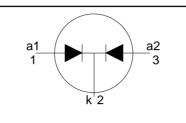
PBYR7025WT series

FEATURES

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



QUICK REFERENCE DATA

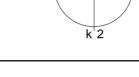
$$V_{R} = 20 \text{ V} / 25 \text{ V}$$

 $I_{O(AV)} = 70 \text{ A}$
 $V_{F} \le 0.46 \text{ V}$

GENERAL DESCRIPTION

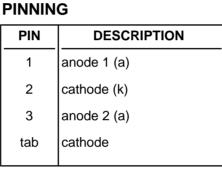
Dual, common cathode schottky rectifier diodes in a plastic envelope. Intended for use as output rectifiers in low voltage, high frequency switched mode power supplies.

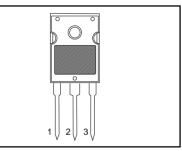
PBYR7025WT series is The supplied in the conventional leaded SÓT429 (TO247) package.



SYMBOL

SOT429 (TO247)





LIMITING VALUES

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.		UNIT
V _{RRM} V _{RWM} V _R	Repetitive peak reverse voltage Crest working reverse voltage Continuous reverse voltage	T _{mb} ≤ 116 °C		-20 20 20 20	-25 25 25 25	V V V
I _{O(AV)}	Average output current (both diodes conducting)	square wave; $\delta = 0.5$; T _{mb} $\leq 114 \text{ °C}$	-	7	0	A
I _{FRM}	Repetitive peak forward current per diode	t = 25 μs; δ = 0.5; T _{mb} ≤ 114 °C	-	7	0	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 $V_{RRM(max)}$ S = 0.001	-		00 50	A A
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 μs	-		2	A
T _{stg} T _j	Storage temperature Operating junction temperature		-65 -		50 50	°C ℃

THERMAL RESISTANCES

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
R _{th j-mb} R _{th j-a}	mounting base	per diode both diodes in free air	-	- - 45	0.9 0.65 -	K/W K/W K/W

PBYR7025WT series

ELECTRICAL CHARACTERISTICS

 $T_j = 25$ °C unless otherwise stated

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
V _F	Forward voltage (per diode)	I _F = 35 A; T _j = 125°C I _F = 70 A; T _j = 125°C I _F = 70 A	- -	0.40 0.52 0.58	0.46 0.54 0.64	V V V
I _R	Reverse current (per diode)	$V_{R} = V_{RRM}$ $V_{R} = V_{RRM}$; $T_{j} = 100 °C$ $f = 1MHz$; $V_{R} = 5V$; $T_{j} = 25 °C$ to	-	0.8 40	15 120	mA mA
C _d	Junction capacitance (per diode)	$f = 1MHZ; V_R = 5V; T_j = 25 °C to$ 125 °C	-	2100	-	pF

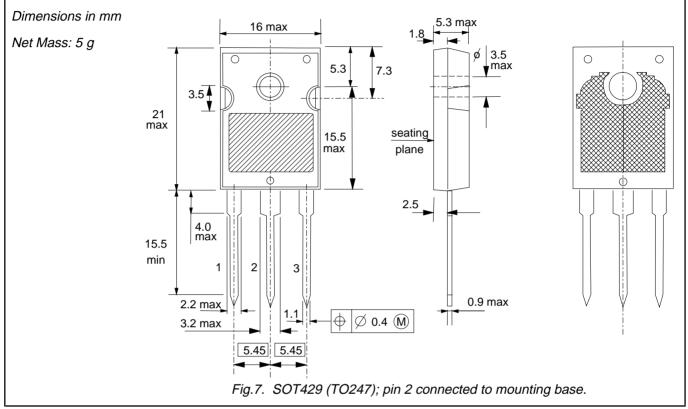
PBYR7025WT series

Rectifier diodes Schottky barrier

Forward dissipation, PF (W) Tmb(max) (C) Reverse Current, IR (mA) PBYR7025WT 25 127.5 1000 PBYR7025WT 0.5 20 132 100 D = 10Tj =125C 0.2 15 136.5 10 Tj =100C 0.1 Tj =75C 10 141 D = tp/TTj =50C 45.5 5 0.1 Tj =25C 150 0 0.01 0 10 20 30 40 50 10 15 20 Reverse Voltage, VR (V) 0 5 25 30 Average forward current, IF(AV) (A) Fig.1. Maximum forward dissipation $P_F = f(I_{F(AV)})$ per diode; square current waveform where Fig.4. Typical reverse leakage current per diode; $I_R = f(V_R)$; parameter T_i $I_{F(AV)} = I_{F(RMS)} \times \sqrt{D}.$ Forward dissipation, PF (W) Tmb(max) (C) PBYR7025WT Cd / pl 10000 18 133.8 PBYR7025WT 1.9 1.57 16 135.6 2.2 14 137.4 2.8 12 139.2 10 141 1000 142.8 8 144.6 6 146.4 4 148.2 2 150 0 100 10 15 20 25 35 0 5 30 10 VR/V 100 1 Average forward current, IF(AV) (A) Fig.2. Maximum forward dissipation $P_F = f(I_{F(AV)})$ per diode; sinusoidal current waveform where a = form Fig.5. Typical junction capacitance per diode; $C_d = f(V_R); f = 1 \text{ MHz}; T_j = 25^{\circ}C \text{ to } 150^{\circ}C.$ factor = $I_{F(RMS)} / I_{F(AV)}$. Forward Current, IF (A) PBYR7025WT 70 — — – Tj = 125 C Transient Thermal Impedance, Zth j-mb (K/W) PBYR7025WT 65 10 60 Tj = 25 C 55 typ 50 max 45 1 40 Single pulse 35 30 0.1 25 PD 20 15 0.01 10 5 0 եսուտը-ուրուդ mill 0.001 0.1 0.2 0.5 0 0.3 0.4 0.6 0.7 0.8 1E-05 1E-04 1E-03 1E-02 1E-01 1E+00 1E+01 pulse width, tp (s) 1E-06 Forward Voltage, VF (V) Fig.3. Typical and maximum forward characteristic Fig.6. Transient thermal impedance per diode; $I_F = f(V_F)$; parameter T_i $Z_{th j-mb} = f(t_p).$

PBYR7025WT series

MECHANICAL DATA



Notes

Refer to mounting instructions for SOT429 envelope.
Epoxy meets UL94 V0 at 1/8".

PBYR7025WT series

DEFINITIONS

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