

# Schottky Dual Diode

## **PBYR640CTD**

40V / 6A

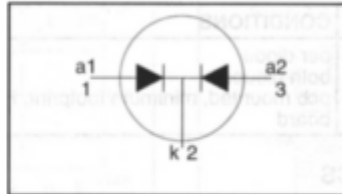
# DATASHEET

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**

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

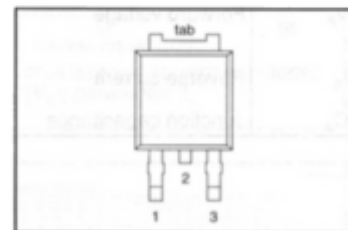
**GENERAL DESCRIPTION**

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 <sup>1</sup>
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	<b>PBYR6</b>	-	40	45	V
$V_{RWM}$	Working peak reverse voltage		-	40	45	V
$V_R$	Continuous reverse voltage		$T_{mb} \leq 113 \text{ }^\circ\text{C}$	-	40	45
$I_{O(AV)}$	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		$^\circ\text{C}$

<sup>1</sup> it is not possible to make connection to pin 2 of the SOT428 package

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### 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

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