

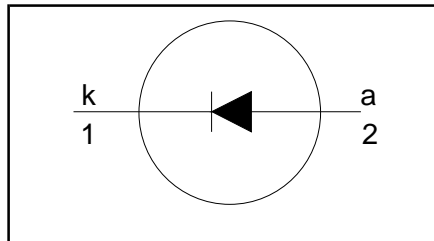
**Rectifier diodes
Schottky barrier**

PBYR1045 series

FEATURES

- Low forward volt drop
- Fast switching
- Reverse surge capability
- High thermal cycling performance
- Low thermal resistance

SYMBOL



QUICK REFERENCE DATA

| |
|-------------------------------------|
| $V_R = 40 \text{ V} / 45 \text{ V}$ |
| $I_{F(AV)} = 10 \text{ A}$ |
| $V_F \leq 0.57 \text{ V}$ |

GENERAL DESCRIPTION

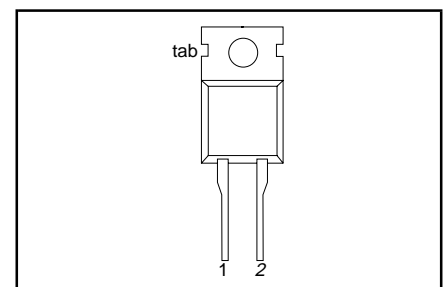
Schottky rectifier diodes in a plastic envelope. Intended for use as output rectifiers in low voltage, high frequency switched mode power supplies.

The PBYR1045 series is supplied in the conventional leaded SOD59 (TO220AC) package.

PINNING

| PIN | DESCRIPTION |
|-----|-------------|
| 1 | cathode |
| 2 | anode |
| tab | cathode |

SOD59 (TO220AC)



LIMITING VALUES

Limiting values in accordance with the Absolute Maximum System (IEC 134)

| SYMBOL | PARAMETER | CONDITIONS | MIN. | MAX. | | UNIT |
|-------------|---------------------------------------|--|------|-----------|-----------|------------------|
| | | | | | | |
| | | PBYR10 | | 40 | 45 | |
| V_{RRM} | Peak repetitive reverse voltage | | - | 40 | 45 | V |
| V_{RWM} | Working peak reverse voltage | | - | 40 | 45 | V |
| V_R | Continuous reverse voltage | $T_{mb} \leq 113 \text{ }^\circ\text{C}$ | - | 40 | 45 | V |
| $I_{F(AV)}$ | Average rectified forward current | square wave; $\delta = 0.5$; $T_{mb} \leq 136 \text{ }^\circ\text{C}$ | - | 10 | | A |
| I_{FRM} | Repetitive peak forward current | square wave; $\delta = 0.5$; $T_{mb} \leq 136 \text{ }^\circ\text{C}$ | - | 20 | | A |
| I_{FSM} | Non-repetitive peak forward current | $t = 10 \text{ ms}$ | - | 135 | | A |
| | | $t = 8.3 \text{ ms}$ sinusoidal; $T_j = 125 \text{ }^\circ\text{C}$ prior to surge; with reapplied $V_{RRM(max)}$ pulse width and repetition rate limited by T_{jmax} | - | 150 | | A |
| I_{RRM} | Peak repetitive reverse surge current | | - | 1 | | A |
| T_j | Operating junction temperature | | - | 150 | | $^\circ\text{C}$ |
| T_{stg} | Storage temperature | | - 65 | 175 | | $^\circ\text{C}$ |

THERMAL RESISTANCES

| SYMBOL | PARAMETER | CONDITIONS | MIN. | TYP. | MAX. | UNIT |
|----------------|--|-------------|------|------|------|------|
| $R_{th\ j-mb}$ | Thermal resistance junction to mounting base | | - | - | 2 | K/W |
| $R_{th\ j-a}$ | Thermal resistance junction to ambient | in free air | - | 60 | - | K/W |

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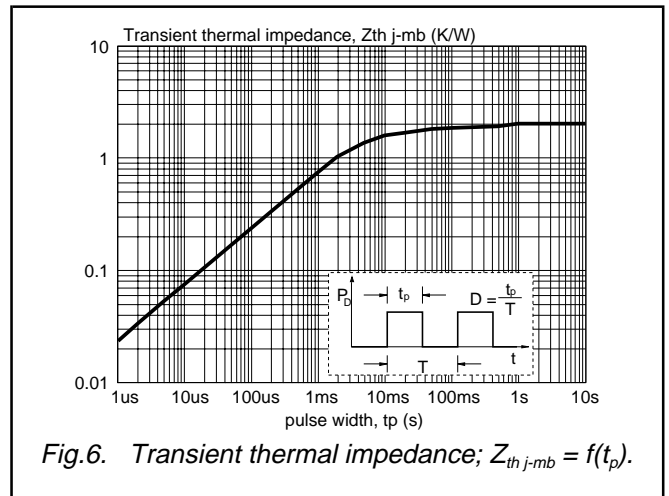
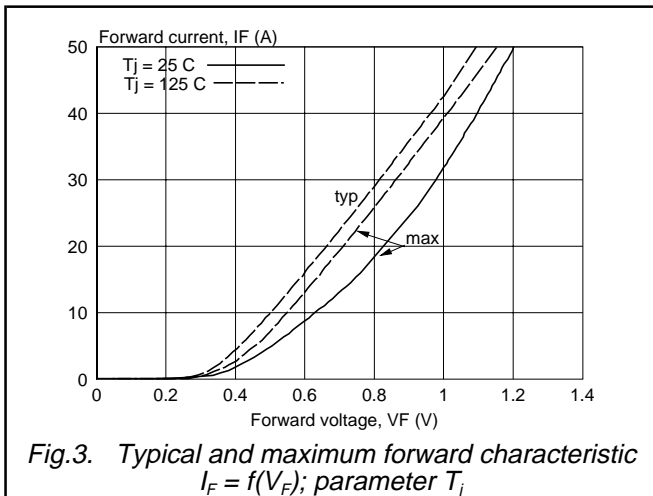
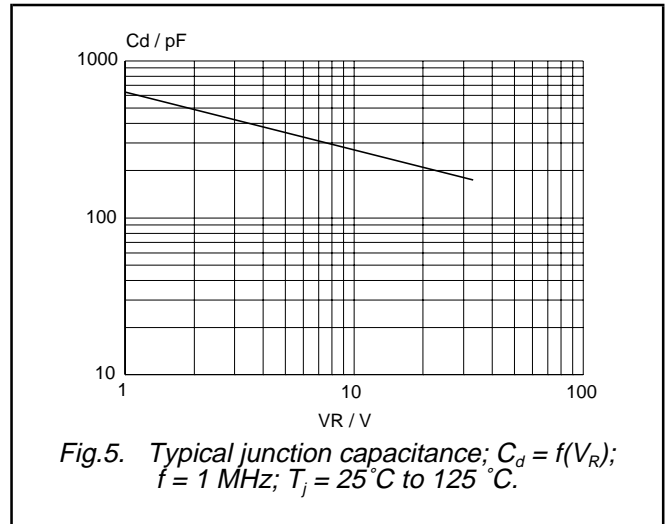
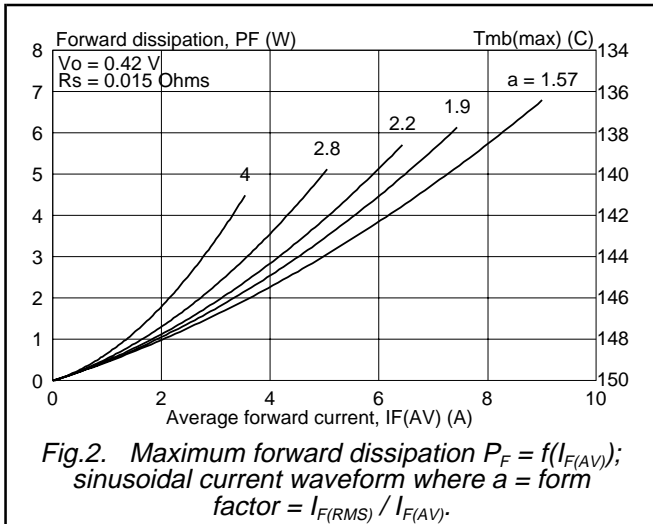
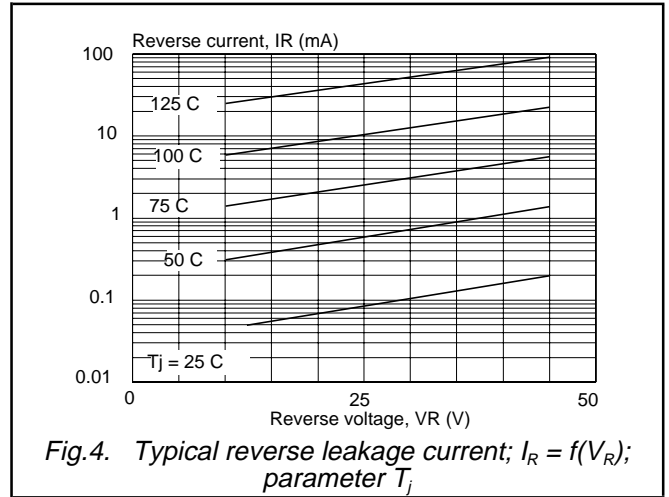
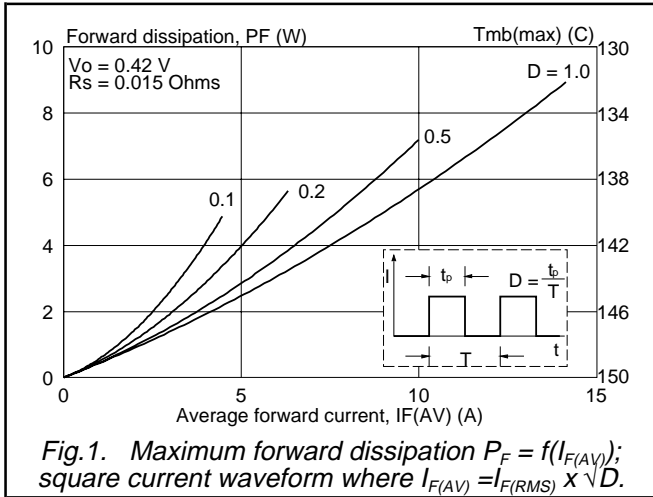
PBYR1045 series

ELECTRICAL CHARACTERISTICS $T_j = 25\text{ }^\circ\text{C}$ unless otherwise specified

| SYMBOL | PARAMETER | CONDITIONS | MIN. | TYP. | MAX. | UNIT |
|--------|----------------------|--|------|------|------|------|
| V_F | Forward voltage | $I_F = 10\text{ A}; T_j = 125\text{ }^\circ\text{C}$ | - | 0.5 | 0.57 | V |
| | | $I_F = 20\text{ A}; T_j = 125\text{ }^\circ\text{C}$ | - | 0.69 | 0.72 | V |
| I_R | Reverse current | $I_F = 20\text{ A}$ | - | 0.65 | 0.84 | V |
| | | $V_R = V_{RWM}$ | - | 0.2 | 1.3 | mA |
| C_d | Junction capacitance | $V_R = V_{RWM}; T_j = 100\text{ }^\circ\text{C}$ | - | 22 | 35 | mA |
| | | $V_R = 5\text{ V}; f = 1\text{ MHz}; T_j = 25\text{ }^\circ\text{C to } 125\text{ }^\circ\text{C}$ | - | 350 | - | pF |

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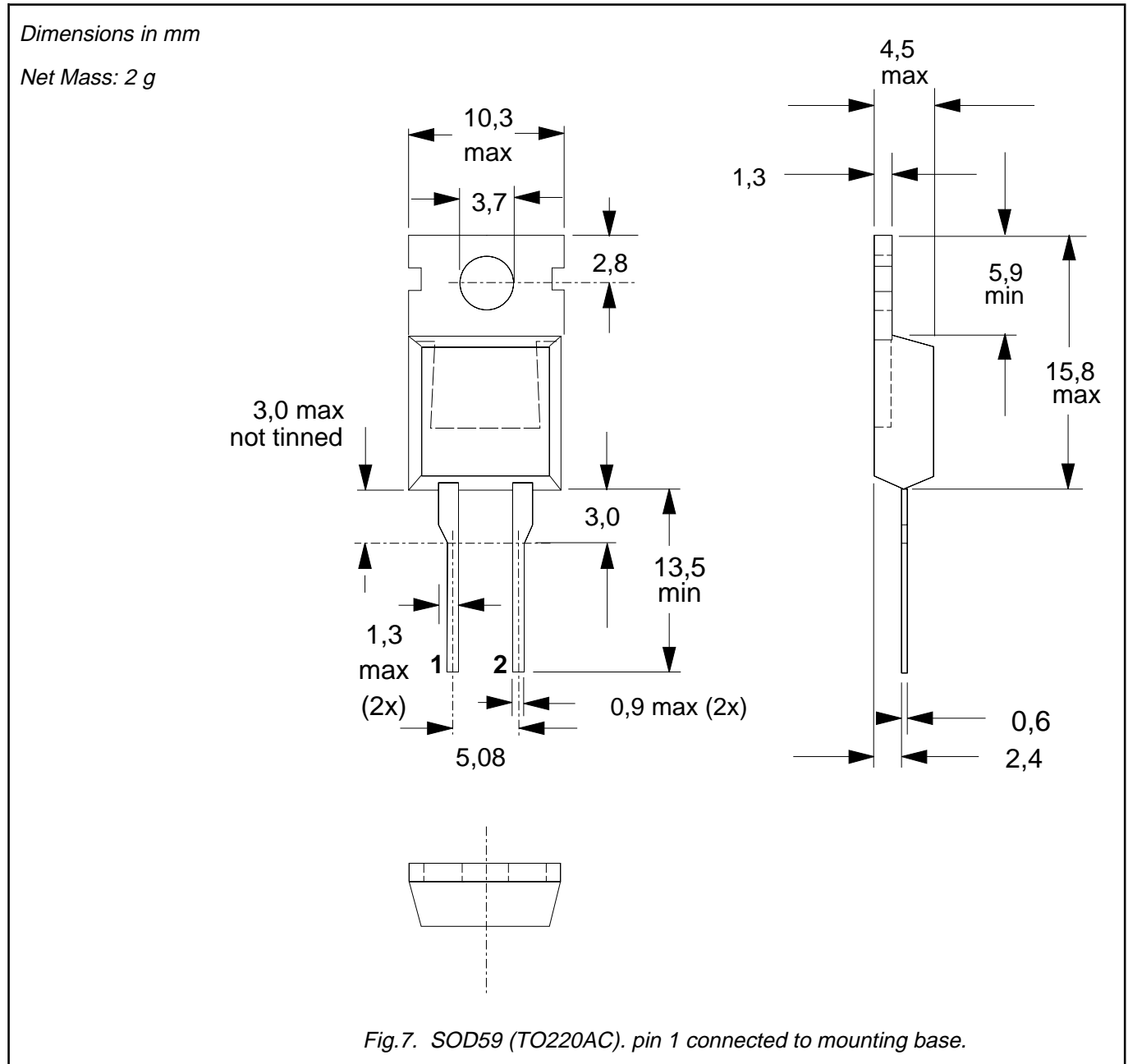
PBYR1045 series



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MECHANICAL DATA



Notes

1. Refer to mounting instructions for TO220 envelopes.
2. Epoxy meets UL94 V0 at 1/8".

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DEFINITIONS

| | |
|--|---|
| Data sheet status | |
| Objective specification | This data sheet contains target or goal specifications for product development. |
| Preliminary specification | This data sheet contains preliminary data; supplementary data may be published later. |
| Product specification | This data sheet contains final product specifications. |
| Limiting values | |
| Limiting values are given in accordance with the Absolute Maximum Rating System (IEC 134). Stress above one or more of the limiting values may cause permanent damage to the device. These are stress ratings only and operation of the device at these or at any other conditions above those given in the Characteristics sections of this specification is not implied. Exposure to limiting values for extended periods may affect device reliability. | |
| Application information | |
| Where application information is given, it is advisory and does not form part of the specification. | |
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