

**Rectifier diodes
schottky barrier**

PBYR2545CTB series

GENERAL DESCRIPTION

Dual low leakage, platinum barrier, schottky rectifier diodes in a plastic envelope suitable for surface mounting, featuring low forward voltage drop, absence of stored charge, and guaranteed reverse surge capability. The devices are intended for use in switched mode power supplies and high frequency circuits in general where low conduction and zero switching losses are important.

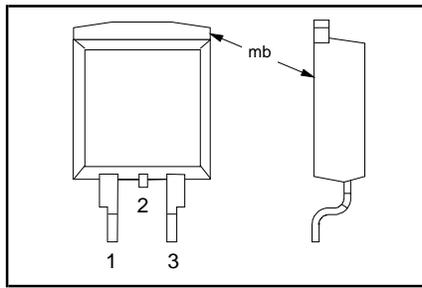
QUICK REFERENCE DATA

| SYMBOL | PARAMETER | MAX. | MAX. | MAX. | UNIT |
|-------------|---|-------|-------|-------|------|
| | | 35CTB | 40CTB | 45CTB | |
| V_{RRM} | Repetitive peak reverse voltage | 35 | 40 | 45 | V |
| V_F | Forward voltage | 0.62 | 0.62 | 0.62 | V |
| $I_{O(AV)}$ | Average output current (both diodes conducting) | 30 | 30 | 30 | A |

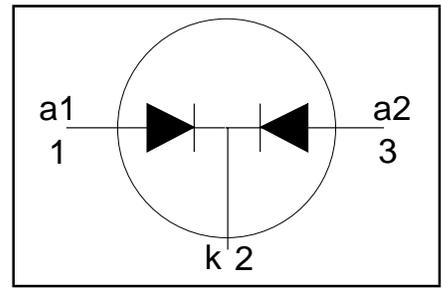
PINNING - SOT404

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

PIN CONFIGURATION



SYMBOL



LIMITING VALUES

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

| SYMBOL | PARAMETER | CONDITIONS | MIN. | MAX. | | | UNIT |
|--------------|---|--|------|------|-----|-----|----------------------|
| | | | | -35 | -40 | -45 | |
| V_{RRM} | Repetitive peak reverse voltage | $T_{mb} \leq 136\text{ }^\circ\text{C}$ | - | 35 | 40 | 45 | V |
| V_{RWM} | Crest working reverse voltage | | - | 60 | 80 | 100 | V |
| V_R | Continuous reverse voltage | | - | 35 | 40 | 45 | V |
| $I_{O(AV)}$ | Average output current (both diodes conducting) | square wave; $\delta = 0.5$; $T_{mb} \leq 130\text{ }^\circ\text{C}$ | - | 30 | | | A |
| $I_{O(RMS)}$ | RMS output current (both diodes conducting) | | - | 43 | | | A |
| I_{FRM} | Repetitive peak forward current per diode | $t = 25\text{ }\mu\text{s}$; $\delta = 0.5$; $T_{mb} \leq 130\text{ }^\circ\text{C}$ | - | 30 | | | A |
| I_{FSM} | Non-repetitive peak forward current, per diode | $t = 10\text{ ms}$ $t = 8.3\text{ ms}$ sinusoidal $T_j = 125\text{ }^\circ\text{C}$ prior to surge; with reapplied | - | 135 | | | A |
| | | | - | 150 | | | A |
| I^2t | I^2t for fusing | $V_{RRM(max)}$ $t = 10\text{ ms}$ | - | 91 | | | A^2s |
| I_{RRM} | Repetitive peak reverse current per diode. | $t_p = 2\text{ }\mu\text{s}$; $\delta = 0.001$ | - | 1 | | | A |
| I_{RSM} | Non-repetitive peak reverse current per diode. | $t_p = 100\text{ }\mu\text{s}$ | - | 1 | | | A |
| T_{stg} | Storage temperature | | -65 | 175 | | | $^\circ\text{C}$ |
| T_j | Operating junction temperature | | - | 150 | | | $^\circ\text{C}$ |

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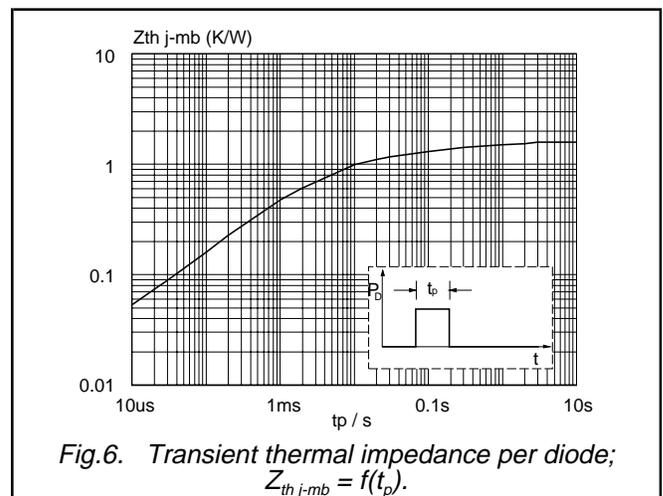
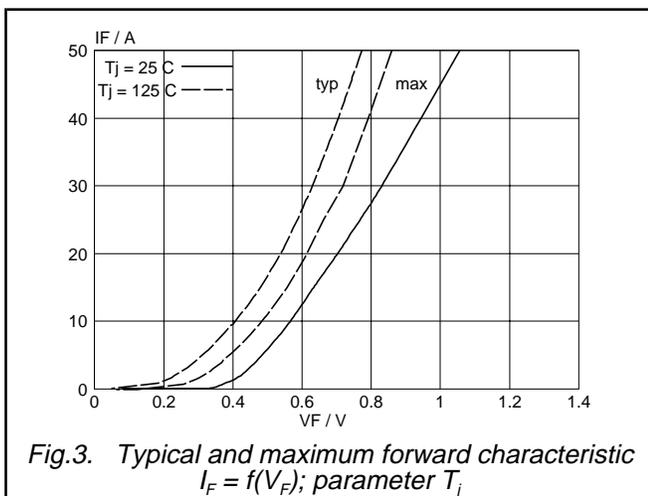
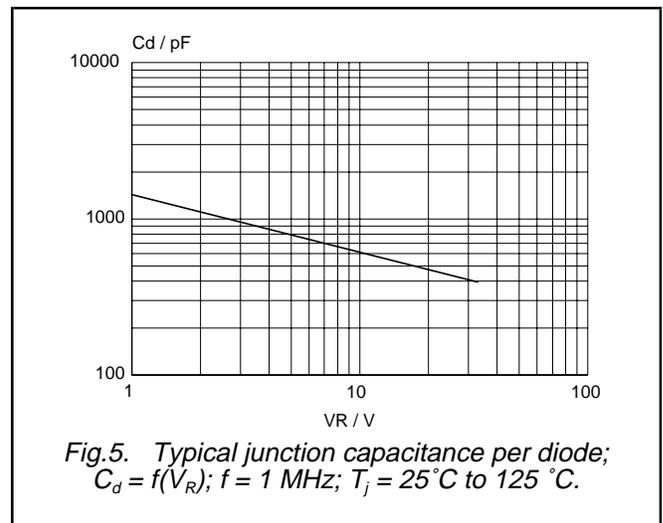
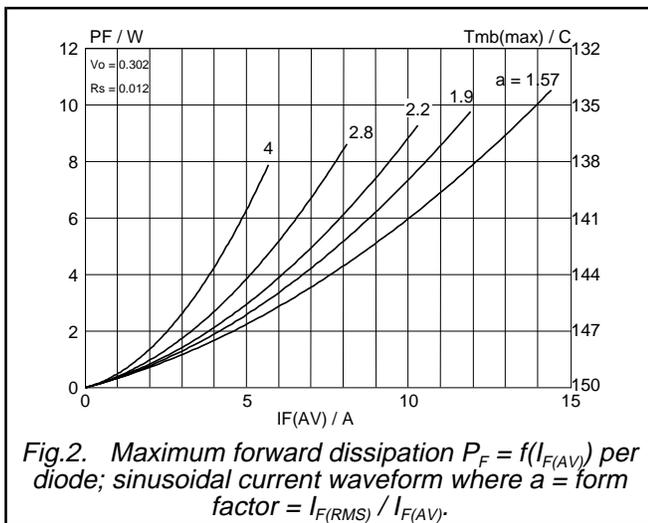
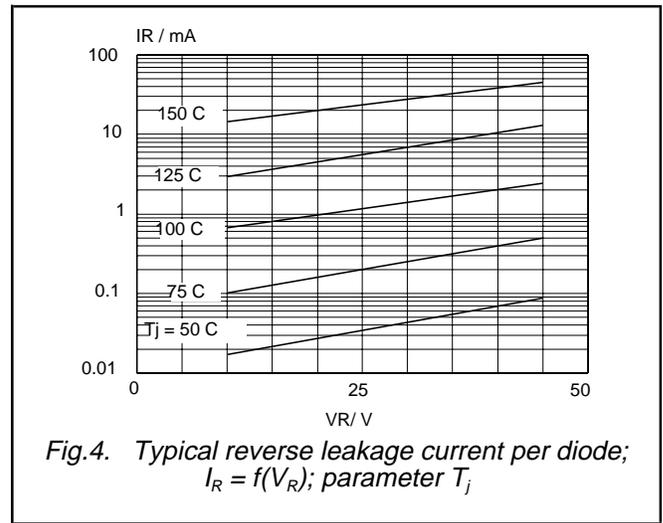
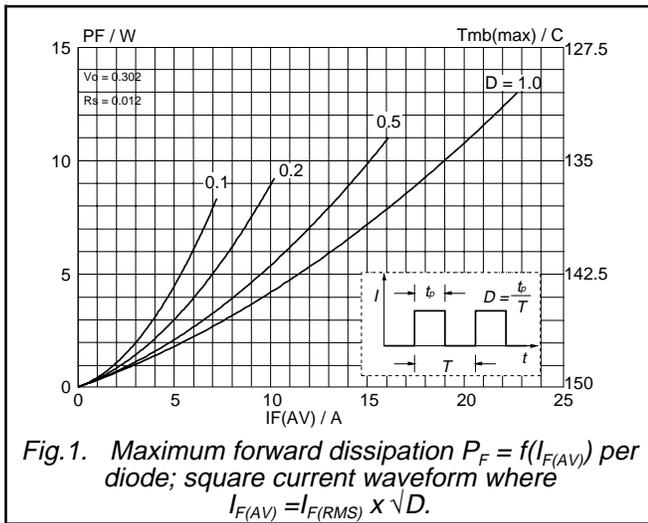
| SYMBOL | PARAMETER | CONDITIONS | MIN. | TYP. | MAX. | UNIT |
|----------------|--|------------------------------|------|------|------|------|
| $R_{th\ j-mb}$ | Thermal resistance junction to mounting base | per diode | - | - | 1.5 | K/W |
| | | both diodes | - | - | 1.0 | K/W |
| $R_{th\ j-a}$ | Thermal resistance junction to ambient | minumum footprint, FR4 board | - | 50 | - | K/W |

STATIC CHARACTERISTICS $T_j = 25\text{ °C}$ unless otherwise stated

| SYMBOL | PARAMETER | CONDITIONS | MIN. | TYP. | MAX. | UNIT |
|--------|----------------------------------|--|------|------|------|---------------|
| V_F | Forward voltage (per diode) | $I_F = 30\text{ A}; T_j = 125\text{ °C}$ | - | 0.65 | 0.73 | V |
| | | $I_F = 20\text{ A}; T_j = 125\text{ °C}$ | - | 0.53 | 0.62 | V |
| | | $I_F = 30\text{ A}$ | - | 0.77 | 0.82 | V |
| I_R | Reverse current (per diode) | $V_R = V_{RRM}$ | - | 100 | 200 | μA |
| | | $V_R = V_{RRM}; T_j = 125\text{ °C}$ | - | 12 | 40 | mA |
| C_d | Junction capacitance (per diode) | $f = 1\text{ MHz}; V_R = 5\text{ V}; T_j = 25\text{ °C to } 125\text{ °C}$ | - | 800 | - | pF |

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MECHANICAL DATA

Dimensions in mm

Net Mass: 1.4 g

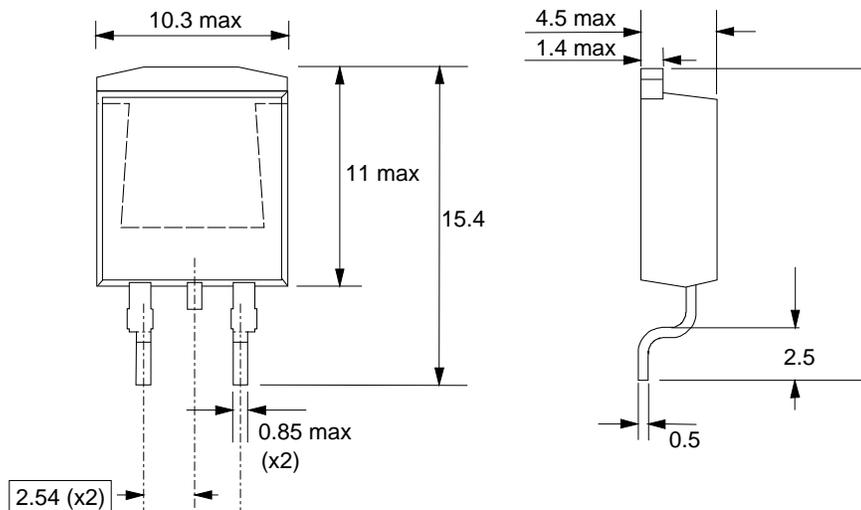


Fig.7. SOT404 : centre pin connected to mounting base.

Notes

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

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PBYR2545CTB series**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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