

Rectifier diodes
schottky barrier

PBYR2525CT series

GENERAL DESCRIPTION

Dual nickel silicide schottky barrier rectifier diodes in a plastic envelope featuring low forward voltage drop and absence of stored charge. These devices can withstand reverse voltage transients and have guaranteed reverse surge capability. The devices are intended for use in switched mode power supplies with 3 V - 3.3 V outputs, or as or-ing diodes in fault tolerant power supply systems.

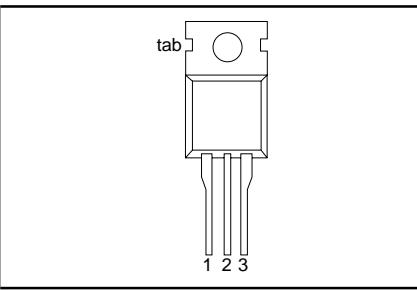
QUICK REFERENCE DATA

SYMBOL	PARAMETER	MAX. PBYR25- 20CT	MAX. 25CT	UNIT
V_{RRM}	Repetitive peak reverse voltage	20	25	V
V_F $I_{O(AV)}$	Forward voltage Average output current (both diodes conducting)	0.41 30	0.41 30	V A

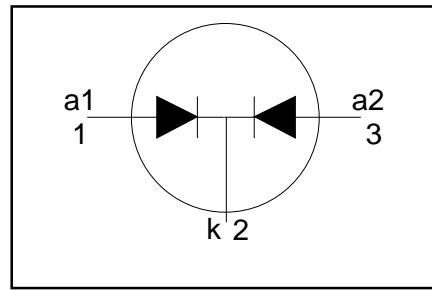
PINNING - TO220AB

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

PIN CONFIGURATION



SYMBOL



LIMITING VALUES

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V_{RRM}	Repetitive peak reverse voltage		-	-20	V
V_{RWM}	Crest working reverse voltage		-	20	V
V_R	Continuous reverse voltage	$T_{mb} \leq 109^\circ C$	-	20	V
$I_{O(AV)}$	Average output current (both diodes conducting)	square wave; $\delta = 0.5$; $T_{mb} \leq 135^\circ C$	-	30	A
$I_{O(RMS)}$	RMS output current (both diodes conducting)		-	43	A
I_{FRM}	Repetitive peak forward current per diode	$t = 25 \mu s$; $\delta = 0.5$; $T_{mb} \leq 135^\circ C$	-	30	A
I_{FSM}	Non-repetitive peak forward current, per diode	$t = 10 \text{ ms}$ $t = 8.3 \text{ ms}$ sinusoidal $T_j = 125^\circ C$ prior to surge; with reapplied $V_{RRM(max)}$	-	180 200	A
I^2t	I^2t for fusing	$t = 10 \text{ ms}$	-	162	A^2s
I_{RRM}	Repetitive peak reverse current per diode	$t_p = 2 \mu s$; $\delta = 0.001$	-	2	A
I_{RSM}	Non-repetitive peak reverse current per diode	$t_p = 100 \mu s$	-	2	A
T_{stg}	Storage temperature		-65	175	$^\circ C$
T_j	Operating junction temperature		-	150	$^\circ C$

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THERMAL RESISTANCES

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
$R_{th\ j\cdot mb}$	Thermal resistance junction to mounting base	per diode	-	-	1.5	K/W
$R_{th\ j\cdot a}$	Thermal resistance junction to ambient	both diodes in free air	-	60	1.0	K/W

STATIC CHARACTERISTICS

 $T_j = 25^\circ\text{C}$ unless otherwise stated

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
V_F	Forward voltage (per diode)	$I_F = 15\text{ A}; T_j = 125^\circ\text{C}$ $I_F = 30\text{ A}; T_j = 125^\circ\text{C}$ $I_F = 30\text{ A}$	-	0.33	0.41	V
I_R	Reverse current (per diode)	$V_R = V_{RRM}$ $V_R = V_{RRM}; T_j = 100^\circ\text{C}$	-	0.43	0.50	V
C_d	Junction capacitance (per diode)	$f = 1\text{ MHz}; V_R = 5\text{ V}; T_j = 25^\circ\text{C}$ to 125°C	-	0.51	0.60	V

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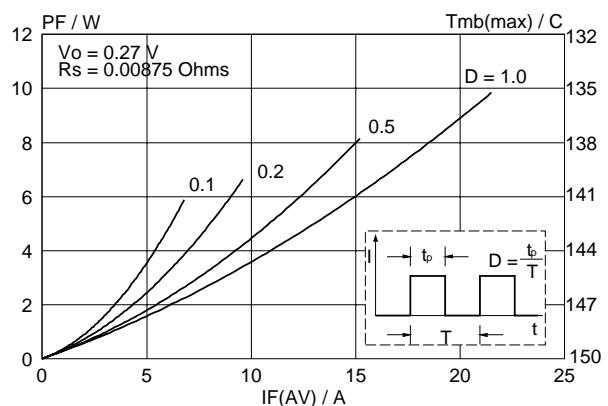


Fig.1. Maximum forward dissipation $P_F = f(IF(AV))$ per diode; square current waveform where $IF(AV) = IF(RMS) \times \sqrt{D}$.

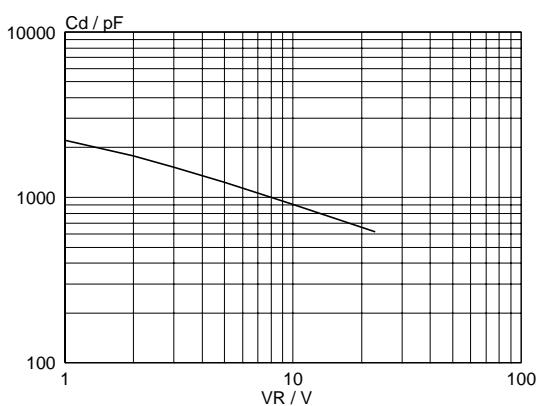


Fig.4. Typical junction capacitance per diode; $C_d = f(V_R)$; $f = 1$ MHz; $T_j = 25^\circ\text{C}$ to 125°C .

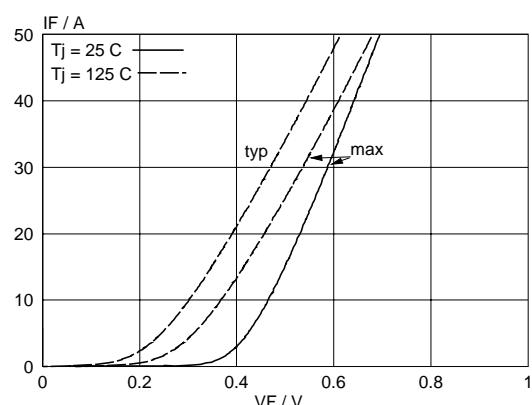


Fig.2. Typical and maximum forward characteristic $IF = f(V_F)$; parameter T_j

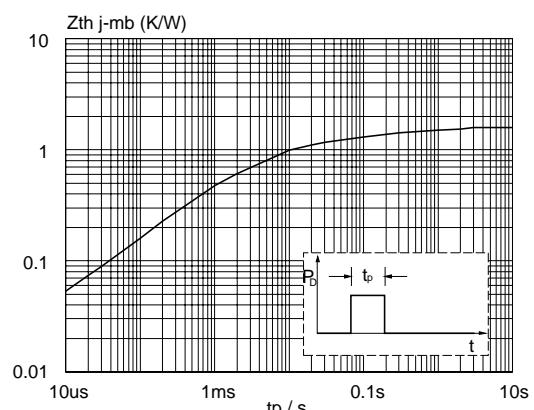


Fig.5. Transient thermal impedance per diode; $Z_{th,jmb} = f(tp)$.

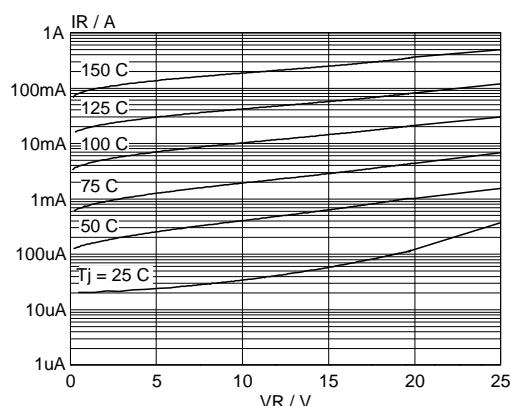


Fig.3. Typical reverse leakage current per diode; $I_R = f(V_R)$; parameter T_j

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MECHANICAL DATA

Dimensions in mm

Net Mass: 2 g

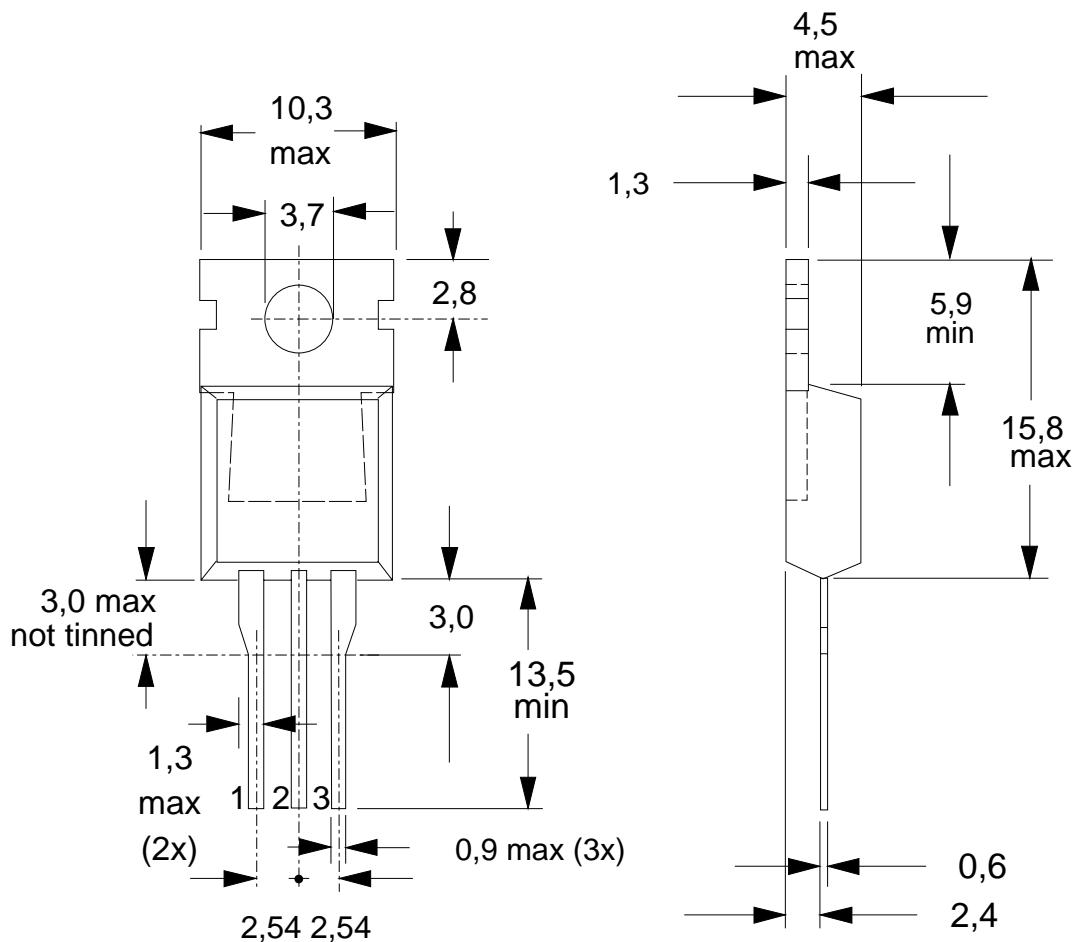


Fig.6. TO220AB; pin 2 connected to mounting base.

Notes

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

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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