

Schottky Dual Diode

PBYR645CTD

45V / 6A

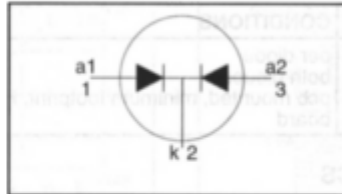
DATASHEET

OEM – Philips

Source: Philips Databook 1999

**Rectifier diodes
Schottky barrier**
PBYR645CTD series
FEATURES

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

SYMBOL

QUICK REFERENCE DATA

$V_R = 40 \text{ V} / 45 \text{ V}$
$I_{O(AV)} = 6 \text{ A}$
$V_F \leq 0.6 \text{ V}$

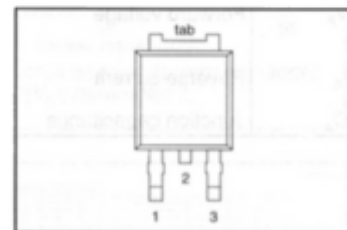
GENERAL DESCRIPTION

Dual schottky rectifier diodes intended for use as output rectifiers in low voltage, high frequency switched mode power supplies.

The PBYR645CTD series is supplied in the SOT428 surface mounting package.

PINNING

PIN	DESCRIPTION
1	anode 1
2	cathode ¹
3	anode 2
tab	cathode

SOT428

LIMITING VALUES

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.		UNIT
				40CTD	45CTD	
V_{RRM}	Peak repetitive reverse voltage	PBYR6 $T_{mb} \leq 113 \text{ }^\circ\text{C}$	-	40	45	V
V_{RWM}	Working peak reverse voltage		-	40	45	V
V_R	Continuous reverse voltage		-	40	45	V
$I_{O(AV)}$	Average rectified output current (both diodes conducting)	square wave; $\delta = 0.5$; $T_{mb} \leq 134 \text{ }^\circ\text{C}$	-	6		A
I_{FRM}	Repetitive peak forward current per diode	square wave; $\delta = 0.5$; $T_{mb} \leq 134 \text{ }^\circ\text{C}$	-	6		A
I_{FSM}	Non-repetitive peak forward current per diode	$t = 10 \text{ ms}$	-	65		A
		$t = 8.3 \text{ ms}$	-	70		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}	-	1		A
T_j	Operating junction temperature		-	150		$^\circ\text{C}$
T_{stg}	Storage temperature		-65	175		$^\circ\text{C}$

¹ it is not possible to make connection to pin 2 of the SOT428 package

Rectifier diodes
Schottky barrier

PBYR645CTD series

THERMAL RESISTANCES

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
R_{m-j-mb}	Thermal resistance junction to mounting base	per diode	-	-	4	K/W
R_{m-j-a}	Thermal resistance junction to ambient	both diodes pcb mounted, minimum footprint, FR4 board	-	50	3.5	K/W

ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
V_F	Forward voltage	$I_F = 3\text{ A}; T_j = 125^\circ\text{C}$	-	0.55	0.6	V
		$I_F = 6\text{ A}; T_j = 125^\circ\text{C}$	-	0.67	0.72	V
		$I_F = 6\text{ A}$	-	0.77	0.94	V
I_R	Reverse current	$V_R = V_{RWM}$	-	0.1	0.4	mA
		$V_R = V_{RWM}; T_j = 100^\circ\text{C}$	-	5	15	mA
C_g	Junction capacitance	$V_R = 5\text{ V}; f = 1\text{ MHz}; T_j = 25^\circ\text{C to } 125^\circ\text{C}$	-	96	-	pF

Rectifier diodes
Schottky barrier

PBYR645CTD series

