



**THE DATASHEET OF  
PBV-R022-F1-0.5**

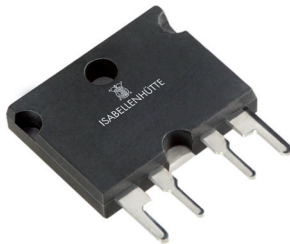




## ISA-PLAN® // PRECISION RESISTORS



### 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

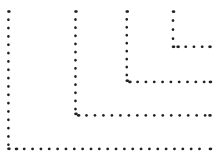
- Power modules
- Frequency converters
- Switch mode power supplies

#### Technical data

Resistance values	<b>Ohm</b>	0.0005 to 1
Tolerance	<b>%</b>	0.5 / 1 / 5
Temperature coefficient (20-60 °C)	<b>ppm/K</b>	<30 for values ≥R010 <75 for values <R010
Applicable temperature range	<b>°C</b>	-55 to +125
Power rating	<b>W</b>	3 / 10 (on a heatsink)
Thermal resistance to ambient (R <sub>th</sub> )	<b>K/W</b>	<15
Thermal resistance to aluminium substrat (R <sub>thi</sub> )	<b>K/W</b>	<3 <6 for parts <R002
Dielectric withstanding voltage	<b>V AC</b>	500
Inductance	<b>nH</b>	<10
Stability (Nominal load) deviation, T <sub>K</sub> = Terminal temperature		<0.5 % after 2000 h (T <sub>K</sub> = 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	<b>°C</b>	260	255	217
Time	<b>sec</b>	peak	40	90

**Packaging information**

Specification	DIN EN 60286-3	
Parts per tube	<b>pcs</b>	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	✓		

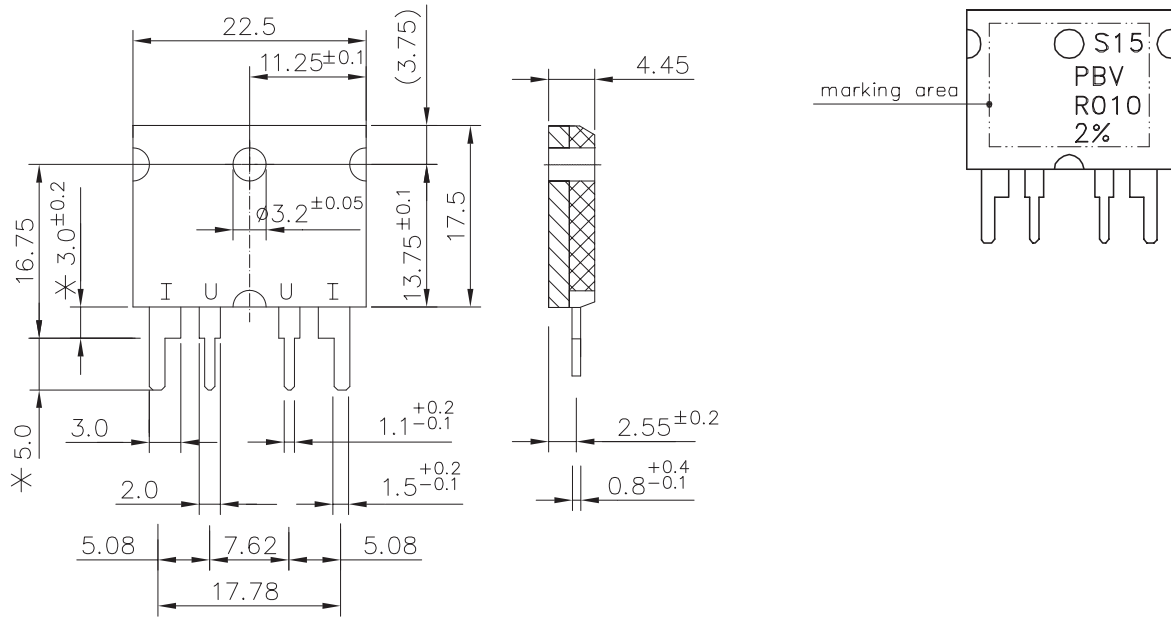
\* Further values and tolerances on request

✓ = available



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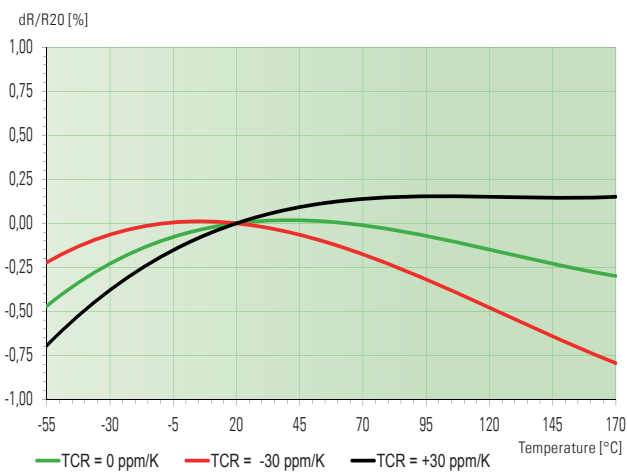
Mechanical dimensions [mm] and marking



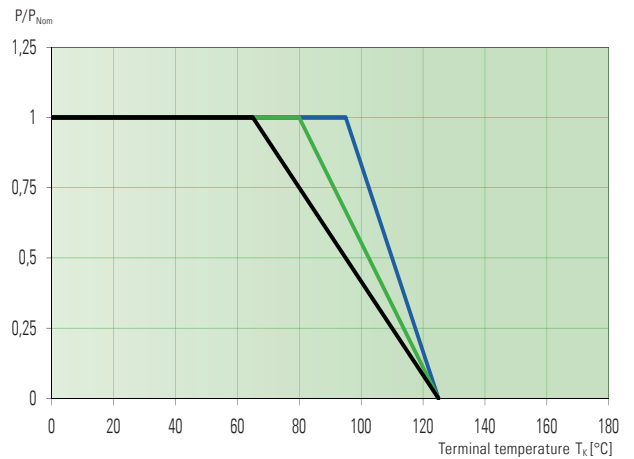
\* Measurements for untinned pins

Z-DW-132b

Temperature dependence of the electrical resistance



Power derating curve

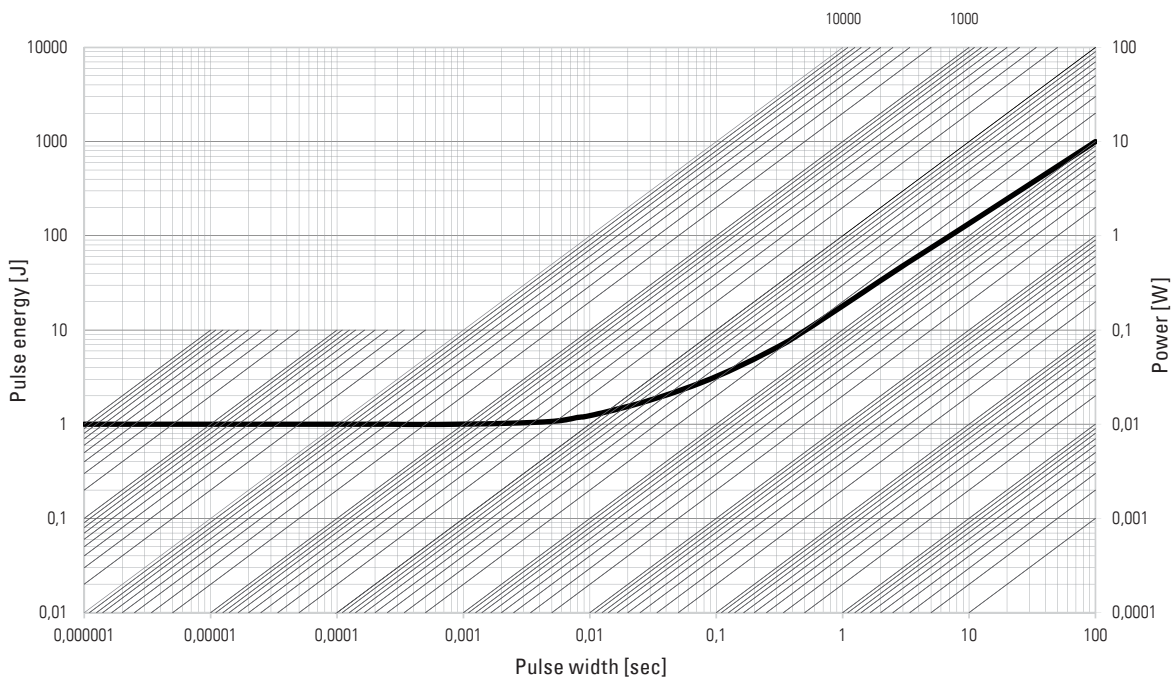


- heatsink mounted R ≥ 2 mΩ; P = 10 W
- without heatsink (P = 3 W)
- heatsink mounted R < 2 mΩ; P = 10 W



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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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