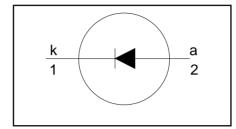
PBYR745 series

FEATURES

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

SYMBOL



QUICK REFERENCE DATA

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

GENERAL DESCRIPTION

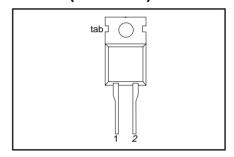
Schottky rectifier diodes in a plastic envelope. Intended for use as output rectifiers in low voltage, high frequency switched mode power supplies.

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		40	45	
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} ≤ 114 °C	-	40	45	V
$I_{F(AV)}$	Average rectified forward current	square wave; $\delta = 0.5$; $T_{mb} \le 136$ °C	-	7	.5	А
I _{FRM}	Repetitive peak forward current	square wave; $\delta = 0.5$; $T_{mb} \le 136$ °C	-	1	5	Α
I _{FSM}	Non-repetitive peak forward current	t = 10 ms t = 8.3 ms sinusoidal; $T_j = 125 ^{\circ}\text{C}$ prior to surge; with reapplied $V_{\text{RRM(max)}}$	-		35 50	A A
I _{RRM}	Peak repetitive reverse surge current	pulse width and repetition rate limited by T _{i max}	-	,	1	А
T_j	Operating junction temperature	Jillax	-	15	50	°C
T_{stg}	Storage temperature		- 65	17	75	°C

THERMAL RESISTANCES

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
R _{th j-mb}	Thermal resistance junction		-	-	3	K/W
R _{th i-a}	to mounting base Thermal resistance junction to ambient	in free air	-	60	-	K/W

PBYR745 series

ELECTRICAL CHARACTERISTICS

 $T_j = 25$ °C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
V_{F}	Forward voltage	I _F = 7.5 A; T _i = 125°C	-	0.45	0.57	V
'		$I_{\rm F} = 15 \text{A}; T_{\rm i} = 125 ^{\circ} \text{C}$	-	0.65	0.72	V
		$I_{\rm F} = 15 {\rm A}^{-1}$	-	0.64	0.84	V
I _R	Reverse current	$V_R = V_{RWM}$	-	0.13	1	mΑ
1		$V_R = V_{RWM}$; $T_i = 100$ °C	-	17	22	mΑ
C _d	Junction capacitance	$V_R = 5 \text{ W}$; f = '1 MHz, $T_j = 25 \text{ °C}$ to 125 °C	-	270	-	pF

PBYR745 series

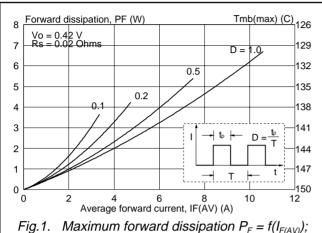


Fig.1. Maximum forward dissipation $P_F = f(I_{F(AV)})$; square current waveform where $I_{F(AV)} = I_{F(RMS)} \times \sqrt{D}$.

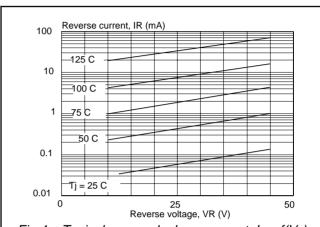


Fig.4. Typical reverse leakage current; $I_R = f(V_R)$; parameter T

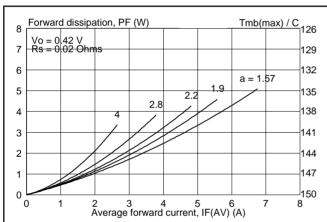
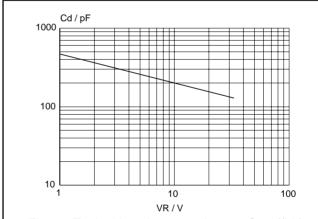


Fig.2. Maximum forward dissipation $P_F = f(I_{F(AV)})$; sinusoidal current waveform where a = f(AV) $factor = I_{F(RMS)} / I_{F(AV)}$.



Typical junction capacitance; $C_d = f(V_R)$; f = 1 MHz; $T_j = 25^{\circ}\text{C}$ to 125°C . Fig.5.

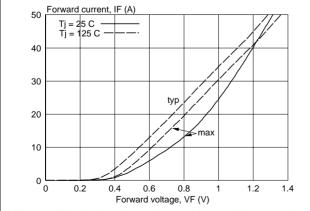
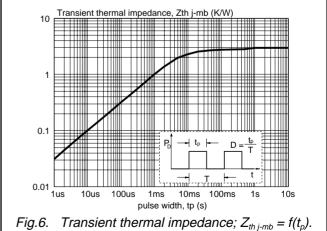
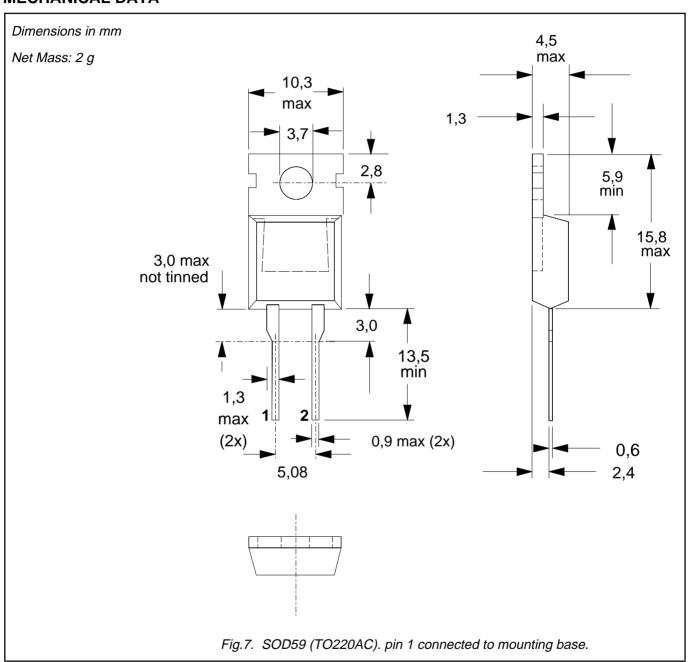


Fig.3. Typical and maximum forward characteristic $I_F = f(V_F)$; parameter T_i



PBYR745 series

MECHANICAL DATA



- Refer to mounting instructions for TO220 envelopes.
 Epoxy meets UL94 V0 at 1/8".

Philips Semiconductors Product specification

PBYR745 series Rectifier diodes Schottky barrier

DEFINITIONS

Data sheet status				
Objective specification	This data sheet contains target or goal specifications for product development.			
Preliminary specification	This data sheet contains preliminary data; supplementary data may be published later.			
Product specification	This data sheet contains final product specifications.			
Limiting values				

Limiting values are given in accordance with the Absolute Maximum Rating System (IEC 134). Stress above one or more of the limiting values may cause permanent damage to the device. These are stress ratings only and operation of the device at these or at any other conditions above those given in the Characteristics sections of this specification is not implied. Exposure to limiting values for extended periods may affect device reliability.

Application information

Where application information is given, it is advisory and does not form part of the specification.

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