

Schottky Diode

PBYR1080

80V / 10A

DATASHEET

OEM – Philips

Source: Philips Databook 1999

Rectifier diodes Schottky barrier

PBYR10100 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

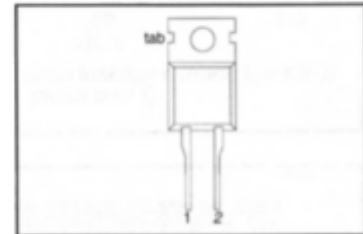
Schottky rectifier diodes in a plastic envelope. Intended for use as output rectifiers in low voltage, high frequency switched mode power supplies.

The PBYR10100 series is supplied in the conventional leaded SOD59 (TO220AC) 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
				60	80	100	
V_{RRM}	Peak repetitive reverse voltage	PBYR10 $T_{mb} \leq 139 \text{ }^\circ\text{C}$	-	60	80	100	V
V_{RWM}	Working peak reverse voltage		-	60	80	100	V
V_R	Continuous reverse voltage		-	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
		$t = 8.3 \text{ ms}$ 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}	-	150			A
I_{VRM}	Peak repetitive reverse surge current		-	1			A
T_j	Operating junction temperature		-	150			$^\circ\text{C}$
T_{stg}	Storage temperature		-65	175			$^\circ\text{C}$

THERMAL RESISTANCES

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
$R_{th(j-mb)}$	Thermal resistance junction to mounting base		-	-	2	K/W
$R_{th(j-a)}$	Thermal resistance junction to ambient	in free air	-	60	-	K/W

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
V_F	Forward voltage	$I_F = 10\text{ A}; T_j = 125\text{ }^\circ\text{C}$	-	0.61	0.7	V
		$I_F = 20\text{ A}; T_j = 125\text{ }^\circ\text{C}$	-	0.74	0.85	V
		$I_F = 20\text{ A}$	-	0.88	0.95	V
I_R	Reverse current	$V_R = V_{RWM}; T_j = 125\text{ }^\circ\text{C}$	-	5	150	μA
		$V_R = V_{RWM}; T_j = 25\text{ }^\circ\text{C}$	-	5	15	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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