

# Silicon Diode

## **BYX120G**

3kV/100mA

# DATASHEET

OEM – Philips

Source: Philips Databook 1999

## High-voltage soft-recovery controlled avalanche rectifier

## BYX120G

### FEATURES

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

### APPLICATIONS

- Car ignition systems
- Automotive applications with extreme temperature requirements.

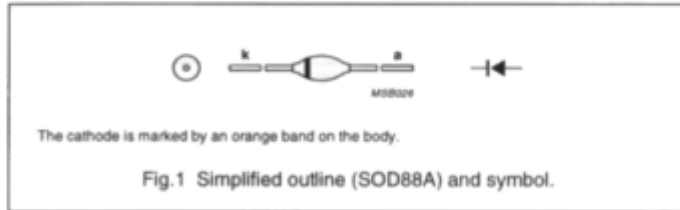
### DESCRIPTION

Rugged glass package, using a high temperature alloyed construction.

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

The package is designed to be used in an insulating medium such as resin, oil or SF6 gas.

See also the chapter on custom made high-voltage rectifiers in the "General Part of Handbook SC01".



### LIMITING VALUES

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.
$V_{RRM}$	repetitive peak reverse voltage		–	3	kV
$V_{RWM}$	crest working reverse voltage		–	3	kV
$I_{F(AV)}$	average forward current		–	100	mA
$I_{FRM}$	repetitive peak forward current		–	5	A
$I_{FSM}$	non-repetitive peak forward current	$t = 10$ ms half sinewave; $T_j = T_{jmax}$ prior to surge; $V_R = V_{RWMmax}$	–	15	A
$P_{RSM}$	non-repetitive peak reverse power dissipation	$t = 10$ $\mu$ s; triangular pulse; $T_j = T_{jmax}$ prior to surge	–	3	kW
$T_{stg}$	storage temperature		–65	+200	°C
$T_j$	junction temperature	continuous	–65	+180	°C
		maximum 30 mins	–65	+200	°C

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**ELECTRICAL CHARACTERISTICS** $T_j = 25\text{ °C}$ ; unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
$V_F$	forward voltage	$I_F = 250\text{ mA}$	–	–	5	V
$V_{(BR)R}$	reverse avalanche breakdown voltage	$I_R = 0.1\text{ mA}$	3.5	–	–	kV
$I_R$	reverse current	$V_R = V_{RWMmax}$ ; $T_j = 180\text{ °C}$	–	–	75	$\mu\text{A}$

**THERMAL CHARACTERISTICS**

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th\ j-a}$	thermal resistance from junction to ambient	$T_{amb} = T_{leads}$	55	K/W