

# Schottky Dual Diode

## **PBYR2080CTB**

80V / 20A

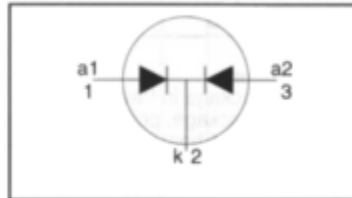
# DATASHEET

OEM – Philips

Source: Philips Databook 1999

**Rectifier diodes  
Schottky barrier**
**PBYR20100CT, PBYR20100CTB series**
**FEATURES**

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

**SYMBOL**

**QUICK REFERENCE DATA**

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

$$I_{O(AV)} = 20 \text{ A}$$

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

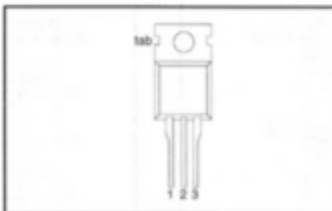
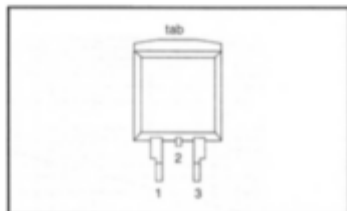
**GENERAL DESCRIPTION**

Dual, common cathode schottky rectifier diodes in a conventional leaded plastic package and a surface mounting plastic package. Intended for use as output rectifiers in low voltage, high frequency switched mode power supplies.

The PBYR20100CT series is supplied in the SOT78 conventional leaded package.  
The PBYR20100CTB series is supplied in the SOT404 surface mounting package.

**PINNING**

PIN	DESCRIPTION
1	anode 1 (a)
2	cathode (k) <sup>1</sup>
3	anode 2 (a)
tab	cathode (k)

**SOT78 (TO220AB)**

**SOT404**

**LIMITING VALUES**

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.			UNIT
				60CT 60CTB	80CT 80CTB	100CT 100CTB	
$V_{RRM}$	Peak repetitive reverse voltage	PBYR20 PBYR20	-	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
$I_{O(AV)}$	Average rectified output current (both diodes conducting)	square wave; $\delta = 0.5$ ; $T_{mb} \leq 133 \text{ }^\circ\text{C}$	-	20			A
$I_{FRM}$	Repetitive peak forward current per diode	square wave; $\delta = 0.5$ ; $T_{mb} \leq 133 \text{ }^\circ\text{C}$	-	20			A
$I_{FSM}$	Non-repetitive peak forward current per diode	$t = 10 \text{ ms}$ $t = 8.3 \text{ ms}$ sinusoidal; $T_j = 125 \text{ }^\circ\text{C}$ prior to surge; with reapplied $V_{RRM(max)}$ pulse width and repetition rate limited by $T_{jmax}$	-	135 150			A A
$I_{RRM}$	Peak repetitive reverse surge current per diode		-	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
$R_{th(j-mb)}$	Thermal resistance junction to mounting base	per diode both diodes	-	-	2	K/W
$R_{th(j-a)}$	Thermal resistance junction to ambient	SOT78 package in free air	-	60	-	K/W
		SOT404 package, pcb mounted, minimum footprint, FR4 board	-	50	-	K/W

#### ELECTRICAL CHARACTERISTICS

All characteristics are per diode at  $T_j = 25\text{ }^\circ\text{C}$  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	$V_R = V_{RWM}$	-	5	150	$\mu\text{A}$
		$V_R = V_{RWM}; T_j = 125\text{ }^\circ\text{C}$	-	5	15	$\text{mA}$
$C_d$	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	-	$\text{pF}$

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