

# Schottky Dual Diode

## **PBYR4040WT**

40V / 40A

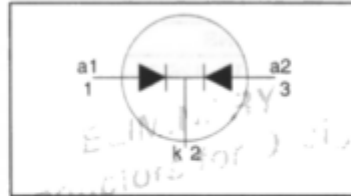
# DATASHEET

OEM – Philips

Source: Philips Databook 1999

**Rectifier diodes**  
**Schottky barrier**
**PBYR4045WT series**
**FEATURES**

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

**SYMBOL**

**QUICK REFERENCE DATA**

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

$$I_{F(AV)} = 40 \text{ A}$$

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

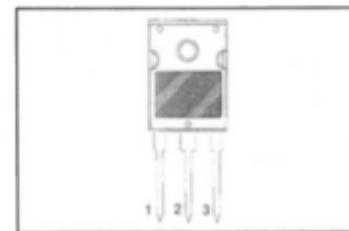
**GENERAL DESCRIPTION**

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 PBYR4045WT 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	PB4YR40 $T_{mb} \leq 109 \text{ }^\circ\text{C}$	-	40	45	V
$V_{RWM}$	Working peak reverse voltage		-	40	45	V
$V_R$	Continuous reverse voltage		-	40	45	V
$I_{F(AV)}$	Average rectified forward current	square wave; $\delta = 0.5$ ; $T_{mb} \leq 125 \text{ }^\circ\text{C}$	-	40		A
$I_{FRM}$	Repetitive peak forward current	square wave; $\delta = 0.5$ ; $T_{mb} \leq 125 \text{ }^\circ\text{C}$	-	40		A
$I_{FSM}$	Non-repetitive peak forward current	$t = 10 \text{ ms}$	-	180		A
		$t = 8.3 \text{ ms}$	-	200		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 $T_{j,max}$	-	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	K/W
$R_{th(j-a)}$	Thermal resistance junction to ambient	both diodes	-	-	0.85	K/W
		in free air	-	45	-	K/W

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 Rectifier diodes  
 Schottky barrier
 

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PBYR4045WT series

**ELECTRICAL CHARACTERISTICS**

T = 25 °C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
$V_F$	Forward voltage per diode	$I_F = 20 \text{ A}; T_J = 125^\circ\text{C}$	-	0.57	0.6	V
		$I_F = 40 \text{ A}; T_J = 125^\circ\text{C}$	-	0.72	0.75	V
		$I_F = 20 \text{ A}$	-	0.67	0.7	V
		$I_F = 40 \text{ A}$	-	0.77	0.8	V
$I_R$	Reverse current per diode	$V_R = V_{RWM}$	-	0.5	2	mA
		$V_R = V_{RWM}; T_J = 100^\circ\text{C}$	-	12	50	mA
$C_j$	Junction capacitance	$V_R = 5 \text{ V}; f = 1 \text{ MHz}; T_J = 25^\circ\text{C to } 125^\circ\text{C}$	-	1000	-	pF