

Schottky Diode

PBYL1020

20V / 10A

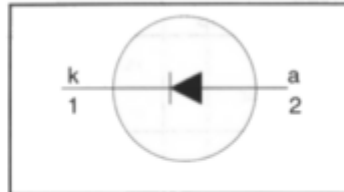
DATASHEET

OEM – Philips

Source: Philips Databook 1999

**Rectifier diodes
Schottky barrier**
PBYL1025 series
FEATURES

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

SYMBOL

QUICK REFERENCE DATA

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

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

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

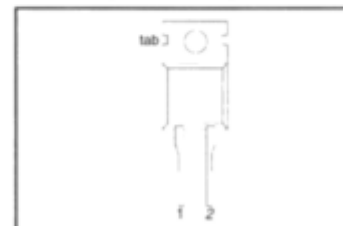
GENERAL DESCRIPTION

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

The PBYL1025 series is supplied in the SOD59 (TO220AC) conventional leaded package.

PINNING

PIN	DESCRIPTION
1	cathode
2	anode
tab	cathode

SOD59 (TO220AC)

LIMITING VALUES

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.		UNIT
				PBYL10		
V_{RRM}	Peak repetitive reverse voltage		-	20	25	V
V_{RWM}	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	$t = 10 \text{ ms}$	-	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 $T_{j,max}$	-	1		A
T_j	Operating junction temperature		-	150		$^\circ\text{C}$
T_{stg}	Storage temperature		-65	175		$^\circ\text{C}$

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THERMAL RESISTANCES

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
R_{thj-mb}	Thermal resistance junction to mounting base	in free air	-	-	3	K/W
R_{thj-a}	Thermal resistance junction to ambient		-	60	-	K/W

ELECTRICAL CHARACTERISTICS

T = 25 °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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