

Schottky Dual Diode

PBYR2540CT

40V / 30A

DATASHEET

OEM – Philips

Source: Philips Databook 1999

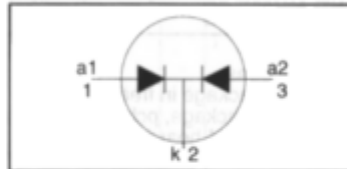
Rectifier diodes Schottky barrier

PBYR2545CT, PBYR2545CTB series

FEATURES

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

SYMBOL



QUICK REFERENCE DATA

$V_R = 40 \text{ V} / 45 \text{ V}$
$I_{O(AV)} = 30 \text{ A}$
$V_F \leq 0.62 \text{ V}$

GENERAL DESCRIPTION

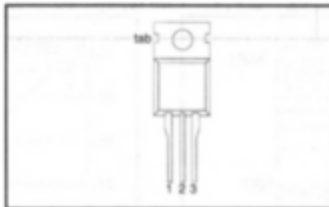
Dual, common cathode schottky rectifier diodes in a conventional leaded plastic package and a surface mounting plastic package. Intended for use as output rectifiers in low voltage, high frequency switched mode power supplies.

The PBYR2545CT series is supplied in the SOT78 conventional leaded package.
The PBYR2545CTB series is supplied in the SOT404 surface mounting package.

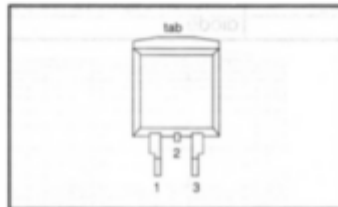
PINNING

PIN	DESCRIPTION
1	anode 1 (a)
2	cathode (k) ¹
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
				40CT 40CTB	45CT 45CTB	
V_{RRM}	Peak repetitive reverse voltage		-	40	45	V
V_{RWM}	Working peak reverse voltage		-	40	45	V
V_R	Continuous reverse voltage	$T_{mb} \leq 113 \text{ }^\circ\text{C}$	-	40	45	V
$I_{O(AV)}$	Average rectified forward current (both diodes conducting) ²	square wave; $\delta = 0.5$; $T_{mb} \leq 126 \text{ }^\circ\text{C}$	-	30		A
I_{FRM}	Repetitive peak forward current per diode	square wave; $\delta = 0.5$; $T_{mb} \leq 126 \text{ }^\circ\text{C}$	-	30		A
I_{FSM}	Non-repetitive peak forward current per diode	$t = 10 \text{ ms}$	-	180		A
		$t = 8.3 \text{ ms}$	-	200		A
I_{FRSM}	Peak repetitive reverse surge current per diode	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.

2. SOT78 package. For output currents greater than 20A the cathode connection should be made to the metal mounting tab.

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THERMAL RESISTANCES

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
R_{thj-mb}	Thermal resistance junction to mounting base	per diode	-	-	1.5	K/W
R_{thj-a}	Thermal resistance junction to ambient	both diodes	-	-	1	K/W
		SOT78 package in free air	-	60	-	K/W
		SOT404 package, 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 per diode	$I_f = 20\text{ A}; T_j = 125\text{ }^\circ\text{C}$	-	0.58	0.62	V
		$I_f = 30\text{ A}; T_j = 125\text{ }^\circ\text{C}$	-	0.72	0.76	V
		$I_f = 30\text{ A}$	-	0.72	0.82	V
I_R	Reverse current per diode	$V_R = V_{RWM}$	-	0.3	2	mA
		$V_R = V_{RWM}; T_j = 100\text{ }^\circ\text{C}$	-	30	40	mA
C_d	Junction capacitance per diode	$V_R = 5\text{ V}; f = 1\text{ MHz}; T_j = 25\text{ }^\circ\text{C to } 125\text{ }^\circ\text{C}$	-	530	-	pF

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