

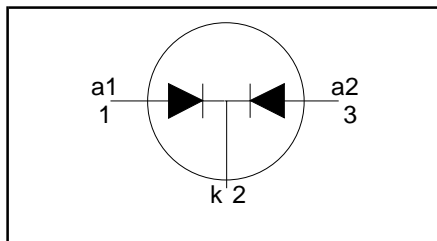
**Rectifier diodes  
Schottky barrier**

**PBYR225CT series**

**FEATURES**

- Low forward volt drop
- Fast switching
- Reverse surge capability
- High thermal cycling performance
- low profile surface mounting package

**SYMBOL**



**QUICK REFERENCE DATA**

$V_R = 20\text{ V} / 25\text{ V}$
$I_{O(AV)} = 2\text{ A}$
$V_F \leq 0.33\text{ V}$

**GENERAL DESCRIPTION**

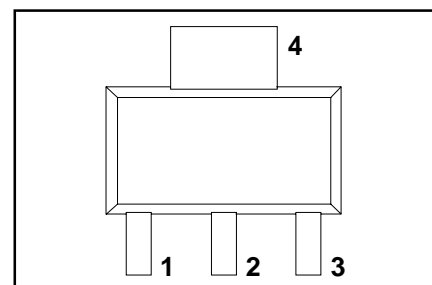
Dual, common cathode schottky rectifier diodes in a plastic envelope. Intended for use as output rectifiers in low voltage, high frequency switched mode power supplies.

The PBYR225CT series is supplied in the surface mounting SOT223 package.

**PINNING**

PIN	DESCRIPTION
1	anode 1
2	cathode
3	anode 2
tab	cathode

**SOT223**



**LIMITING VALUES**

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.		UNIT
				20CT	25CT	
$V_{RRM}$	Peak repetitive reverse voltage	PBYR2 $T_{sp} \leq 97\text{ }^\circ\text{C}$	-	20	25	V
$V_{RWM}$	Working peak reverse voltage		-	20	25	V
$V_R$	Continuous reverse voltage		-	20	25	V
$I_{O(AV)}$	Average rectified output current (both diodes conducting)	square wave; $\delta = 0.5$ ; $T_{sp} \leq 136\text{ }^\circ\text{C}$	-	2		A
$I_{FRM}$	Repetitive peak forward current per diode	square wave; $\delta = 0.5$ ; $T_{sp} \leq 136\text{ }^\circ\text{C}$	-	2		A
$I_{FSM}$	Non-repetitive peak forward current per diode	$t = 10\text{ ms}$	-	6		A
		$t = 8.3\text{ ms}$ sinusoidal; $T_j = 125\text{ }^\circ\text{C}$ prior to surge; with reapplied $V_{RRM(max)}$ pulse width and repetition rate limited by $T_{jmax}$	-	6.6		A
$I_{RRM}$	Peak repetitive reverse surge current per diode	-	-	1		A
$T_j$	Operating junction temperature per diode	-	-	150		$^\circ\text{C}$
$T_{stg}$	Storage temperature	-	-40	150		$^\circ\text{C}$

**THERMAL RESISTANCES**

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
$R_{th\ j-sp}$	Thermal resistance junction to solder point	one or both diodes conducting	-	-	15	K/W
$R_{th\ j-a}$	Thermal resistance junction to ambient	pcb mounted, minimum footprint	-	156	-	K/W
		pcb mounted, pad area as in fig:1	-	70	-	K/W

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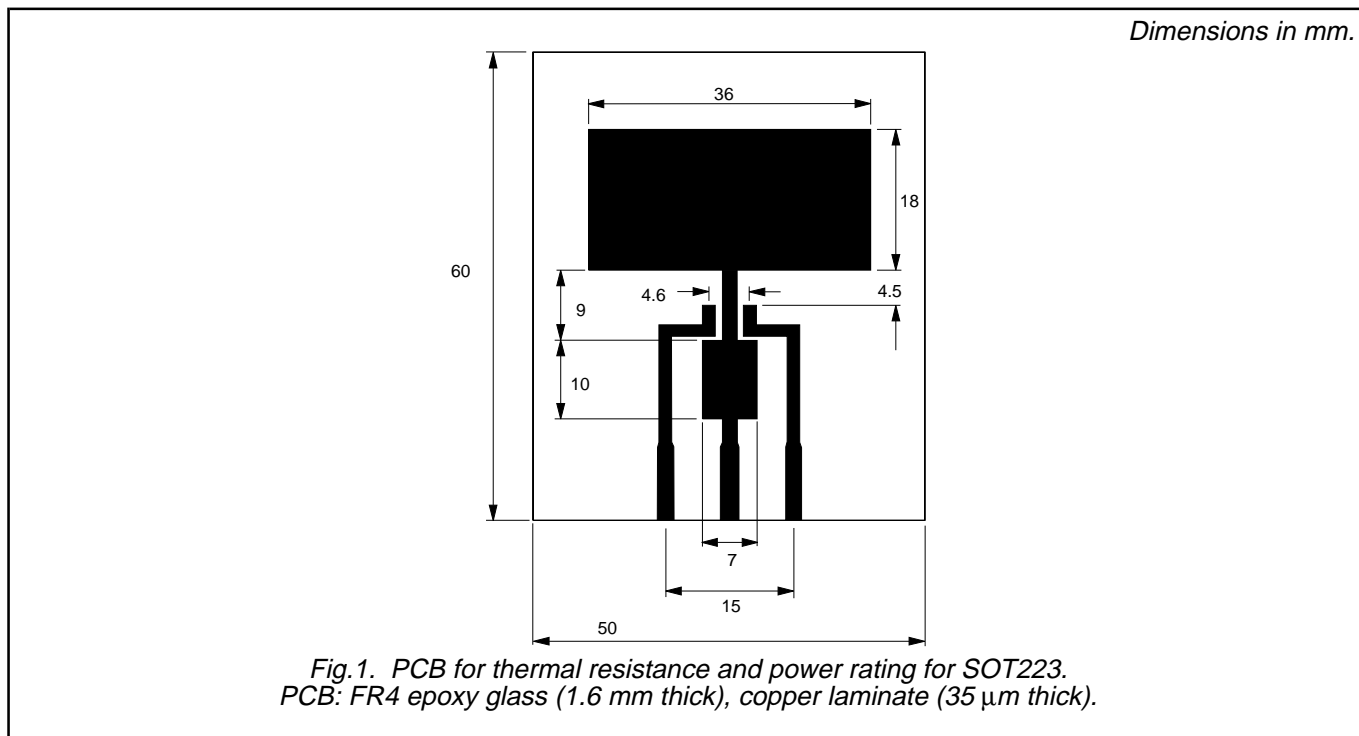
PBYR225CT series

**ELECTRICAL CHARACTERISTICS**

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	$I_F = 1\text{ A}; T_j = 125\text{ }^\circ\text{C}$	-	0.28	0.33	V
		$I_F = 2\text{ A}$	-	0.42	0.51	V
$I_R$	Reverse current	$V_R = V_{RWM}$	-	0.05	3	mA
		$V_R = V_{RWM}; T_j = 100\text{ }^\circ\text{C}$	-	5	10	mA
$C_d$	Junction capacitance	$V_R = 5\text{ V}; f = 1\text{ MHz}; T_j = 25\text{ }^\circ\text{C to } 125\text{ }^\circ\text{C}$	-	160	-	pF

**PRINTED CIRCUIT BOARD**



Rectifier diodes  
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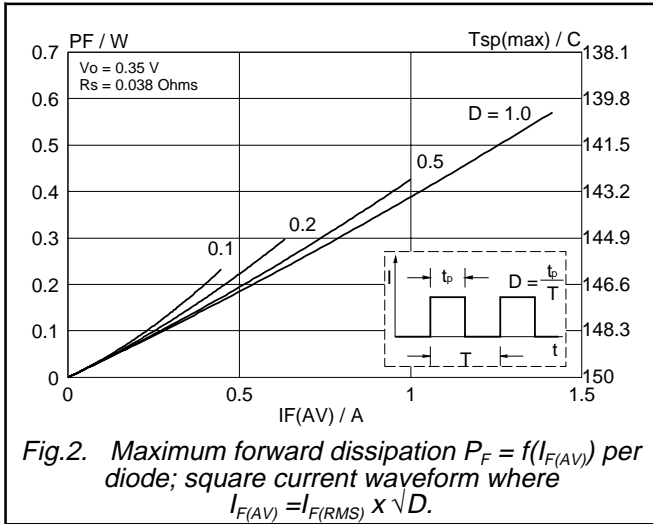


Fig.2. Maximum forward dissipation  $P_F = f(I_{F(AV)})$  per diode; square current waveform where  $I_{F(AV)} = I_{F(RMS)} \times \sqrt{D}$ .

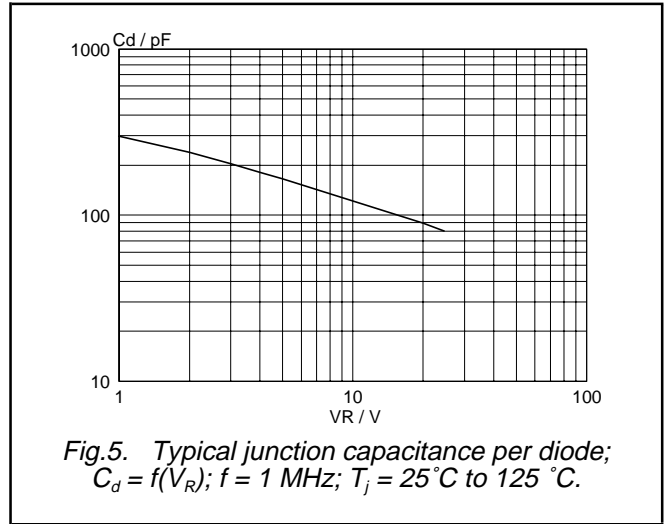


Fig.5. Typical junction capacitance per diode;  $C_d = f(V_R)$ ;  $f = 1$  MHz;  $T_j = 25^\circ\text{C}$  to  $125^\circ\text{C}$ .

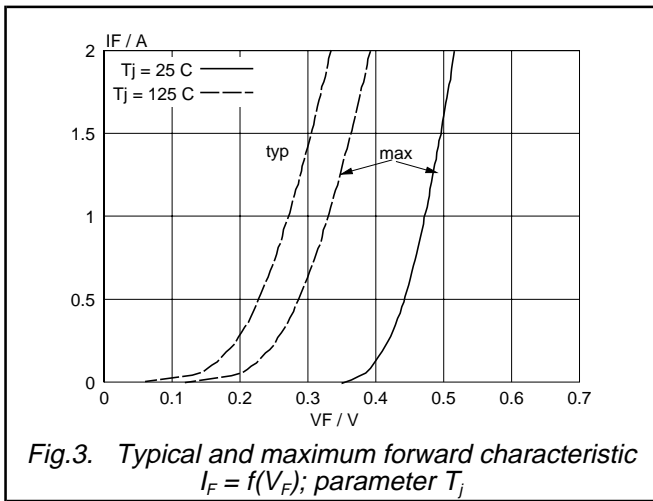


Fig.3. Typical and maximum forward characteristic  $I_F = f(V_F)$ ; parameter  $T_j$

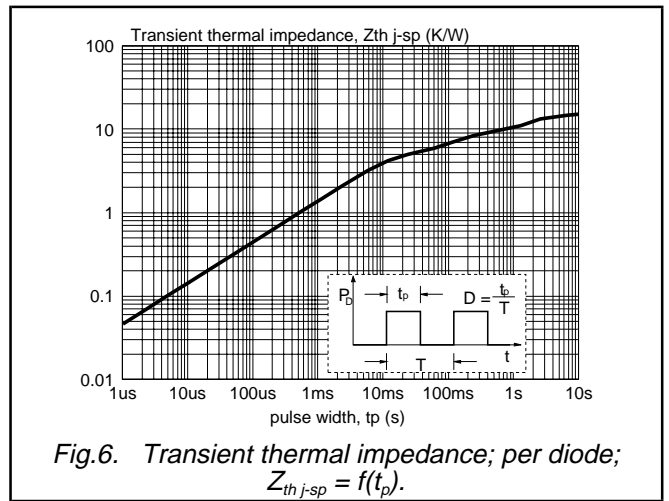


Fig.6. Transient thermal impedance; per diode;  $Z_{th j-sp} = f(t_p)$ .

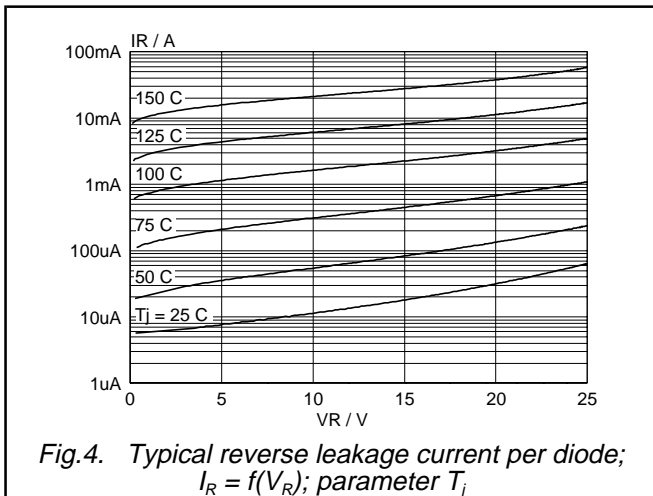
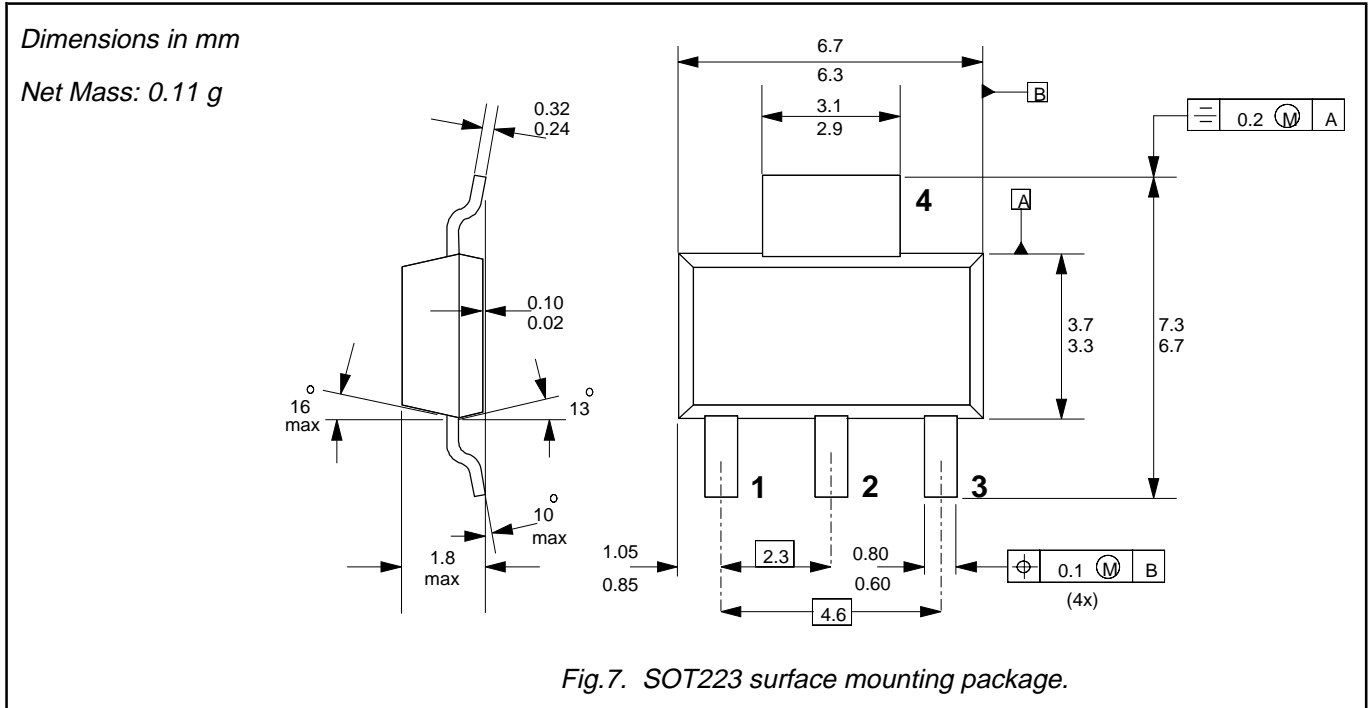


Fig.4. Typical reverse leakage current per diode;  $I_R = f(V_R)$ ; parameter  $T_j$

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**MECHANICAL DATA**



**Notes**

1. For further information, refer to Philips publication SC18 " SMD Footprint Design and Soldering Guidelines".  
Order code: 9397 750 00505.
2. Epoxy meets UL94 V0 at 1/8".

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## DEFINITIONS

<b>Data sheet status</b>	
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.
<b>Limiting values</b>	
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.	
<b>Application information</b>	
Where application information is given, it is advisory and does not form part of the specification.	
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