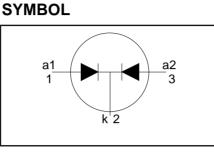
PBYL2525CT, PBYL2525CTB series

FEATURES

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



QUICK REFERENCE DATA

$$V_{R} = 20 \text{ V}/25 \text{ V}$$

 $I_{O(AV)} = 25 \text{ A}$
 $V_{F} \le 0.43 \text{ V}$

GENERAL DESCRIPTION

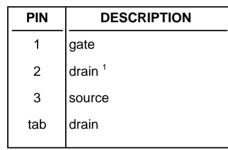
Dual schottky rectifier diodes intended for use as output rectifiers in low voltage, high frequency switched mode power supplies.

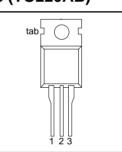
The PBYL2525CT series is supplied in the SOT78 (TO220AB) conventional leaded package. The PBYL2525CTB series is supplied in the SOT404 surface mounting package.

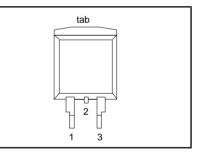
PINNING

SOT78 (TO220AB)

SOT404







LIMITING VALUES

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.		UNIT
		PBYL25 PBYL25		20CT 20CTB	25CT 25CTB	
V _{RRM}	Peak repetitive reverse voltage		-	20	25	V
V _{RWM}	Working peak reverse voltage		-	20	25	V
V _R	Continuous reverse voltage	$T_{mb} \le 120 \degree C$	-	20	25	V
I _{O(AV)}	Average rectified output current (both diodes conducting)	square wave; δ = 0.5; $T_{mb} \le 119$ °C	-	25		A
I _{FRM}	Repetitive peak forward current per diode	square wave; δ = 0.5; T _{mb} \leq 119 °C	-	25		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)}	-		35 50	A A
I _{RRM}	Peak repetitive reverse surge current per diode	pulse width and repetition rate limited by T _{i max}	-	1		A
T _j	Operating junction temperature	J max	-	150		°C
T _{stg}	Storage temperature		- 65	17	75	°C

1. It is not possible to make connection to pin 2 of the SOT404 package.

PBYL2525CT, PBYL2525CTB series

THERMAL RESISTANCES

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
R _{th j-mb} R _{th j-a}	Thermal resistance junction to mounting base Thermal resistance junction to ambient	per diode both diodes SOT78 package, in free air SOT404 package, pcb mounted, minimum footprint, FR4 board	- - -	- 60 50	3 2 -	K/W K/W K/W K/W

ELECTRICAL CHARACTERISTICS

All characteristics are per diode at $T_i = 25$ °C unless otherwise specified

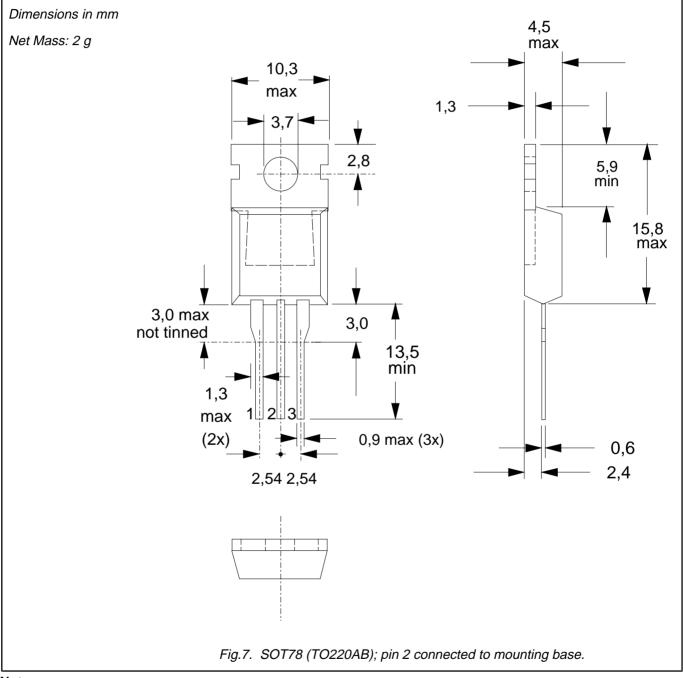
SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
V _F	Forward voltage	I _F = 12.5 A; T _i = 150°C	-	0.36	0.43	V
	-	$I_{\rm F} = 12.5 \text{ A}; T_{\rm i} = 125 ^{\circ} \text{C}$	-	0.38	0.47	V
		I _F = 25 A; T _i = 125°C	-	0.5	0.62	V
		$I_{\rm F} = 25 {\rm A}$	-	0.54	0.66	V
I _R	Reverse current	$\dot{V}_{R} = V_{RWM}$	-	1	5	mA
		$V_R = V_{RWM}; T_i = 100^{\circ}C$	-	20	30	mA
C _d	Junction capacitance	$V_{R}^{c} = V_{RWM}^{cvvm}$; T _j = 100°C V _R = 5 V; f = 1 MHz, T _j = 25°C to 125°C	-	600	-	pF

Tmb(max) / C Forward dissipation, PF (W) IR / A 1A 12 Vo = 0.320 V Rs = 0.012 Ohms Ti = 150℃ D = 1.0 120 10 100mA 0.5 125 8 126 10mA 0.2 ≡100÷ 0.1 6 132 75 1mA 138 4 50 D 100uA 2 144 t 150 0 10uA 5 10 15 Average forward current, IF(AV) (A) 20 20 15 25 n 10 VR / V Maximum forward dissipation $P_F = f(I_{F(AV)})$ per Fig.4. Typical reverse leakage current per diode; Fig.1. $I_R = f(V_R)$; parameter T_i diode; square current waveform where $I_{F(AV)} = I_{F(RMS)} \times \sqrt{D}.$ Tmb(max) / C 10000 Cd / pF Forward dissipation, PF (W) 10 Vo = 0.32 V Rs = 0.012 Ohms 8 126 a = 1.57 1.9 22 28 6 132 1000 138 4 2 144 150 0 100 4 6 8 1 Average forward current, IF(AV) (A) 100 10 0 12 2 10 VR/V Fig.2. Maximum forward dissipation $P_F = f(I_{F(AV)})$ per diode; sinusoidal current waveform where a = formFig.5. Typical junction capacitance per diode; $C_d = f(V_R); f = 1 \text{ MHz}; T_j = 25^{\circ}C \text{ to } 125^{\circ}C.$ factor = $I_{F(RMS)} / I_{F(AV)}$. Transient thermal impedance, Zth j-mb (K/W) IF / A 10 30 Tj = 25℃ tvp max Tj = 125℃ 25 1 20 0.1 15 10 0.01 tρ D 5 ⊧— ⊂====== 0.001 └─ 1us T 11100 00 1ms 10ms 100ms 1s 10us 100us 10s 0.2 0.4 0.6 0.8 1 pulse width, tp (s) VF / V Fig.3. Typical and maximum forward characteristic Fig.6. Transient thermal impedance per diode; $I_F = f(V_F)$; parameter T_i $Z_{th j-mb} = f(t_p).$

PBYL2525CT, PBYL2525CTB series

PBYL2525CT, PBYL2525CTB series

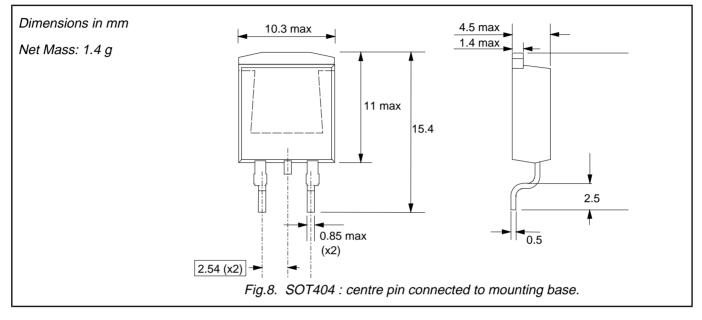
MECHANICAL DATA



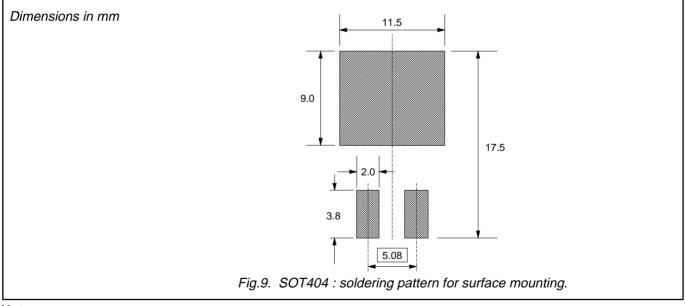
Notes 1. Refer to mounting instructions for SOT78 (TO220) envelopes. 2. Epoxy meets UL94 V0 at 1/8".

PBYL2525CT, PBYL2525CTB series

MECHANICAL DATA



MOUNTING INSTRUCTIONS



Notes

1. Epoxy meets UL94 V0 at 1/8".

PBYL2525CT, PBYL2525CTB series

DEFINITIONS

Data sheet status				
Objective specification	bjective specification This data sheet contains target or goal specifications for product development.			
Preliminary specification	minary specification This data sheet contains preliminary data; supplementary data may be published late			
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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