Schottky Dual Diode

PBYR2150CT

150V / 1A

DATASHEET

OEM – Philips

Source: Philips Databook 1999

Datasheet Rev. 1.3 – 04/19 – data without warranty / liability

Schottky barrier double diode PBYR2150CT

FEATURES

- Low switching losses
- Low forward voltage
- High breakdown voltage
- Fast recovery time
- Guard ring protected
- Plastic SMD package.

APPLICATIONS

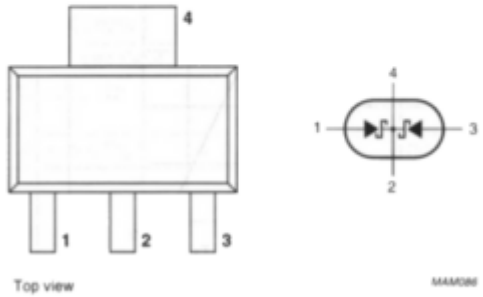
- Low power, switched-mode power supplies
- Rectification
- Polarity protection.

PINNING

PIN	DESCRIPTION
1	anode (a_1)
2	common cathode
3	anode (a_2)
4	common cathode

DESCRIPTION

The PBYR2150CT is a Schottky barrier double diode, fabricated in planar technology, and encapsulated in a SOT223 plastic SMD package.



Marking code: BYR215.

Fig.1 Simplified outline (SOT223), pin configuration and symbol.

LIMITING VALUES

In accordance with the Absolute Maximum Rating System (IEC 134).

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
Per diode					
V_R	continuous reverse voltage		–	150	V
V_{RRM}	repetitive peak reverse voltage		–	150	V
V_{RWM}	crest working reverse voltage		–	150	V
$I_{F(AV)}$	average forward current	T_{amb} = 85 °C; $R_{th\ j\text{-}a}$ = 70 K/W; note 1; $V_{R(equiv)}$ = 0.2 V; note 2	–	1	A
I_{FSM}	non-repetitive peak forward current	t = 8.3 ms half sinewave; JEDEC method	–	10	A

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SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
Per diode					
T_{stg}	storage temperature		–65	+150	°C
T_j	junction temperature		–65	+150	°C
T_{amb}	operating ambient temperature		–	80	°C

Notes

1. Refer to SOT223 standard mounting conditions.
2. For Schottky barrier diodes thermal run-away has to be considered, as in some applications, the reverse power losses P_R are a significant part of the total power losses. Nomograms for determination of the reverse power losses P_R and $I_{F(AV)}$ rating will be available on request.

ELECTRICAL CHARACTERISTICS

T_{amb} = 25 °C unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MAX.	UNIT
Per diode				
V_F	forward voltage	see Fig.2		
		I_F = 0.1 A; note 1	400	mV
		I_F = 0.5 A; note 1	650	mV
		I_F = 1 A; note 1	850	mV
		I_F = 1 A; T_j = 100 °C; note 1	690	mV
I_R	reverse current	$V_R = V_{RRMmax}$; note 1; see Fig.3	1	mA
		$V_R = V_{RRMmax}$; T_j = 100 °C; note 1; see Fig.3	10	mA
C_d	diode capacitance	V_R = 4 V; f = 1 MHz; see Fig.4	100	pF

Note

1. Pulsed test: t_p = 300 µs; δ = 0.02.

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th\ j\text{-}a}$	thermal resistance from junction to ambient	note 1	70	K/W

Note

1. Refer to SOT223 standard mounting conditions.

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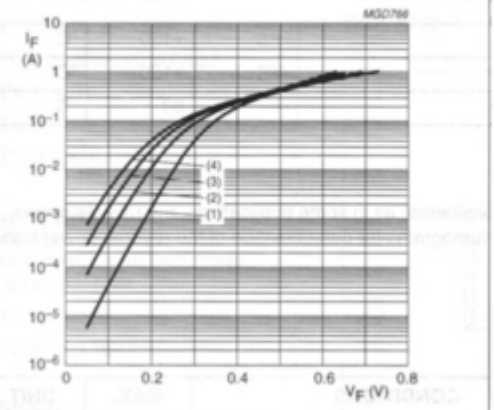
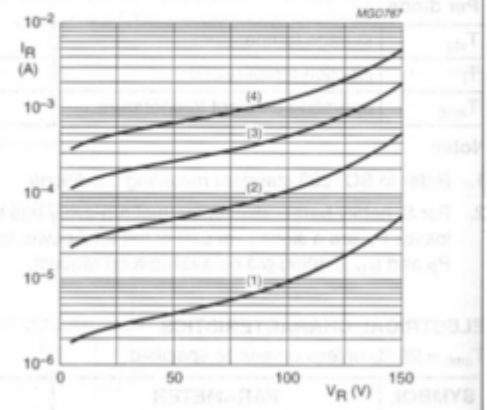
GRAPHICAL DATA



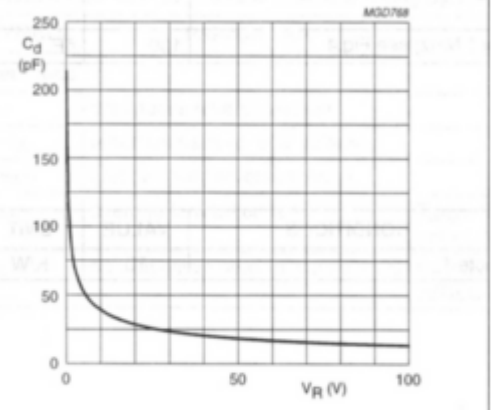
(1) T_{amb} = 25 °C.
(2) T_{amb} = 60 °C.
(3) T_{amb} = 80 °C.
(4) T_{amb} = 100 °C.

Fig.2 Forward current as a function of forward voltage; typical values.



(1) T_{amb} = 25 °C.
(2) T_{amb} = 60 °C.
(3) T_{amb} = 80 °C.
(4) T_{amb} = 100 °C.

Fig.3 Reverse current as a function of reverse voltage; typical values.



f = 1 MHz.

Fig.4 Diode capacitance as a function of reverse voltage; typical values.