

# Schottky Diode

## **PBYR725D**

25V / 7.5A

# DATASHEET

OEM – Philips

Source: Philips Databook 1999

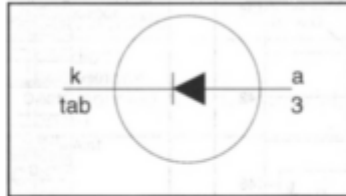
## Rectifier diodes Schottky barrier

## PBYR725D series

### FEATURES

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

### SYMBOL



### QUICK REFERENCE DATA

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

$$I_{F(AV)} = 7.5 \text{ A}$$

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

### GENERAL DESCRIPTION

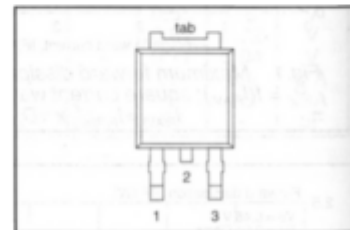
Schottky rectifier diodes intended for use as output rectifiers in low voltage, high frequency switched mode power supplies.

The PBYR725D series is supplied in the SOT428 surface mounting package.

### PINNING

PIN	DESCRIPTION
1	no connection
2	cathode <sup>1</sup>
3	anode
tab	cathode

### SOT428



### LIMITING VALUES

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.		UNIT
				20D	25D	
$V_{RRM}$	Peak repetitive reverse voltage	$T_{mb} \leq 119 \text{ }^\circ\text{C}$	-	20	25	V
$V_{RWM}$	Working peak reverse voltage		-	20	25	V
$V_R$	Continuous reverse voltage		-	20	25	V
$I_{F(AV)}$	Average rectified forward current	square wave; $\delta = 0.5$ ; $T_{mb} \leq 138 \text{ }^\circ\text{C}$	-	7.5		A
$I_{FRM}$	Repetitive peak forward current	square wave; $\delta = 0.5$ ; $T_{mb} \leq 138 \text{ }^\circ\text{C}$	-	15		A
$I_{FSM}$	Non-repetitive peak forward current	$t = 10 \text{ ms}$ $t = 8.3 \text{ ms}$	-	100		A
		sinusoidal; $T_j = 125 \text{ }^\circ\text{C}$ prior to surge; with reapplied $V_{RRM(max)}$ pulse width and repetition rate limited by $T_{jmax}$	-	110		A
$I_{RRM}$	Peak repetitive reverse surge current		-	1		A
$T_j$	Operating junction temperature		-	150		$^\circ\text{C}$
$T_{stg}$	Storage temperature		- 65	175		$^\circ\text{C}$

<sup>1</sup> it is not possible to make connection to pin 2 of the SOT428 package

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#### THERMAL RESISTANCES

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
$R_{th(j-mb)}$	Thermal resistance junction to mounting base		-	-	3	K/W
$R_{th(j-a)}$	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	$I_F = 7.5\text{ A}; T_j = 125\text{ }^\circ\text{C}$	-	0.33	0.4	V
		$I_F = 15\text{ A}; T_j = 125\text{ }^\circ\text{C}$	-	0.45	0.52	V
$I_R$	Reverse current	$I_F = 15\text{ A}$	-	0.52	0.62	V
		$V_R = V_{RWM}$	-	0.2	5	mA
$C_d$	Junction capacitance	$V_R = V_{RWM}; T_j = 100\text{ }^\circ\text{C}$	-	15	30	mA
		$V_R = 5\text{ V}; f = 1\text{ MHz}; T_j = 25\text{ }^\circ\text{C to } 125\text{ }^\circ\text{C}$	-	580	-	pF

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