

# Schottky Diode

## **PBYL1025B**

25V / 10A

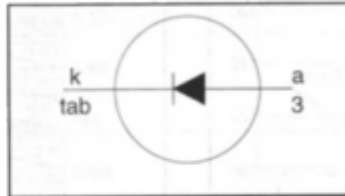
# DATASHEET

OEM – Philips

Source: Philips Databook 1999

**Rectifier diodes  
Schottky barrier**
**PBYL1025B series**
**FEATURES**

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

**SYMBOL**

**QUICK REFERENCE DATA**

$$V_R = 20 \text{ V} / 25 \text{ V}$$

$$I_{F(AV)} = 10 \text{ A}$$

$$V_F \leq 0.4 \text{ V}$$

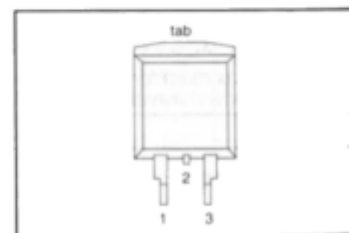
**GENERAL DESCRIPTION**

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

The PBYL1025B series is supplied in the SOT404 surface mounting package.

**PINNING**

PIN	DESCRIPTION
1	no connection
2	cathode <sup>1</sup>
3	anode
tab	cathode

**SOT404**

**LIMITING VALUES**

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.		UNIT
				PBYL10	20B	
$V_{RRM}$	Peak repetitive reverse voltage		-	20	25	V
$V_{RSM}$	Working peak reverse voltage		-	20	25	V
$V_R$	Continuous reverse voltage	$T_{mb} \leq 119 \text{ }^\circ\text{C}$	-	20	25	V
$I_{F(AV)}$	Average rectified forward current	square wave; $\delta = 0.5$ ; $T_{mb} \leq 132 \text{ }^\circ\text{C}$	-	10		A
$I_{FRM}$	Repetitive peak forward current	square wave; $\delta = 0.5$ ; $T_{mb} \leq 132 \text{ }^\circ\text{C}$	-	20		A
$I_{FSM}$	Non-repetitive peak forward current	$t = 10 \text{ ms}$	-	130		A
		$t = 8.3 \text{ ms}$	-	150		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 $T_{jmax}$	-	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
$R_{th,j-mb}$	Thermal resistance junction to mounting base		-	-	3	K/W
$R_{th,j-a}$	Thermal resistance junction to ambient	pcb mounted, minimum footprint, FR4 board	-	50	-	K/W

#### ELECTRICAL CHARACTERISTICS

$T_j = 25^\circ\text{C}$  unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
$V_f$	Forward voltage	$I_f = 10\text{ A}; T_j = 150^\circ\text{C}$	-	0.33	0.4	V
		$I_f = 10\text{ A}; T_j = 125^\circ\text{C}$	-	0.39	0.45	V
		$I_f = 20\text{ A}; T_j = 125^\circ\text{C}$	-	0.54	0.61	V
		$I_f = 20\text{ A}$	-	0.57	0.64	V
$I_R$	Reverse current	$V_R = V_{RWM}$	-	0.2	5	mA
		$V_R = V_{RWM}; T_j = 100^\circ\text{C}$	-	15	30	mA
$C_d$	Junction capacitance	$V_R = 5\text{ V}; f = 1\text{ MHz}; T_j = 25^\circ\text{C to } 125^\circ\text{C}$	-	580	-	pF

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