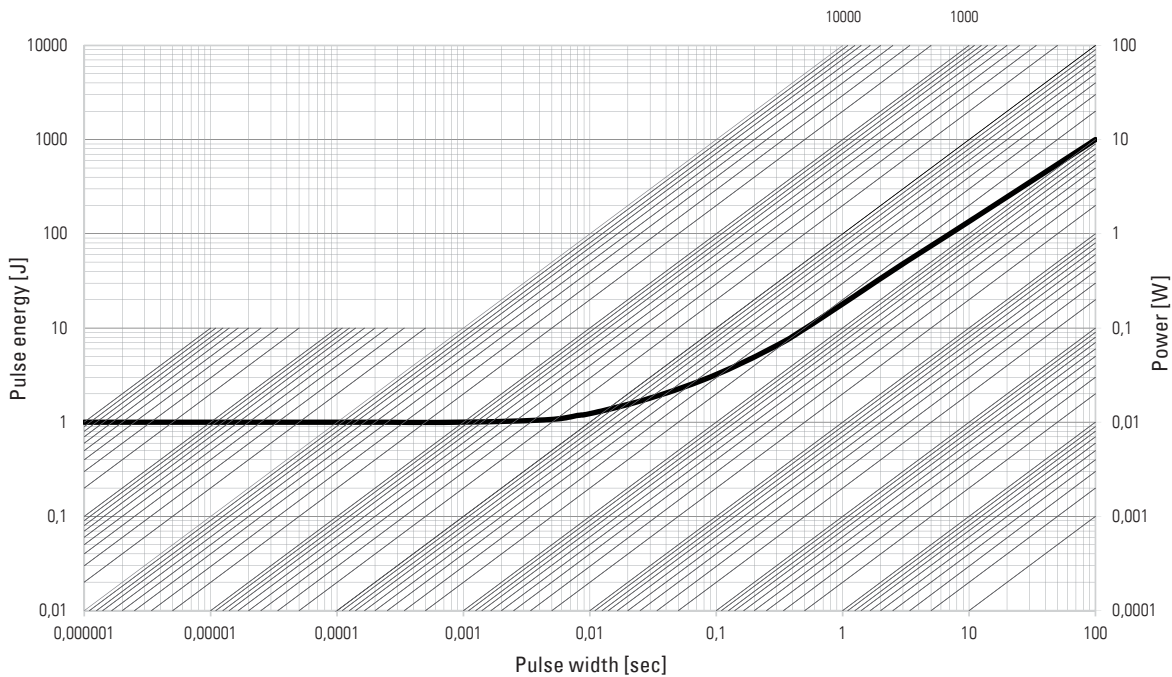
Power derating curve





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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.

Specification



Parameters	Test Conditions	Specification
Maximum Temperature for full power operation (R > 2 mOhm)	70/90 °C	65/95 °C
Working Temperature	-55 to 125 °C	-55 to 125 °C
Solderability	MIL-STD-202 method 208	> 95 % coverage
Resistance to Solvents	MIL-STD-202 method 215, 2.1a, 2.1d	no damage
Low Temperature Storage and Operation	MIL-STD-26E	0.1 %
Life	MIL-STD-26E	0.2 %
High Temperature Exposure	125 °C, 2000 h	0.2 %
Resistance Temperature Characteristic	MIL-STD-202 method 304 (20-60°C)	< 30 ppm/K
Thermal EMF	0 - 100 °C	2 µV/K max.
Frequency Characteristic	inductivity	< 10 nH

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