

# Schottky Dual Diode

## **PBYR3045WT**

45V / 30A

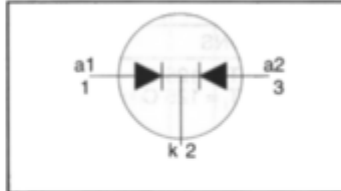
# DATASHEET

OEM – Philips

Source: Philips Databook 1999

**Rectifier diodes  
Schottky barrier**
**PBYR3045WT series**
**FEATURES**

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

**SYMBOL**

**QUICK REFERENCE DATA**

$V_R = 40\text{ V} / 45\text{ V}$
$I_{O(AV)} = 30\text{ A}$
$I_{FSM} = 300\text{ A}$
$V_F \leq 0.6\text{ V}$

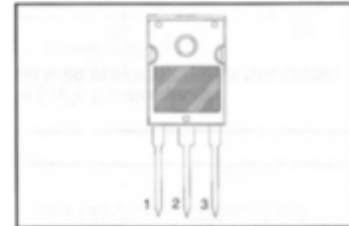
**GENERAL DESCRIPTION**

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 PBYR3045WT 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
				PBYR30	40WT	
$V_{RRM}$	Peak repetitive reverse voltage		-	40	45	V
$V_{RWM}$	Working peak reverse voltage		-	40	45	V
$V_R$	Continuous reverse voltage	$T_{mb} \leq 107\text{ }^\circ\text{C}$	-	40	45	V
$I_{O(AV)}$	Average rectified output current (both diodes conducting)	square wave; $\delta = 0.5$ ; $T_{mb} \leq 124\text{ }^\circ\text{C}$	-	30		A
$I_{FRM}$	Repetitive peak forward current per diode	square wave; $\delta = 0.5$ ; $T_{mb} \leq 124\text{ }^\circ\text{C}$	-	30		A
$I_{FSM}$	Non-repetitive peak forward current per diode	$t = 10\text{ ms}$	-	300		A
		$t = 8.3\text{ ms}$	-	330		A
$I_{RRM}$	Peak repetitive reverse surge current per diode	sinusoidal; $T_j = 125\text{ }^\circ\text{C}$ prior to surge; with reapplied $V_{RRM(max)}$ pulse width and repetition rate limited by $T_{jmax}$	-	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	1.2	K/W

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**ELECTRICAL CHARACTERISTICS**characteristics are per diode at  $T_j = 25\text{ }^\circ\text{C}$  unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
$V_f$	Forward voltage per diode	$I_f = 20\text{ A}; T_j = 125\text{ }^\circ\text{C}$	-	0.58	0.6	V
		$I_f = 30\text{ A}; T_j = 125\text{ }^\circ\text{C}$	-	0.69	0.72	V
		$I_f = 30\text{ A}$	-	0.71	0.76	V
$I_R$	Reverse current per diode	$V_R = V_{RWM}$	-	0.12	1.5	mA
		$V_R = V_{RWM}; T_j = 100\text{ }^\circ\text{C}$	-	15	30	mA
$C_d$	Junction capacitance	$V_R = 5\text{ V}; f = 1\text{ MHz}; T_j = 25\text{ }^\circ\text{C to } 125\text{ }^\circ\text{C}$	-	450	-	pF

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