

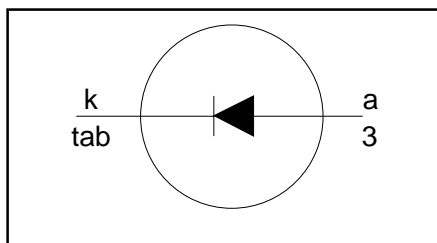
**Rectifier diodes  
Schottky barrier**

**PBYR10100B series**

**FEATURES**

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

**SYMBOL**



**QUICK REFERENCE DATA**

|  |
|--|
| $V_R = 60\text{ V} / 80\text{ V} / 100\text{ V}$ |
| $I_{F(AV)} = 10\text{ A}$                        |
| $V_F \leq 0.7\text{ V}$                          |

**GENERAL DESCRIPTION**

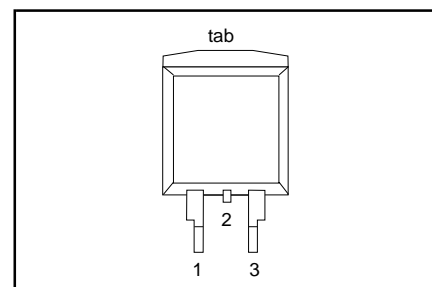
Schottky rectifier diodes in a plastic envelope. Intended for use as output rectifiers in low voltage, high frequency switched mode power supplies.

The PBYR10100B series is supplied in the surface mounting SOT404 package.

**PINNING**

| PIN | DESCRIPTION          |
|-----|----------------------|
| 1   | no connection        |
| 2   | cathode <sup>1</sup> |
| 3   | anode                |
| tab | cathode              |

**SOT404**



**LIMITING VALUES**

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

| SYMBOL      | PARAMETER                             | CONDITIONS  | MIN. | MAX. |     |      | UNIT             |
|-------------|---------------------------------------|---|------|------|-----|------|------------------|
|             |                                       |   |      | 60B  | 80B | 100B |                  |
|             |                                       | <b>PBYR10</b>   |      |      |     |      |                  |
| $V_{RRM}$   | Peak repetitive reverse voltage       |   | -    | 60   | 80  | 100  | V                |
| $V_{RWM}$   | Working peak reverse voltage          |   | -    | 60   | 80  | 100  | V                |
| $V_R$       | Continuous reverse voltage            | $T_{mb} \leq 139\text{ }^\circ\text{C}$   | -    | 60   | 80  | 100  | V                |
| $I_{F(AV)}$ | Average rectified forward current     | square wave; $\delta = 0.5$ ; $T_{mb} \leq 133\text{ }^\circ\text{C}$   | -    | 10   |     |      | A                |
| $I_{FRM}$   | Repetitive peak forward current       | square wave; $\delta = 0.5$ ; $T_{mb} \leq 133\text{ }^\circ\text{C}$   | -    | 20   |     |      | A                |
| $I_{FSM}$   | Non-repetitive peak forward current   | $t = 10\text{ ms}$  | -    | 135  |     |      | A                |
|             |                                       | $t = 8.3\text{ ms}$   | -    | 150  |     |      | A                |
| $I_{RRM}$   | Peak repetitive reverse surge current | sinusoidal; $T_j = 125\text{ }^\circ\text{C}$ prior to surge; with reapplied $V_{RRM(max)}$ pulse width and repetition rate limited by $T_{jmax}$ | -    | 1    |     |      | A                |
| $T_j$       | Operating junction temperature        |   | -    | 150  |     |      | $^\circ\text{C}$ |
| $T_{stg}$   | Storage temperature                   |   | - 65 | 175  |     |      | $^\circ\text{C}$ |

<sup>1</sup> It is not possible to make connection to pin 2 of the SOT404 package

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**THERMAL RESISTANCES**

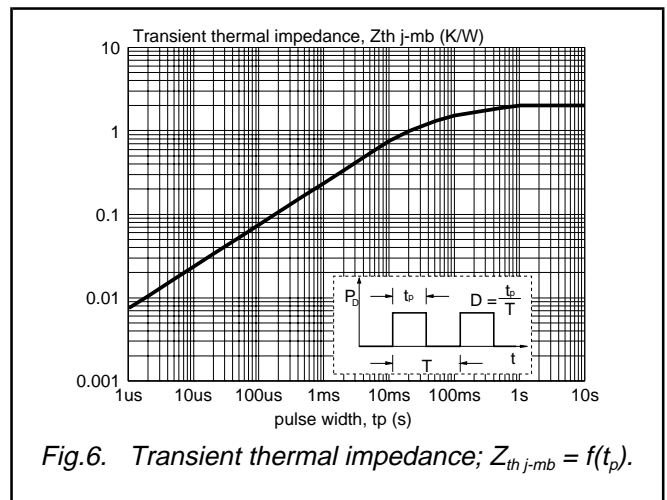
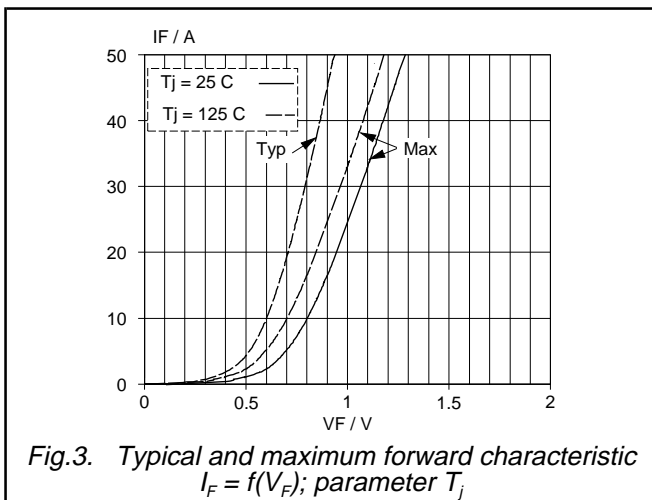
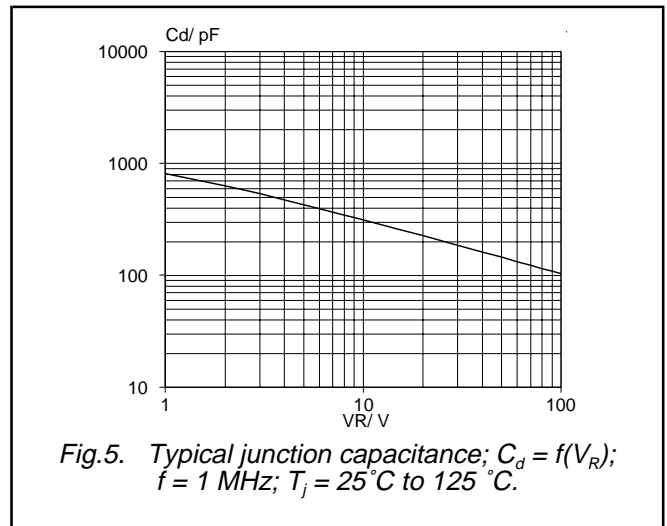
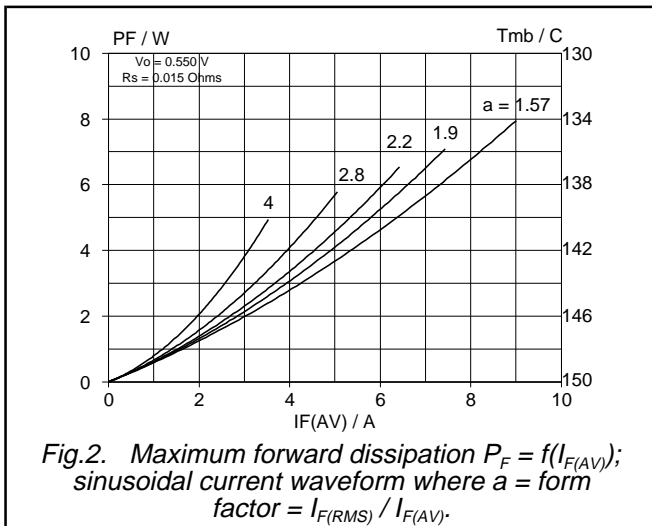
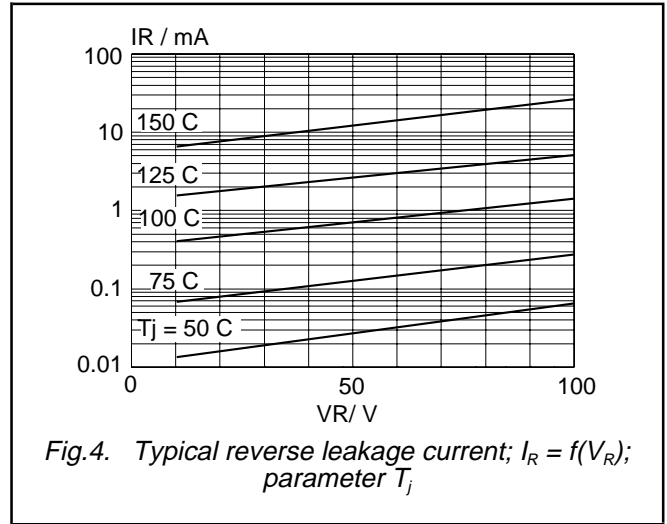
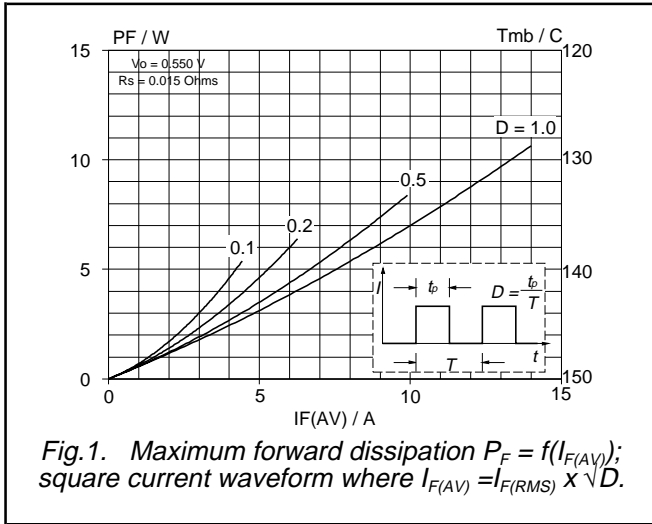
| SYMBOL         | PARAMETER                                    | CONDITIONS                                | MIN. | TYP. | MAX. | UNIT |
|----------------|--|---|------|------|------|------|
| $R_{th\ j-mb}$ | Thermal resistance junction to mounting base |   | -    | -    | 2    | K/W  |
| $R_{th\ j-a}$  | Thermal resistance junction to ambient       | pcb mounted, minimum footprint, FR4 board | -    | 50   | -    | K/W  |

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

| SYMBOL | PARAMETER            | CONDITIONS   | MIN. | TYP. | MAX. | UNIT          |
|--------|----------------------|--|------|------|------|---------------|
| $V_F$  | Forward voltage      | $I_F = 10\text{ A}; T_j = 125\text{ }^\circ\text{C}$   | -    | 0.61 | 0.7  | V             |
|        |                      | $I_F = 20\text{ A}; T_j = 125\text{ }^\circ\text{C}$   | -    | 0.74 | 0.85 | V             |
|        |                      | $I_F = 20\text{ A}$  | -    | 0.88 | 0.95 | V             |
| $I_R$  | Reverse current      | $V_R = V_{RWM}$  | -    | 5    | 150  | $\mu\text{A}$ |
|        |                      | $V_R = V_{RWM}; T_j = 125\text{ }^\circ\text{C}$   | -    | 5    | 15   | mA            |
| $C_d$  | Junction capacitance | $V_R = 5\text{ V}; f = 1\text{ MHz}; T_j = 25\text{ }^\circ\text{C to } 125\text{ }^\circ\text{C}$ | -    | 420  | -    | pF            |

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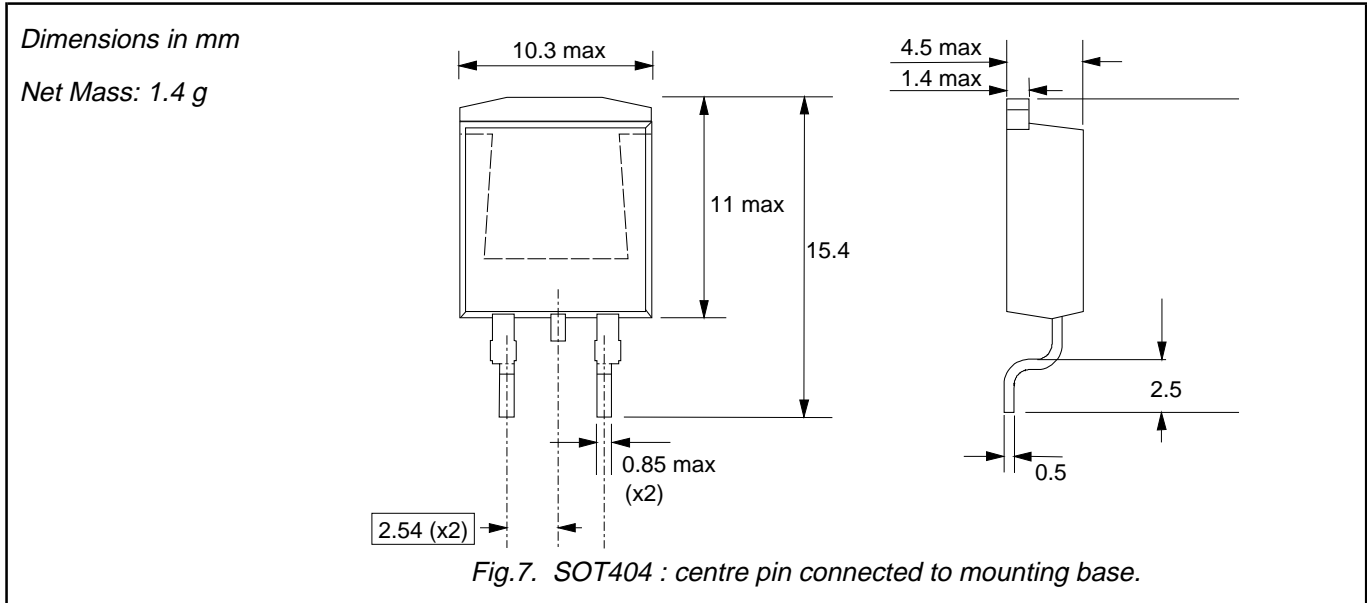
PBYR10100B series



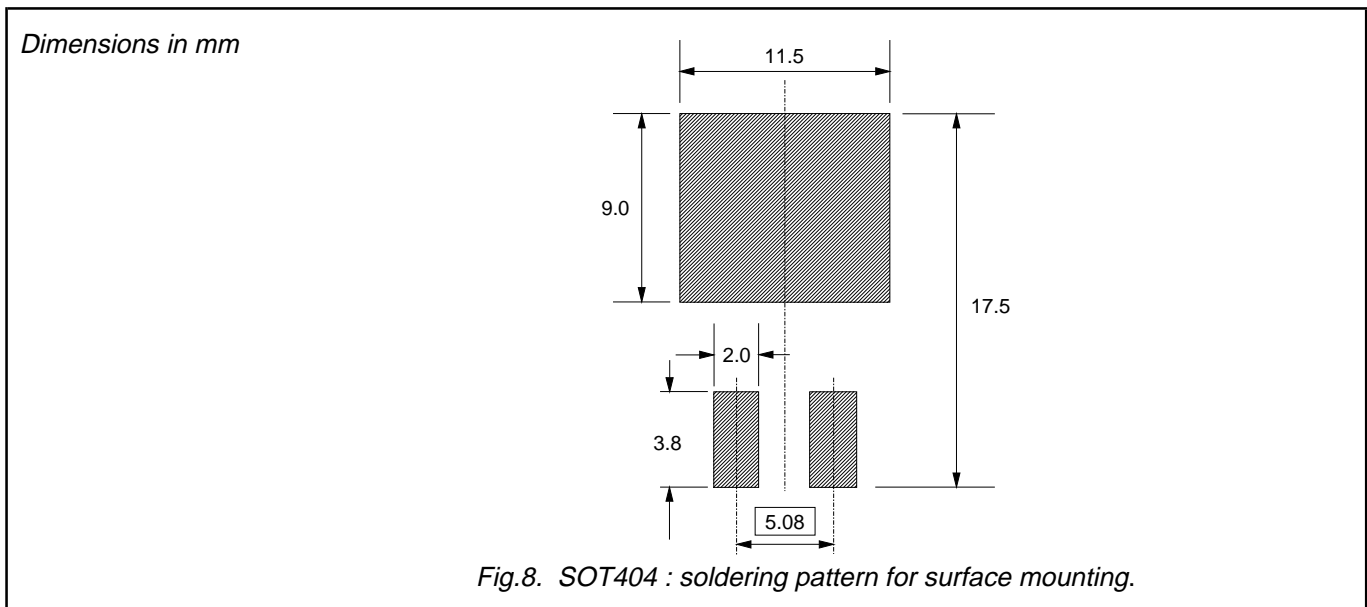
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**MECHANICAL DATA**



**MOUNTING INSTRUCTIONS**



**Notes**

1. Epoxy meets UL94 V0 at 1/8".

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## DEFINITIONS

|  |   |
|--|---|
| <b>Data sheet status</b>   |   |
| 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.                                |
| <b>Limiting values</b>   |   |
| 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. |   |
| <b>Application information</b>   |   |
| Where application information is given, it is advisory and does not form part of the specification.  |   |
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## LIFE SUPPORT APPLICATIONS

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