

Schottky Dual Diode

PBYR3040WT

40V / 30A

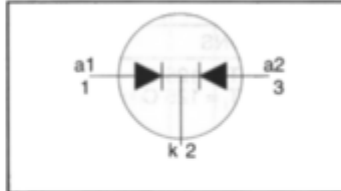
DATASHEET

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

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

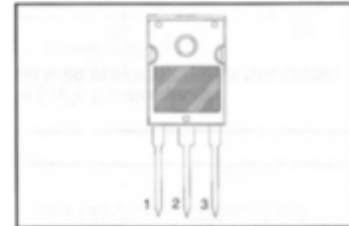
GENERAL DESCRIPTION

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	-	-	1.2	K/W
		in free air	-	45	-	K/W

 Rectifier diodes
 Schottky barrier

PBYR3045WT series

ELECTRICAL CHARACTERISTICScharacteristics 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

Rectifier diodes
Schottky barrier

PBYR3045WT series

