

Schottky Diode

PBYR1060B

60V / 10A

DATASHEET

OEM – Philips

Source: Philips Databook 1999

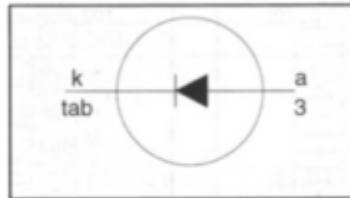
Rectifier diodes Schottky barrier

PBYR10100B series

FEATURES

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

SYMBOL



QUICK REFERENCE DATA

$$V_R = 60 \text{ V} / 80 \text{ V} / 100 \text{ V}$$

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

$$V_F \leq 0.7 \text{ V}$$

GENERAL DESCRIPTION

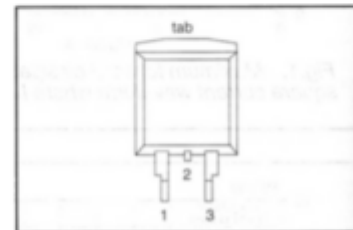
Schottky rectifier diodes in a plastic envelope. Intended for use as output rectifiers in low voltage, high frequency switched mode power supplies.

The PBYR10100B series is supplied in the surface mounting SOT404 package.

PINNING

PIN	DESCRIPTION
1	no connection
2	cathode ¹
3	anode
tab	cathode

SOT404



LIMITING VALUES

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.			UNIT
				60B	80B	100B	
		PBYR10					
V_{RRM}	Peak repetitive reverse voltage		-	60	80	100	V
V_{RWM}	Working peak reverse voltage		-	60	80	100	V
V_R	Continuous reverse voltage	$T_{mb} \leq 139 \text{ }^\circ\text{C}$	-	60	80	100	V
$I_{F(AV)}$	Average rectified forward current	square wave; $\delta = 0.5$; $T_{mb} \leq 133 \text{ }^\circ\text{C}$	-	10			A
I_{FRM}	Repetitive peak forward current	square wave; $\delta = 0.5$; $T_{mb} \leq 133 \text{ }^\circ\text{C}$	-	20			A
I_{FSM}	Non-repetitive peak forward current	$t = 10 \text{ ms}$	-	135			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			$^\circ\text{C}$

¹ It is not possible to make connection to pin 2 of the SOT404 package

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THERMAL RESISTANCES

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
R_{thj-mb}	Thermal resistance junction to mounting base		-	-	2	K/W
R_{thj-a}	Thermal resistance junction to ambient	pcb mounted, minimum footprint, FR4 board	-	50	-	K/W

ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
V_f	Forward voltage	$I_f = 10\text{ A}; T_j = 125\text{ }^\circ\text{C}$ $I_f = 20\text{ A}; T_j = 125\text{ }^\circ\text{C}$	-	0.61 0.74	0.7 0.85	V V
		$I_f = 20\text{ A}$	-	0.88	0.95	V
I_R	Reverse current	$V_R = V_{RWM}$ $V_R = V_{RWM}; T_j = 125\text{ }^\circ\text{C}$	-	5 5	150 15	μA mA
C_j	Junction capacitance	$V_R = 5\text{ V}; f = 1\text{ MHz}; T_j = 25\text{ }^\circ\text{C to } 125\text{ }^\circ\text{C}$	-	420	-	pF

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