

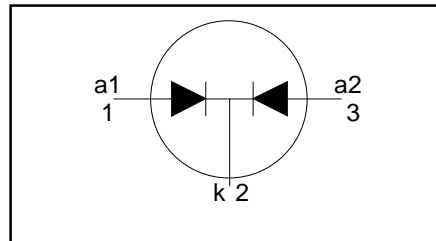
**Rectifier diodes  
Schottky barrier**

**PBYR645CT series**

**FEATURES**

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

**SYMBOL**



**QUICK REFERENCE DATA**

|   |
|---|
| $V_R = 35\text{ V} / 40\text{ V} / 45\text{ V}$ |
| $I_{O(AV)} = 10\text{ A}$                       |
| $V_F \leq 0.6\text{ V}$                         |

**GENERAL DESCRIPTION**

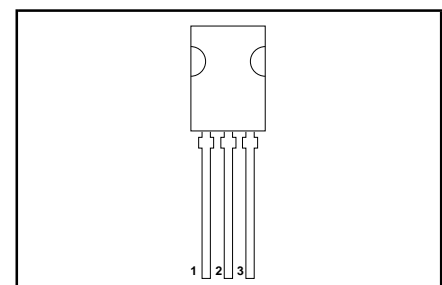
Dual, common cathode schottky rectifier diodes in a plastic envelope. Intended for use as output rectifiers in low voltage, high frequency switched mode power supplies.

The PBYR645CT series is supplied in the conventional leaded SOT82 package.

**PINNING**

| PIN | DESCRIPTION |
|-----|-------------|
| 1   | anode 1     |
| 2   | cathode     |
| 3   | anode 2     |
| tab | cathode     |

**SOT82**



**LIMITING VALUES**

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

| SYMBOL      | PARAMETER   | CONDITIONS   | MIN. | MAX. |      |      | UNIT             |
|-------------|---|--|------|------|------|------|------------------|
|             |   |  |      | 35CT | 40CT | 45CT |                  |
| $V_{RRM}$   | Peak repetitive reverse voltage                           | PBYR6<br>$T_{mb} \leq 100\text{ }^\circ\text{C}$   | -    | 35   | 40   | 45   | V                |
| $V_{RWM}$   | Working peak reverse voltage                              |  | -    | 35   | 40   | 45   | V                |
| $V_R$       | Continuous reverse voltage                                |  | -    | 35   | 40   | 45   | V                |
| $I_{O(AV)}$ | Average rectified output current (both diodes conducting) | square wave; $\delta = 0.5$ ; $T_{mb} \leq 119\text{ }^\circ\text{C}$  | -    | 10   |      |      | A                |
| $I_{FRM}$   | Repetitive peak forward current per diode                 | square wave; $\delta = 0.5$ ; $T_{mb} \leq 119\text{ }^\circ\text{C}$  | -    | 10   |      |      | A                |
| $I_{FSM}$   | Non-repetitive peak forward current diode                 | $t = 10\text{ ms}$<br>$t = 8.3\text{ ms}$<br>sinusoidal; $T_j = 125\text{ }^\circ\text{C}$ prior to surge; with reapplied $V_{RRM(max)}$ pulse width and repetition rate limited by $T_{jmax}$ | -    | 75   |      |      | A                |
|             |   |  | -    | 82   |      |      | A                |
| $I_{RRM}$   | Peak repetitive reverse surge current per diode           |  | -    | 1    |      |      | A                |
| $T_j$       | Operating junction temperature                            |  | -    | 150  |      |      | $^\circ\text{C}$ |
| $T_{stg}$   | Storage temperature                                       |  | - 65 | 150  |      |      | $^\circ\text{C}$ |

**THERMAL RESISTANCES**

| SYMBOL         | PARAMETER                                    | CONDITIONS  | MIN. | TYP. | MAX. | UNIT |
|----------------|--|-------------|------|------|------|------|
| $R_{th\ j-mb}$ | Thermal resistance junction to mounting base | per diode   | -    | -    | 5    | K/W  |
|                |  | both diodes | -    | -    | 4    | K/W  |
| $R_{th\ j-a}$  | Thermal resistance junction to ambient       | in free air | -    | 100  | -    | K/W  |

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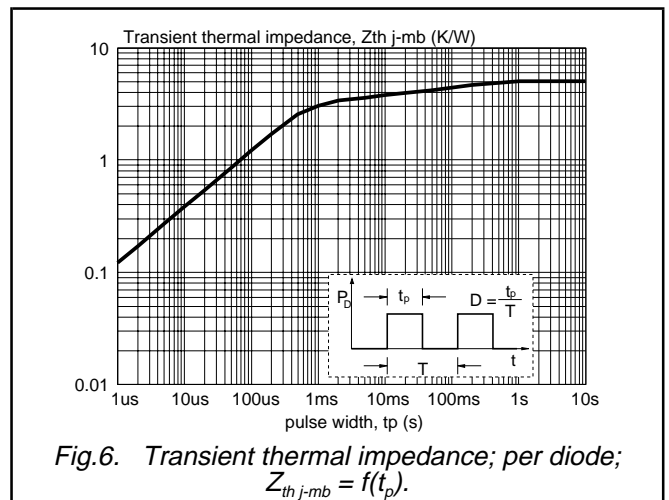
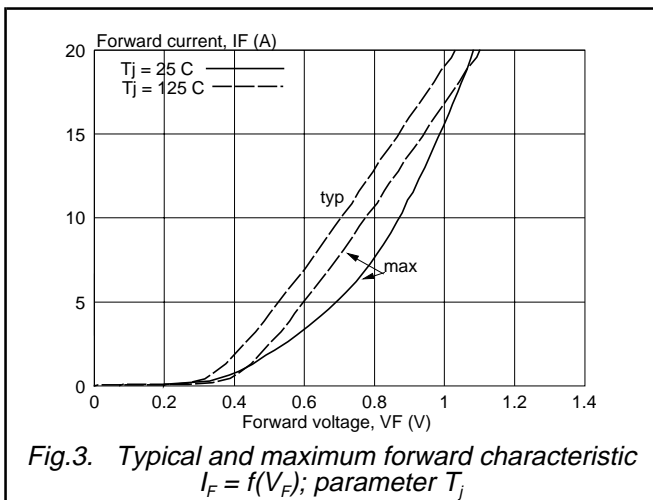
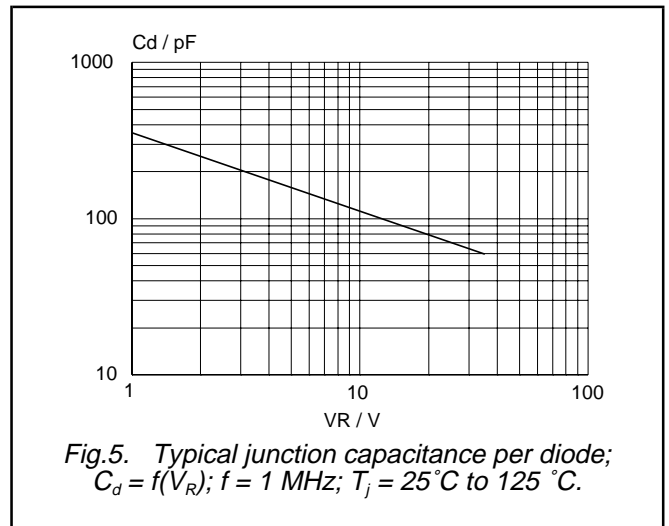
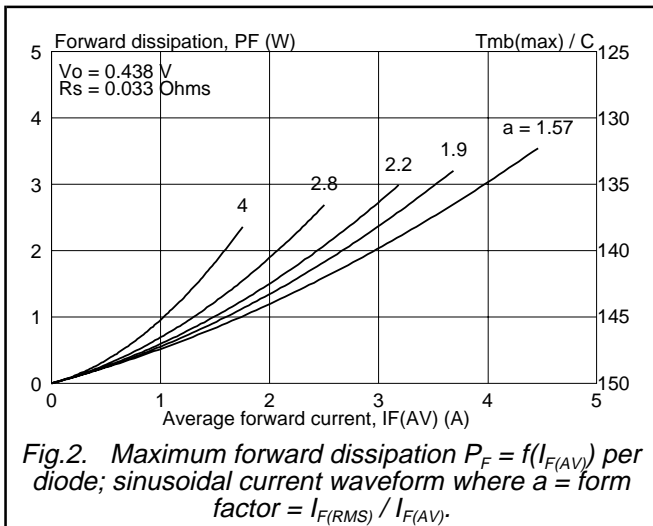
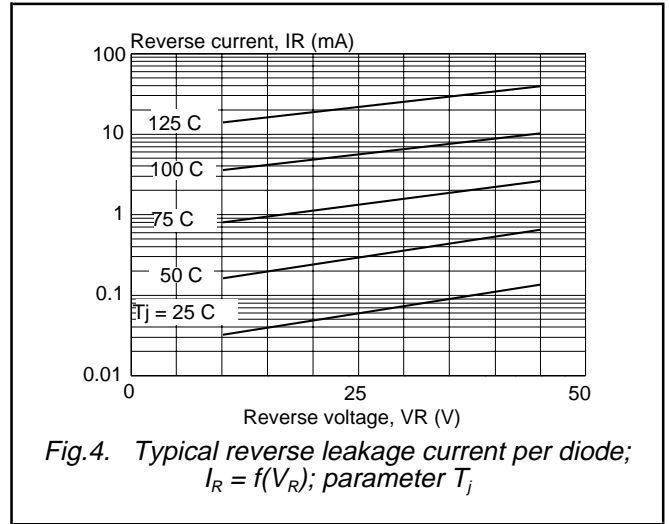
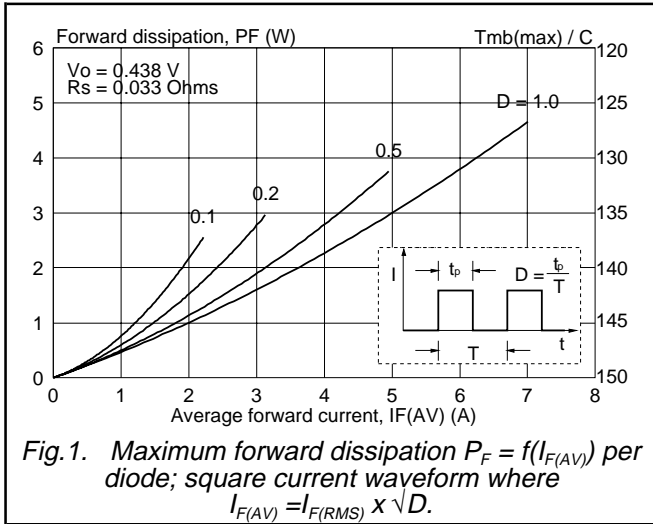
## ELECTRICAL CHARACTERISTICS

$T_j = 25\text{ °C}$  unless otherwise specified

| SYMBOL | PARAMETER            | CONDITIONS  | MIN. | TYP. | MAX. | UNIT |
|--------|----------------------|---|------|------|------|------|
| $V_F$  | Forward voltage      | $I_F = 5\text{ A}; T_j = 125\text{ °C}$                                   | -    | 0.51 | 0.6  | V    |
|        |                      | $I_F = 10\text{ A}$   | -    | 0.72 | 0.87 | V    |
| $I_R$  | Reverse current      | $V_R = V_{RWM}$   | -    | 0.12 | 0.5  | mA   |
|        |                      | $V_R = V_{RWM}; T_j = 100\text{ °C}$                                      | -    | 10   | 15   | mA   |
| $C_d$  | Junction capacitance | $V_R = 5\text{ V}; f = 1\text{ MHz}; T_j = 25\text{ °C to }125\text{ °C}$ | -    | 150  | -    | pF   |

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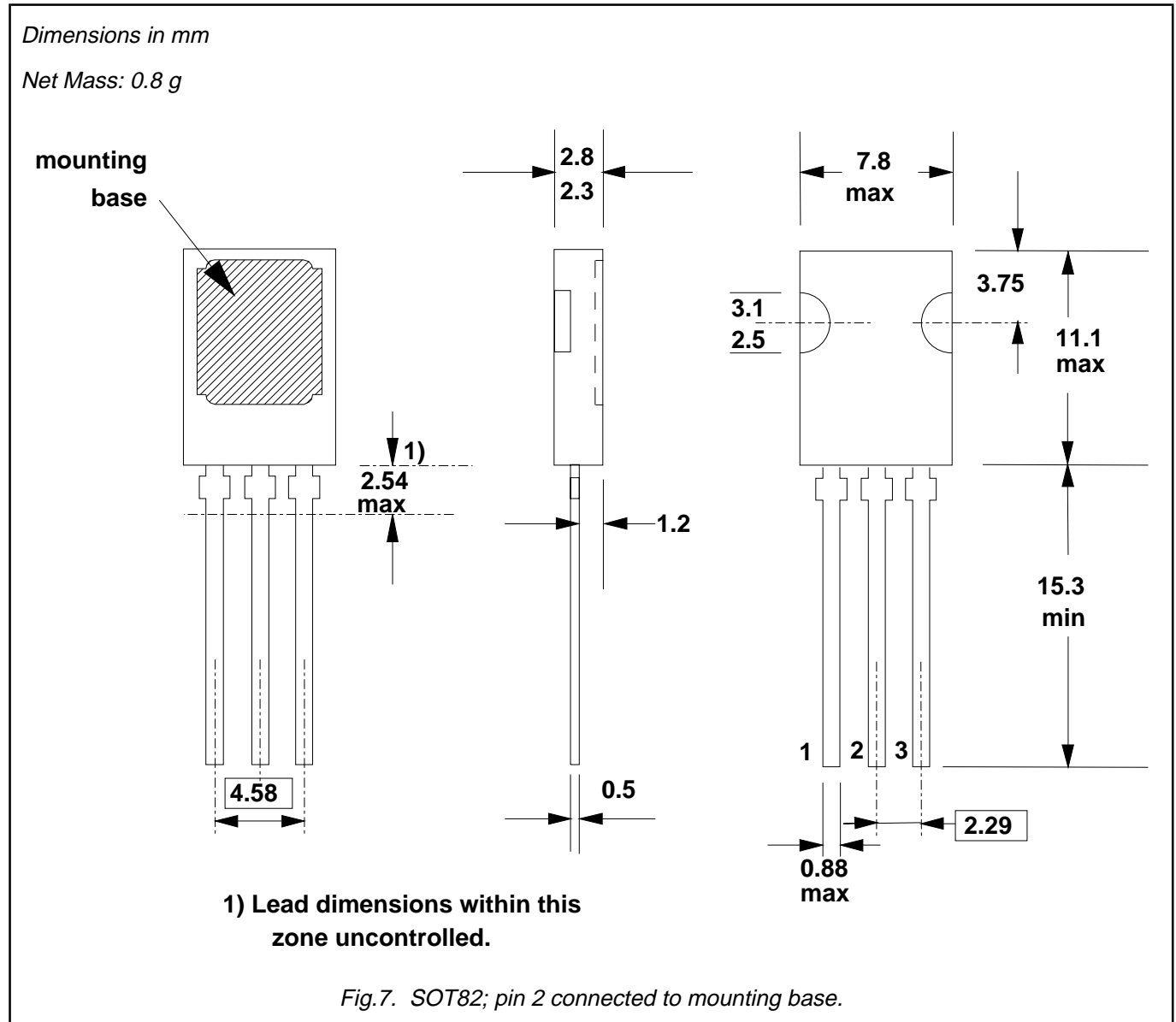
PBYR645CT series



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**MECHANICAL DATA**



**Notes**

1. Refer to mounting instructions for SOT82 envelopes.
2. 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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