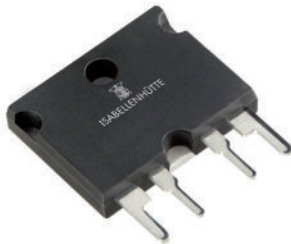


## ISA-PLAN® // PRECISION RESISTORS



### 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

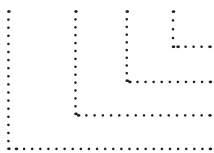
- Power modules
- Frequency converters
- Switch mode power supplies

#### 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<br><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<br><6 for parts <R002                     |
| Dielectric withstanding voltage                                              | <b>V AC</b>  | 500                                          |
| Inductance                                                                   | <b>nH</b>    | <10                                          |
| Stability (Nominal load) deviation,<br>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



## PBV

**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 |
|-----------------------------------|------|

**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              | ✓              |              |              |

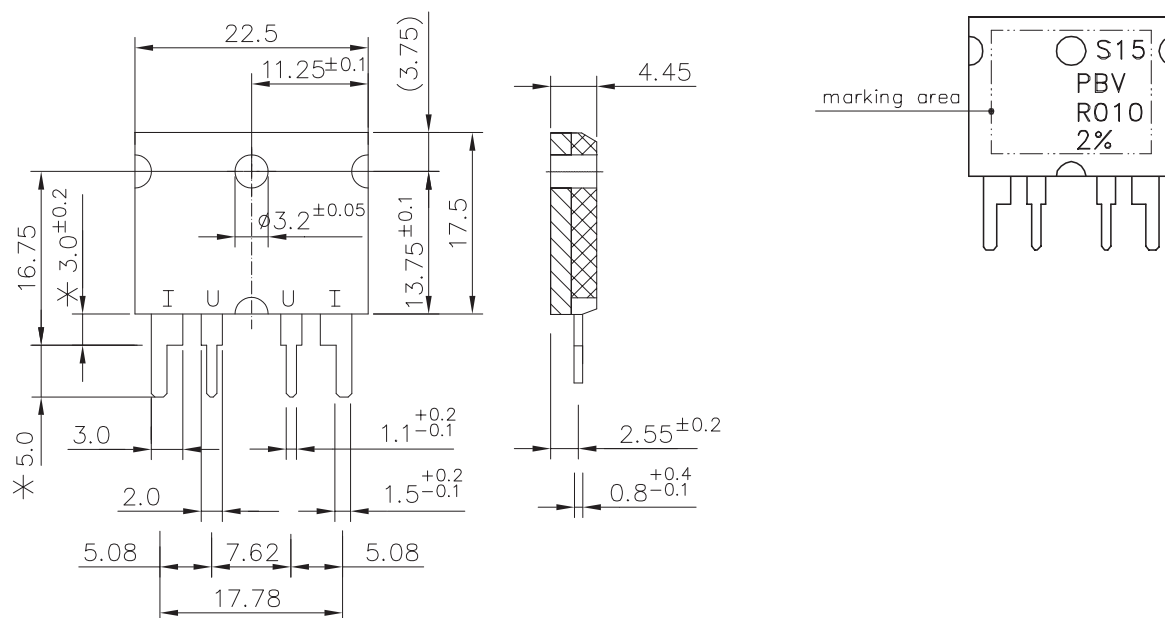
\* Further values and tolerances on request

✓ = available



## PBV

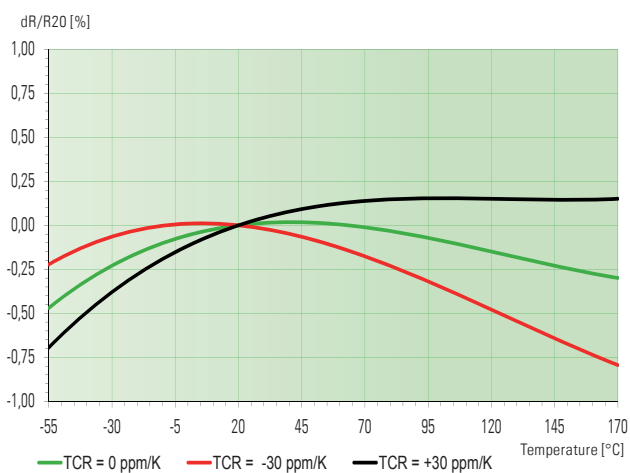
## Mechanical dimensions [mm] and marking



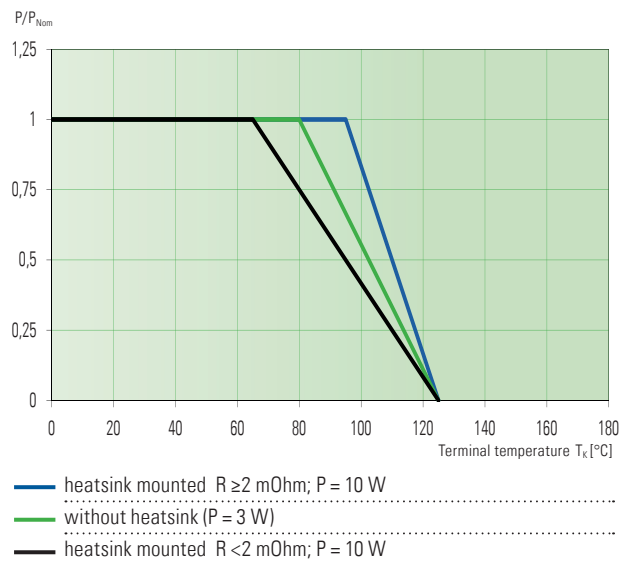
\* Measurements for untinned pins

Z-DW-132b

## Temperature dependence of the electrical resistance

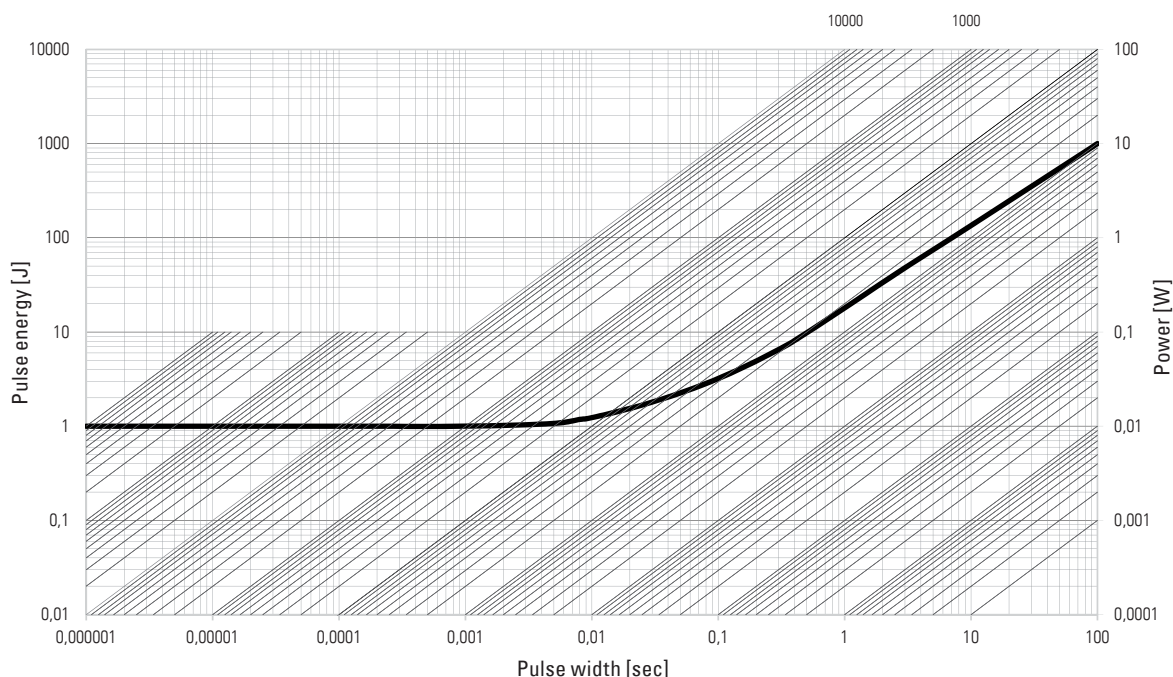


## Power derating curve





PBV

**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 ( $R > 2 \text{ m}\Omega$ ) | 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 $\mu\text{V/K}$ max. |
| Frequency Characteristic                                                 | inductivity                        | < 10 nH                |

**Disclaimer** // All products, product specifications and data are subject to change without notice. The product specifications do not expand or otherwise modify Isabellenhütte's terms and conditions of sale, including but not limited to, the warranty expressed therein. Isabellenhütte makes no warranty, representation or guarantee other than as set forth in its terms and conditions of sale. Information provided in datasheets and/or specifications may vary from actual results in different applications. Any statements made by Isabellenhütte regarding the suitability of products for certain types of applications are based on its knowledge of typical requirements that are often placed on its products. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in the application intended. No license, express or implied, or otherwise, to any intellectual property rights is granted by this document. Any and all liability arising out of the application or use of any product shall be as set forth in Isabellenhütte's terms and conditions of sale.

