

Philips

Diode BYD52G

Datasheet

Silicon Diode

BYD52G

400V/470mA

DATASHEET

OEM – Philips

Source: Philips Databook 1999

**Fast soft-recovery controlled
avalanche rectifiers**
BYD52 series
FEATURES

- Glass passivated
- High maximum operating temperature
- Low leakage current
- Excellent stability
- Guaranteed avalanche energy absorption capability
- Available in ammo-pack.

DESCRIPTION

Cavity free cylindrical glass SOD120 package through Implotec™⁽¹⁾ technology. This package is

hermetically sealed and fatigue free as coefficients of expansion of all used parts are matched.

(1) Implotec is a trademark of Philips.



Fig.1 Simplified outline (SOD120) and symbol.

LIMITING VALUES

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V _{RRM}	repetitive peak reverse voltage		–	200	V
	BYD52D			400	V
	BYD52G			600	V
V _R	continuous reverse voltage		–	200	V
	BYD52D			400	V
	BYD52G			600	V
I _{F(AV)}	average forward current	T _{amb} = 25 °C; printed-circuit board mounting, pitch 5 mm, see Fig.6; averaged over any 20 ms period; see Fig.2	–	0.47	A
I _{FSM}	non-repetitive peak forward current	t = 10 ms half sine wave; T _j = 25 °C; V _R = V _{RRMmax}	–	5	A
T _{stg}	storage temperature		–65	+175	°C
T _j	junction temperature	see fig.3	–65	+175	°C

ELECTRICAL CHARACTERISTICS

T_j = 25 °C unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MAX.	UNIT
V _F	forward voltage	I _F = 1 A; see Fig.4	3.6	V
I _R	reverse current	V _R = V _{RRMmax}	1	μA
		V _R = V _{RRMmax} ; T _j = 165 °C; see Fig.5	100	μA
t _{rr}	reverse recovery time	when switched from I _F = 0.5 A to I _R = 1 A; measured at I _R = 0.25 A; see Fig.7	30	ns

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THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
R _{th j-a}	thermal resistance from junction to ambient	note 1	150	K/W

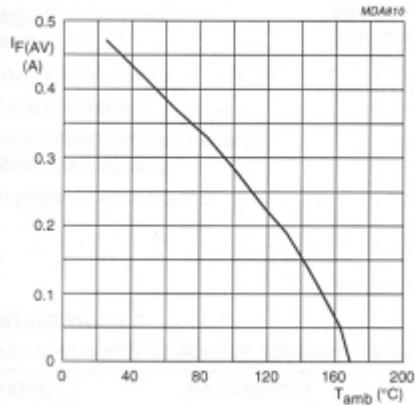
Note

1. Device mounted on an epoxy-glass printed-circuit board, 1.5 mm thick; thickness of copper layer ≥40 µm, pitch 5 mm; see Fig.6.

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GRAPHICAL DATA



$\alpha = 1.42$; $V_R = V_{RRMmax}$; $\delta = 0.5$.
Device mounted as shown in Fig.6.

Fig.2 Maximum permissible average forward current as a function of ambient temperature (including losses due to reverse leakage).

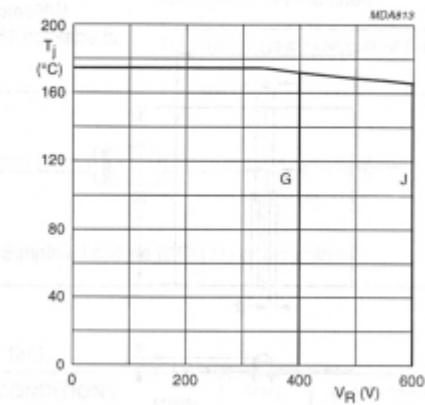
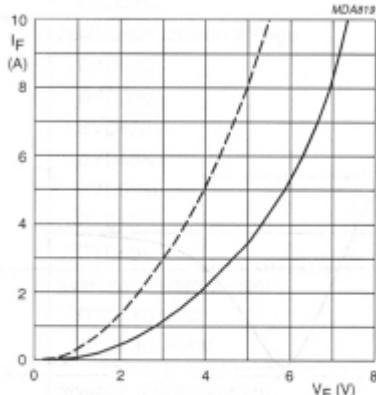
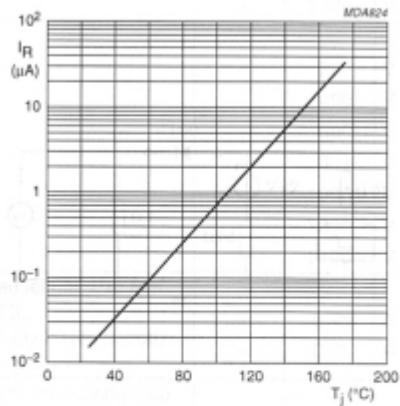


Fig.3 Maximum permissible junction temperature (T_{jmax}) as a function of reverse voltage.



Solid line: $T_j = 25$ °C.
Dotted line: $T_j = 175$ °C.

Fig.4 Forward current as a function of forward voltage; typical values.



$V_R = V_{RRMmax}$

Fig.5 Reverse current as a function of junction temperature; typical values.

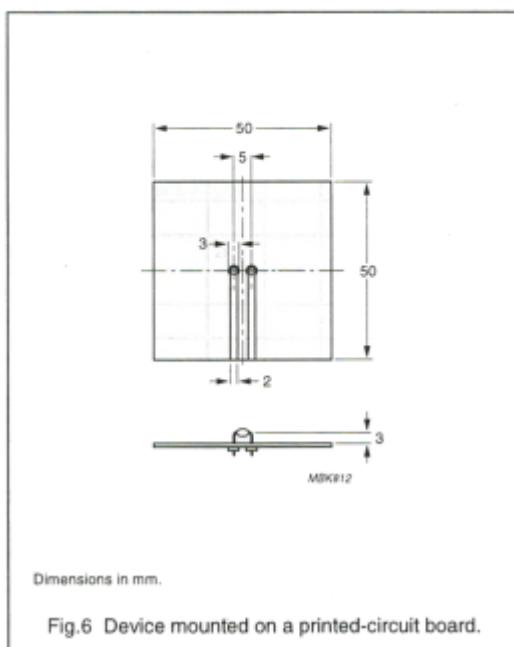
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Fig.6 Device mounted on a printed-circuit board.

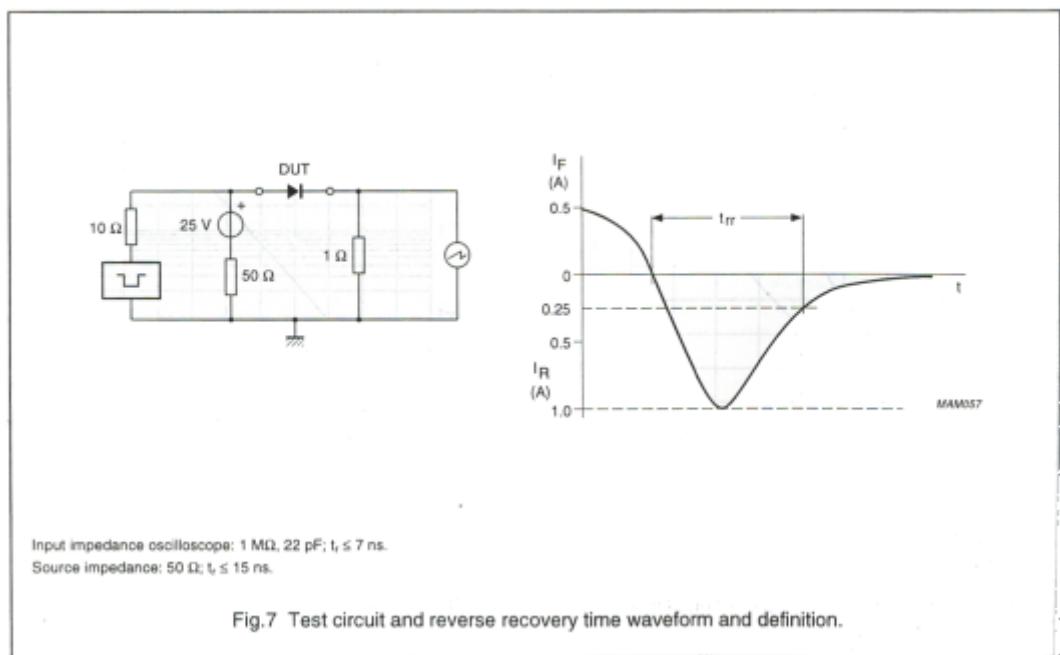


Fig.7 Test circuit and reverse recovery time waveform and definition.