

Schottky Dual Diode

PBYR6045WT

45V / 60A

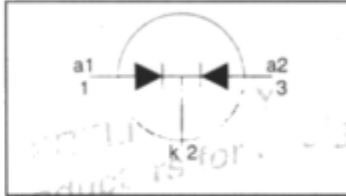
DATASHEET

OEM – Philips

Source: Philips Databook 1999

**Rectifier diodes
Schottky barrier**
PBYR6045WT series
FEATURES

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

SYMBOL

QUICK REFERENCE DATA

$$V_R = 40 \text{ V} / 45 \text{ V}$$

$$I_{F(AV)} = 60 \text{ A}$$

$$V_F \leq 0.6 \text{ V}$$

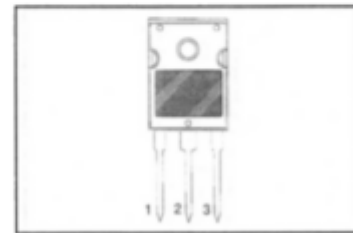
GENERAL DESCRIPTION

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 PBYR6045WT series is supplied in the conventional leaded SOT429 (TO247) package.

PINNING

| PIN | DESCRIPTION |
|-----|-------------|
| 1 | anode 1 (a) |
| 2 | cathode (k) |
| 3 | anode 2 (a) |
| tab | cathode |

SOT429 (TO247)

LIMITING VALUES

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

| SYMBOL | PARAMETER | CONDITIONS | MIN. | MAX. | | UNIT |
|-------------|---|--|------|------|------|------------------|
| | | | | 40WT | 45WT | |
| V_{RRM} | Peak repetitive reverse voltage | PBYR60 | - | 40 | 45 | V |
| V_{RWM} | Working peak reverse voltage | | - | 40 | 45 | V |
| V_R | Continuous reverse voltage | $T_{mb} \leq 109 \text{ }^\circ\text{C}$ | - | 40 | 45 | V |
| $I_{O(AV)}$ | Average rectified output current (both diodes conducting) | square wave; $\delta = 0.5$; $T_{mb} \leq 111 \text{ }^\circ\text{C}$ | - | 60 | | A |
| I_{FRM} | Repetitive peak forward current per diode | square wave; $\delta = 0.5$; $T_{mb} \leq 111 \text{ }^\circ\text{C}$ | - | 60 | | 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 $V_{FRM(max)}$ pulse width and repetition rate limited by $T_{j,max}$ | - | 350 | 384 | A |
| I_{RRM} | Peak repetitive reverse surge current per diode | | - | 2 | | 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 | per diode | - | - | 1.6 | K/W |
| $R_{th(j-a)}$ | Thermal resistance junction to ambient | both diodes in free air | - | 45 | 1.4 | K/W |

Rectifier diodes
Schottky barrier

PBYR6045WT series

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

| SYMBOL | PARAMETER | CONDITIONS | MIN. | TYP. | MAX. | UNIT |
|--------|---------------------------|--|------|------|------|------|
| V_F | Forward voltage per diode | $I_F = 30\text{ A}; T_j = 125\text{ }^\circ\text{C}$ | - | 0.5 | 0.6 | V |
| | | $I_F = 60\text{ A}; T_j = 125\text{ }^\circ\text{C}$ | - | 0.72 | 0.75 | V |
| | | $I_F = 30\text{ A}$ | - | 0.55 | 0.7 | V |
| | | $I_F = 60\text{ A}$ | - | 0.77 | 0.8 | V |
| I_R | Reverse current per diode | $V_R = V_{RWM}$ | - | 0.5 | 5 | mA |
| | | $V_R = V_{RWM}; T_j = 100\text{ }^\circ\text{C}$ | - | 35 | 60 | mA |
| C_d | Junction capacitance | $V_R = 5\text{ V}; f = 1\text{ MHz}; T_j = 25\text{ }^\circ\text{C to } 125\text{ }^\circ\text{C}$ | - | 1000 | - | pF |