

Silicon Schottky Diode

BYG90-30

30V/1A

DATASHEET

OEM – Philips

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Schottky barrier rectifier diodes**BYG90-40 series****FEATURES**

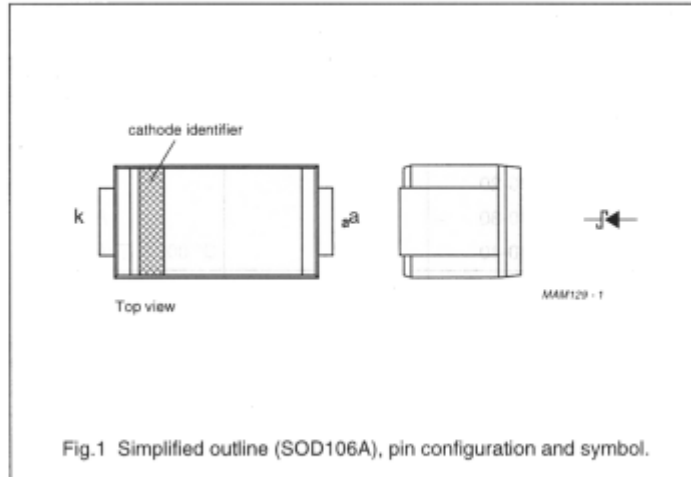
- Low switching losses
- Capability of absorbing very high surge current
- Fast recovery time
- Guard ring protected
- Plastic SMD package.

APPLICATIONS

- Low power switched-mode power supplies
- Rectifying
- Polarity protection.

DESCRIPTION

The BYG 90-40 series consists of Schottky barrier rectifier diodes, fabricated in planar technology, and encapsulated in rectangular SOD106A plastic SMD packages.



Schottky barrier rectifier diodes

BYG90-40 series

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				
	BYG90-20		–	20	V
	BYG90-30		–	30	V
	BYG90-40		–	40	V
V_{RRM}	repetitive peak reverse voltage				
	BYG90-20		–	20	V
	BYG90-30		–	30	V
	BYG90-40		–	40	V
V_{RWM}	crest working reverse voltage				
	BYG90-20		–	20	V
	BYG90-30		–	30	V
	BYG90-40		–	40	V
$I_{F(AV)}$	average forward current	$T_{amb} = 65\text{ °C}$; see Fig.2; $R_{th\ j-a} = 80\text{ K/W}$; note 1; $V_{R(equiv)} = 0.2\text{ V}$; note 2	–	1	A
I_{FSM}	non-repetitive peak forward current	$t = 8.3\ \mu\text{s}$ half sine wave; JEDEC method	–	30	A
I_{RSM}	non-repetitive peak reverse current	$t_p = 100\ \mu\text{s}$	–	0.5	A
T_{stg}	storage temperature		–65	+125	°C
T_j	junction temperature		–	125	°C

Notes

1. Refer to SOD106A 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.

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ELECTRICAL CHARACTERISTICS

$T_{amb} = 25\text{ °C}$; unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
Per diode						
V_F	forward voltage	see Fig.2; note 1				
		$I_F = 1\text{ A}$	–	–	550	mV
		$I_F = 3\text{ A}$	–	–	850	mV
I_R	reverse current	$V_R = V_{RRMmax}$; note 1; see Fig.3	–	–	1	mA
		$V_R = V_{RRMmax}$; $T_j = 100\text{ °C}$; note 1; see Fig.3	–	–	10	mA
C_d	diode capacitance	$V_R = 4\text{ V}$; $f = 1\text{ MHz}$; see Fig.4	–	–	75	pF

Note

1. Pulsed test: $t_p = 300\text{ }\mu\text{s}$; $\delta = 0.02$.

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th\ j-a}$	thermal resistance from junction to ambient	note 1	80	K/W

Note

1. Refer to SOD106A standard mounting conditions.

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GRAPHICAL DATA

