

Schottky Diode

PBYR740

40V / 7.5A

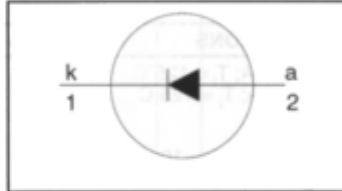
DATASHEET

OEM – Philips

Source: Philips Databook 1999

**Rectifier diodes
Schottky barrier**
PBYR745 series
FEATURES

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

SYMBOL

QUICK REFERENCE DATA

$V_R = 40 \text{ V} / 45 \text{ V}$
$I_{F(AV)} = 7.5 \text{ A}$
$V_F \leq 0.57 \text{ V}$

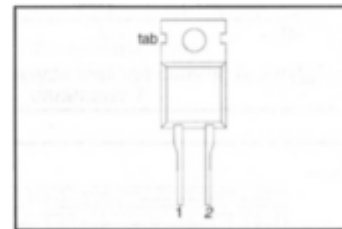
GENERAL DESCRIPTION

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

The PBYR745 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
				PBYR7		
V_{RRM}	Peak repetitive reverse voltage		-	40	45	V
V_{RWM}	Working peak reverse voltage		-	40	45	V
V_R	Continuous reverse voltage	$T_{mb} \leq 114 \text{ }^\circ\text{C}$	-	40	45	V
$I_{F(AV)}$	Average rectified forward current	square wave; $\delta = 0.5$; $T_{mb} \leq 136 \text{ }^\circ\text{C}$	-	7.5		A
I_{FRM}	Repetitive peak forward current	square wave; $\delta = 0.5$; $T_{mb} \leq 136 \text{ }^\circ\text{C}$	-	15		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_{jmax}	-	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		-	-	3	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	$I_f = 7.5\text{ A}; T_j = 125\text{ }^\circ\text{C}$	-	0.45	0.57	V
		$I_f = 15\text{ A}; T_j = 125\text{ }^\circ\text{C}$	-	0.65	0.72	V
		$I_f = 15\text{ A}$	-	0.64	0.84	V
I_R	Reverse current	$V_R = V_{RWM}$	-	0.13	1	mA
		$V_R = V_{RWM}; T_j = 100\text{ }^\circ\text{C}$	-	17	22	mA
C_d	Junction capacitance	$V_R = 5\text{ V}; f = 1\text{ MHz}; T_j = 25\text{ }^\circ\text{C to } 125\text{ }^\circ\text{C}$	-	270	-	pF

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