



**THE DATASHEET OF
PBV-R001-F1-1.0**

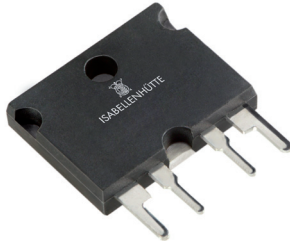




ISA-PLAN® // PRECISION RESISTORS



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

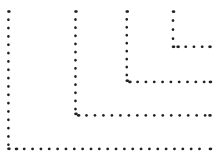
- Power modules
- Frequency converters
- Switch mode power supplies

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 |
|-----------------------------------|------|

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 | ✓ | | |

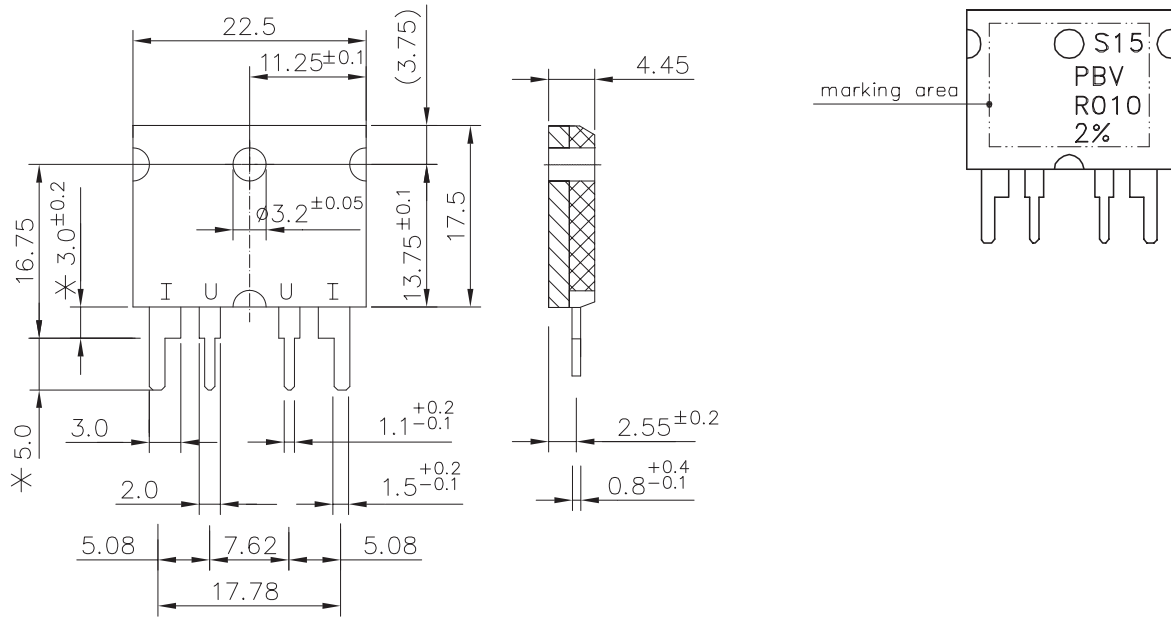
* Further values and tolerances on request

✓ = available



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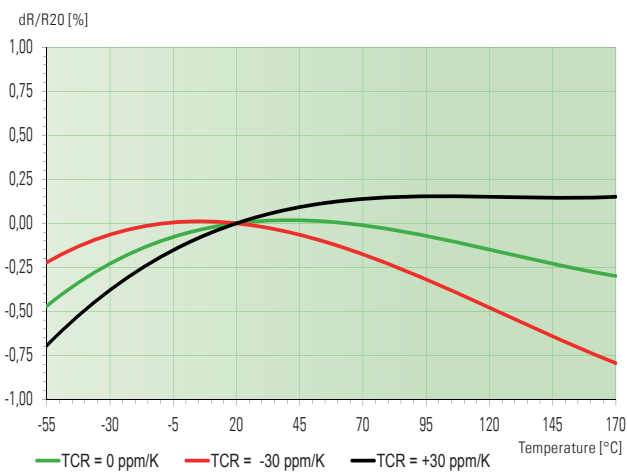
Mechanical dimensions [mm] and marking



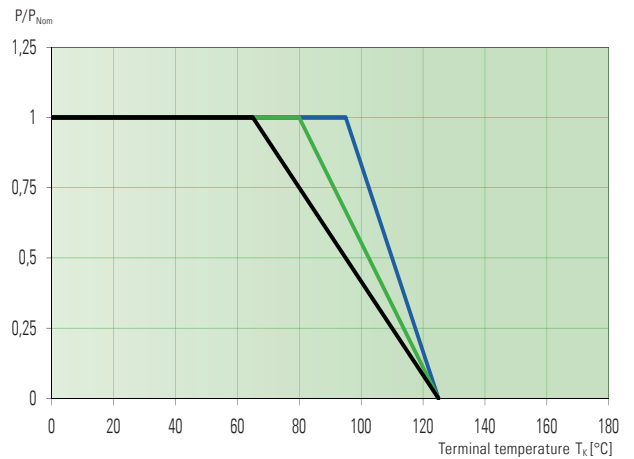
* Measurements for untinned pins

Z-DW-132b

Temperature dependence of the electrical resistance



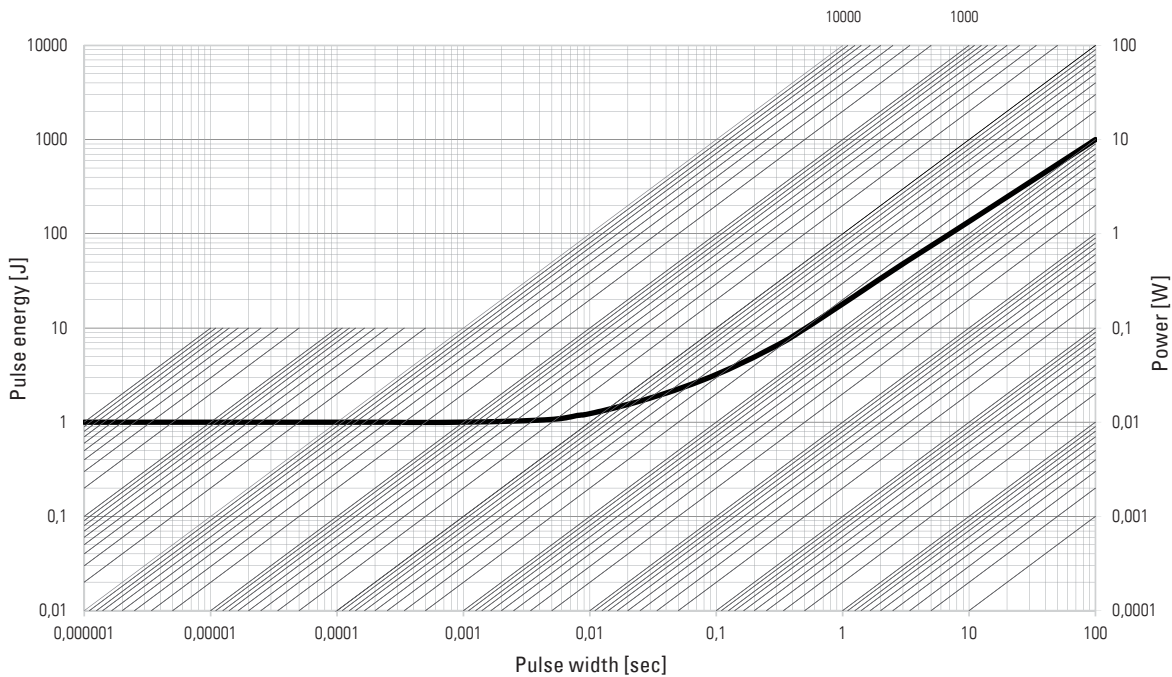
Power derating curve





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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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