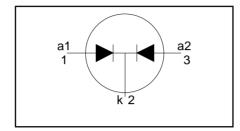
PBYR2545CTF, PBYR2545CTX

FEATURES

- Low forward volt drop
- Fast switching
- Reverse surge capability
- High thermal cycling performance
- Isolated mounting tab

SYMBOL



QUICK REFERENCE DATA

$$V_R = 40 \text{ V} / 45 \text{ V}$$
 $I_{O(AV)} = 20 \text{ A}$
 $V_F \le 0.65 \text{V}$

GENERAL DESCRIPTION

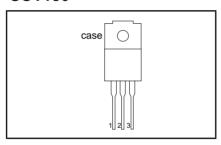
Dual, common cathode schottky rectifier diodes in a plastic envelope with electrically isolated mounting tab. Intended for use as output rectifiers in low voltage, high frequency switched mode power supplies.

The PBYR2545CTF is supplied in the SOT186 package. The PBYR2545CTX is supplied in the SOT186A package.

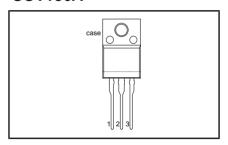
PINNING

PIN	DESCRIPTION		
1	anode 1 (a)		
2	cathode (k)		
3	anode 2 (a)		
tab	isolated		

SOT186



SOT186A



LIMITING VALUES

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

SYMBOL	PARAMETER CONDITIONS		MIN.	МА	X.	UNIT
		PBYR25 PBYR25		40CTF 40CTX	45CTF 45CTX	
V_{RRM}	Peak repetitive reverse voltage		-	40	45	V
V_{RWM}	Working peak reverse voltage		-	40	45	V
V_R	Continuous reverse voltage	T _{hs} ≤ 86 °C	-	40	45	V
I _{O(AV)}	Average rectified output current (both diodes conducting)	square wave; $\delta = 0.5$; $T_{hs} \le 98 ^{\circ}C$	-	20)	А
I _{FRM}	Repetitive peak forward current per diode	square wave; $\delta = 0.5$; $T_{hs} \le 98 ^{\circ}C$	-	20)	A
I _{FSM}	Non-repetitive peak forward current per diode	t = 10 ms t = 8.3 ms sinusoidal; $T_j = 125$ °C prior to surge; with reapplied $V_{RRM(max)}$	-	13 15		A A
I _{RRM}	Peak repetitive reverse surge current per diode	pulse width and repetition rate limited by T _{i max}	-	1		Α
T_{j}	Operating junction temperature	Jinax	-	15	0	°C
T _{stg}	Storage temperature		- 65	17	5	°C

PBYR2545CTF, PBYR2545CTX

ISOLATION LIMITING VALUE & CHARACTERISTIC

 T_{hs} = 25 °C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
V _{isol}	Peak isolation voltage from all terminals to external heatsink	SOT186 package; R.H. ≤ 65%; clean and dustfree	ı	1	1500	V
V _{isol}	R.M.S. isolation voltage from all terminals to external heatsink	SOT186A package; f = 50-60 Hz; sinusoidal waveform; R.H. ≤ 65%; clean and dustfree	1	1	2500	V
C _{isol}	Capacitance from pin 2 to external heatsink	f = 1 MHz	-	10	-	pF

THERMAL RESISTANCES

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
R _{th i-hs}	Thermal resistance junction	per diode	-	-	4.8	K/W
	to heatsink	both diodes (with heatsink compound)	-	-	4	K/W
R _{th j-a}	Thermal resistance junction to ambient	in free air	-	55	-	K/W

ELECTRICAL CHARACTERISTICS

 $T_i = 25$ °C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
V_{F}	Forward voltage per diode	$I_F = 20 \text{ A}; T_j = 125^{\circ}\text{C}$	-	0.58	0.65	V
		$I_{\rm F} = 20 {\rm A}$	-	0.63	0.68	V
I _R	Reverse current per diode	$V_R = V_{RWM}$	-	0.3	2	mA
		$V_{\rm R} = V_{\rm RWM}$; $T_{\rm i} = 100^{\circ}{\rm C}$	-	30	40	mA
C _d	Junction capacitance per diode	$V_R = 5 \text{ V}; \text{ f} = 1 \text{ MHz}, T_j = 25 ^{\circ}\text{C} \text{ to } 125 ^{\circ}\text{C}$	1	530	-	pF

PBYR2545CTF, PBYR2545CTX

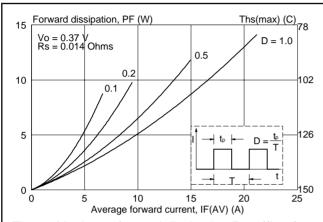


Fig.1. Maximum forward dissipation $P_F = f(I_{F(AV)})$ per diode; square current waveform where $I_{F(AV)} = I_{F(RMS)} x \sqrt{D}$.

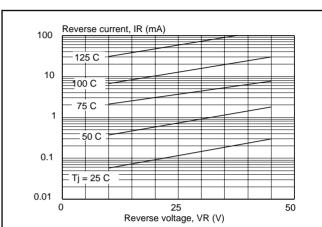


Fig.4. Typical reverse leakage current per diode; $I_R = f(V_R)$; parameter T_j

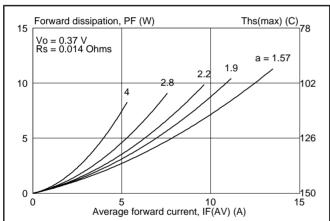


Fig.2. Maximum forward dissipation $P_F = f(I_{F(AV)})$ per diode; sinusoidal current waveform where a = form factor $= I_{F(RMS)} / I_{F(AV)}$.

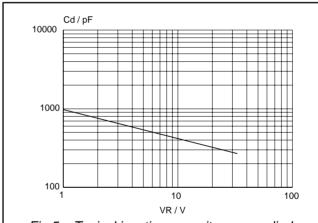


Fig.5. Typical junction capacitance per diode; $C_d = f(V_R)$; f = 1 MHz; $T_j = 25$ °C to 125°C.

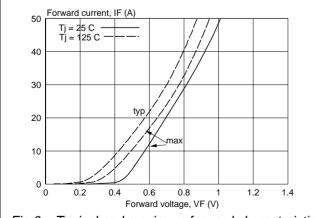


Fig.3. Typical and maximum forward characteristic $I_F = f(V_F)$; parameter T_i

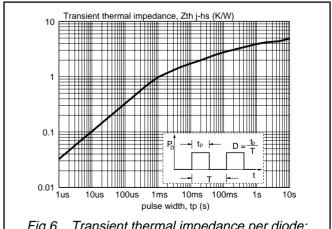
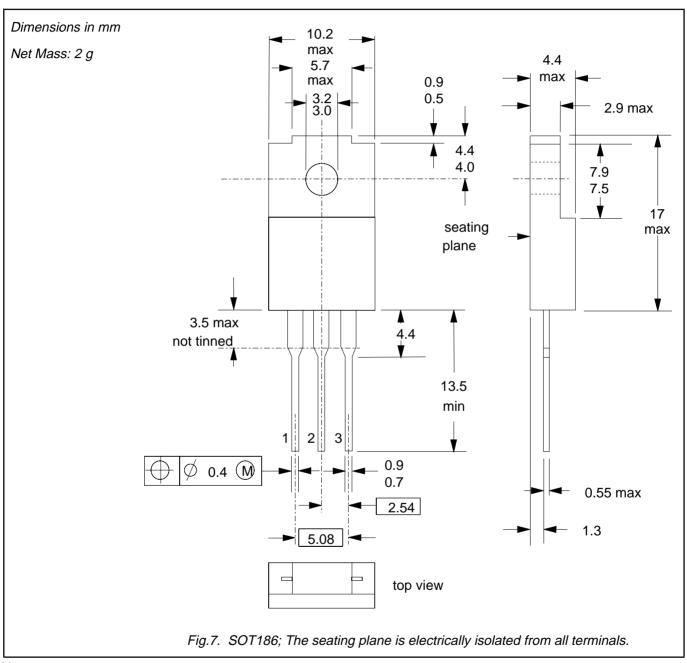


Fig.6. Transient thermal impedance per diode; $Z_{th j ext{-}hs} = f(t_p)$.

PBYR2545CTF, PBYR2545CTX

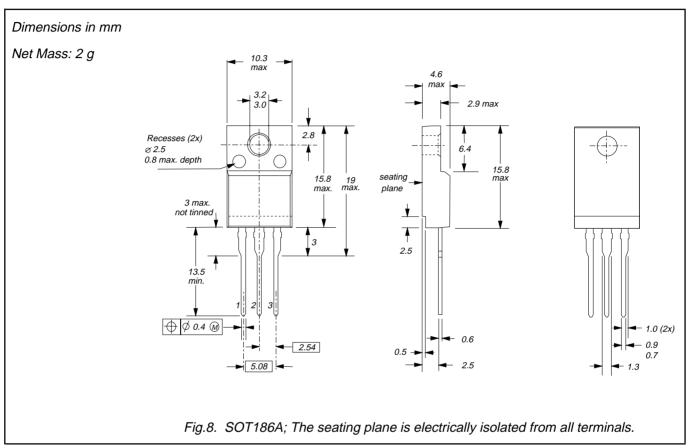
MECHANICAL DATA



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

PBYR2545CTF, PBYR2545CTX

MECHANICAL DATA



- Notes
 1. Refer to mounting instructions for F-pack envelopes.
 2. Epoxy meets UL94 V0 at 1/8".

Philips Semiconductors Product specification

Rectifier diodes Schottky barrier

PBYR2545CTF, PBYR2545CTX

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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