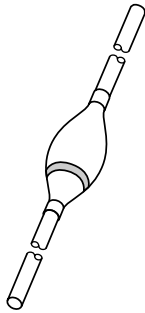


# DATA SHEET



**BYX133GL**

High-voltage car ignition diode

Product specification  
Supersedes data of 1998 Dec 04

2000 Jan 13

# High-voltage car ignition diode

## BYX133GL

### FEATURES

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

### APPLICATIONS

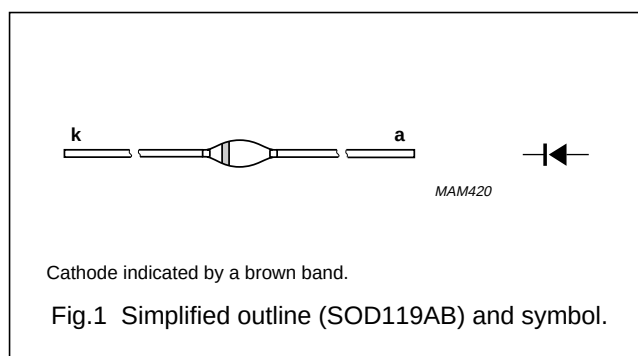
- Car ignition systems
- Automotive applications with extreme temperature requirements.

### DESCRIPTION

Rugged glass package, using a high temperature alloyed construction.

The SOD119AB 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.



### LIMITING VALUES

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

| SYMBOL      | PARAMETER                           | CONDITIONS                                                     | MIN. | MAX. | UNIT |
|-------------|-------------------------------------|----------------------------------------------------------------|------|------|------|
| $V_{RRM}$   | repetitive peak reverse voltage     |                                                                | –    | 3    | kV   |
| $V_{RWM}$   | crest working reverse voltage       |                                                                | –    | 3    | kV   |
| $I_{F(AV)}$ | average forward current             |                                                                | –    | 50   | mA   |
| $I_{RSM}$   | non-repetitive peak reverse current | $t = 100 \mu s$ triangular pulse;<br>$T_{jmax}$ prior to surge | –    | 50   | mA   |
| $T_{stg}$   | storage temperature                 |                                                                | –65  | +200 | °C   |
| $T_j$       | junction temperature                | continuous                                                     | –    | 175  | °C   |
|             |                                     | maximum 30 minutes                                             | –    | 200  | °C   |

### CHARACTERISTICS

$T_j = 25^\circ C$  unless otherwise specified.

| SYMBOL      | PARAMETER                           | CONDITIONS                               | MIN. | MAX. | UNIT    |
|-------------|-------------------------------------|------------------------------------------|------|------|---------|
| $V_F$       | forward voltage                     | $I_F = 10 \text{ mA}$                    | 3.75 | 5.25 | V       |
| $V_{(BR)R}$ | reverse avalanche breakdown voltage | $I_R = 100 \mu A$                        | 3.5  | 5.5  | kV      |
| $I_R$       | reverse current                     | $V_R = V_{RWMmax}$ ; $T_j = 175^\circ C$ | –    | 30   | $\mu A$ |

### THERMAL CHARACTERISTICS

| SYMBOL       | PARAMETER                                   | CONDITIONS                                  | VALUE | UNIT |
|--------------|---------------------------------------------|---------------------------------------------|-------|------|
| $R_{th j-a}$ | thermal resistance from junction to ambient | $T_{amb} = T_{leads}$ ; lead length = 10 mm | 90    | K/W  |

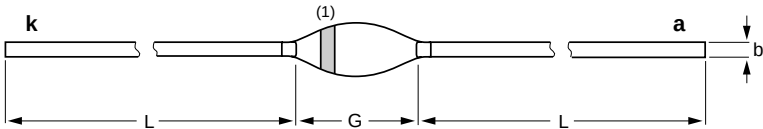
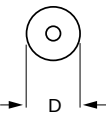
High-voltage car ignition diode

BYX133GL

PACKAGE OUTLINE

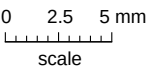
Hermetically sealed glass package; axial leaded; 2 leads

SOD119AB



**DIMENSIONS (mm are the original dimensions)**

| UNIT | b   | D max. | G max. | L min. |
|------|-----|--------|--------|--------|
| mm   | 0.8 | 2.5    | 5.5    | 31.8   |



**Note**

1. The marking band indicates the cathode.

| OUTLINE VERSION | REFERENCES |       |      |  | EUROPEAN PROJECTION                                                                   | ISSUE DATE |
|-----------------|------------|-------|------|--|---------------------------------------------------------------------------------------|------------|
|                 | IEC        | JEDEC | EIAJ |  |                                                                                       |            |
| SOD119AB        |            |       |      |  |  | 98-12-04   |

DEFINITIONS

| Data sheet status                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                       |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Objective specification                                                                                                                                                                                                                                                                                                                                                                                                                                   | This data sheet contains target or goal specifications for product development.       |
| Preliminary specification                                                                                                                                                                                                                                                                                                                                                                                                                                 | This data sheet contains preliminary data; supplementary data may be published later. |
| Product specification                                                                                                                                                                                                                                                                                                                                                                                                                                     | This data sheet contains final product specifications.                                |
| Limiting values                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                       |
| Limiting values given are 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 the 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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