

Schottky Dual Diode

PBYR4045WT

45V / 40A

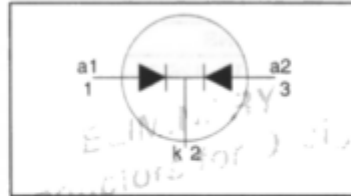
DATASHEET

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

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

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

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

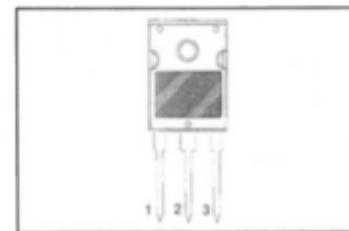
GENERAL DESCRIPTION

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
				PBYR40	40WT	
V_{RRM}	Peak repetitive reverse voltage		-	40	45	V
V_{RWM}	Working peak reverse voltage		-	40	45	V
V_R	Continuous reverse voltage	$T_{mb} \leq 109 \text{ }^\circ\text{C}$	-	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
		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
I_{RRM}	Peak repetitive reverse surge current		-	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
		both diodes	-	-	0.85	K/W
$R_{th(j-a)}$	Thermal resistance junction to ambient	in free air	-	45	-	K/W

Rectifier diodes
Schottky barrier

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