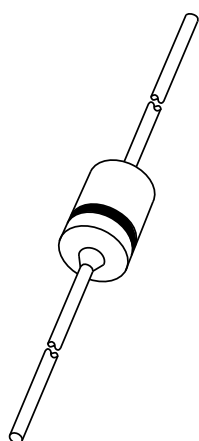


# DATA SHEET



## **BA315** Low-voltage stabistor

Product specification  
Supersedes data of April 1992  
File under Discrete Semiconductors, SC01

1996 Mar 21

Low-voltage stabistor

BA315

FEATURES

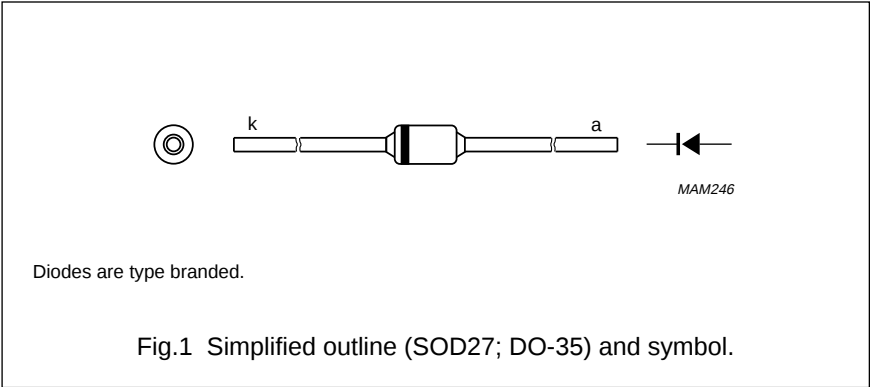
- Low-voltage stabilization
- Forward voltage range:  
480 mV to 1050 mV
- Total power dissipation:  
max. 350 mW.

APPLICATIONS

- Low-voltage stabilization e.g.
  - Bias stabilizer in class-B output stages
  - Clipping
  - Clamping
  - Meter protection.

DESCRIPTION

Low-voltage stabilization diode in a hermetically-sealed SOD27 (DO-35) glass package.



LIMITING VALUES

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

| SYMBOL           | PARAMETER                  | CONDITIONS               | MIN. | MAX. | UNIT |
|------------------|----------------------------|--------------------------|------|------|------|
| V <sub>R</sub>   | continuous reverse voltage |                          | –    | 5    | V    |
| I <sub>F</sub>   | continuous forward current |                          | –    | 100  | mA   |
| P <sub>tot</sub> | total power dissipation    | T <sub>amb</sub> = 25 °C | –    | 350  | mW   |
| T <sub>stg</sub> | storage temperature        |                          | –65  | +200 | °C   |
| T <sub>j</sub>   | junction temperature       |                          | –    | 200  | °C   |

## Low-voltage stabistor

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

| SYMBOL    | PARAMETER               | CONDITIONS                             | MIN. | TYP. | MAX. | UNIT     |
|-----------|-------------------------|----------------------------------------|------|------|------|----------|
| $V_F$     | forward voltage         | see Fig.2                              |      |      |      |          |
|           |                         | $I_F = 0.1\text{ mA}$                  | 480  | –    | 540  | mV       |
|           |                         | $I_F = 1\text{ mA}$                    | 590  | –    | 660  | mV       |
|           |                         | $I_F = 5\text{ mA}$                    | 670  | –    | 740  | mV       |
|           |                         | $I_F = 10\text{ mA}$                   | 710  | –    | 790  | mV       |
|           |                         | $I_F = 100\text{ mA}$                  | 875  | –    | 1050 | mV       |
| $I_R$     | reverse current         | $V_R = 5\text{ V}$                     | –    | –    | 1500 | nA       |
| $r_{dif}$ | differential resistance | $I_F = 1\text{ mA}; f = 1\text{ kHz}$  | –    | 50   | –    | $\Omega$ |
|           |                         | $I_F = 10\text{ mA}; f = 1\text{ kHz}$ | –    | 6    | 7    | $\Omega$ |
| $S_F$     | temperature coefficient | $I_F = 1\text{ mA}$                    | –    | –2.1 | –    | mV/K     |
| $C_d$     | diode capacitance       | $V_R = 0\text{ V}; f = 1\text{ MHz}$   | –    | –    | 3    | pF       |

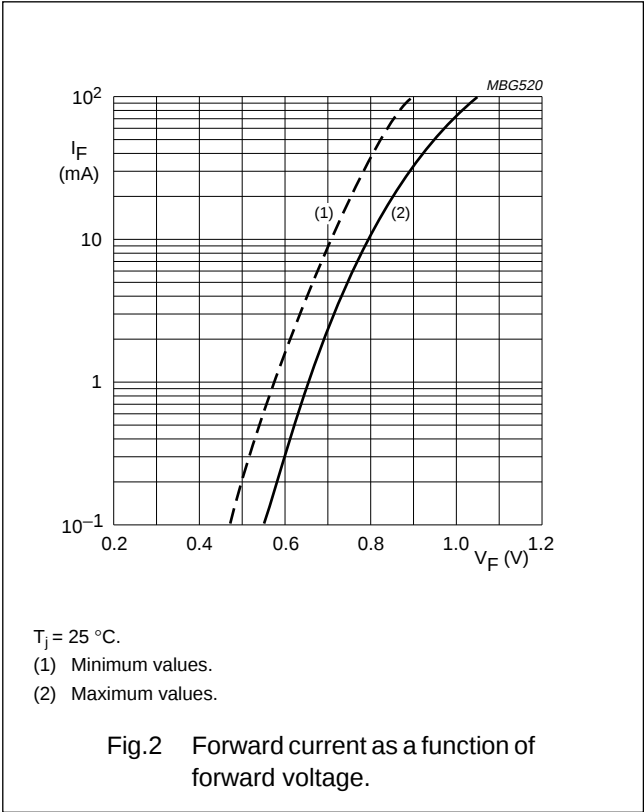
**THERMAL CHARACTERISTICS**

| SYMBOL         | PARAMETER                                     | CONDITIONS          | VALUE | UNIT |
|----------------|-----------------------------------------------|---------------------|-------|------|
| $R_{th\ j-tp}$ | thermal resistance from junction to tie-point | 8 mm from the body  | 300   | K/W  |
| $R_{th\ j-a}$  | thermal resistance from junction to ambient   | maximum lead length | 600   | K/W  |

Low-voltage stabistor

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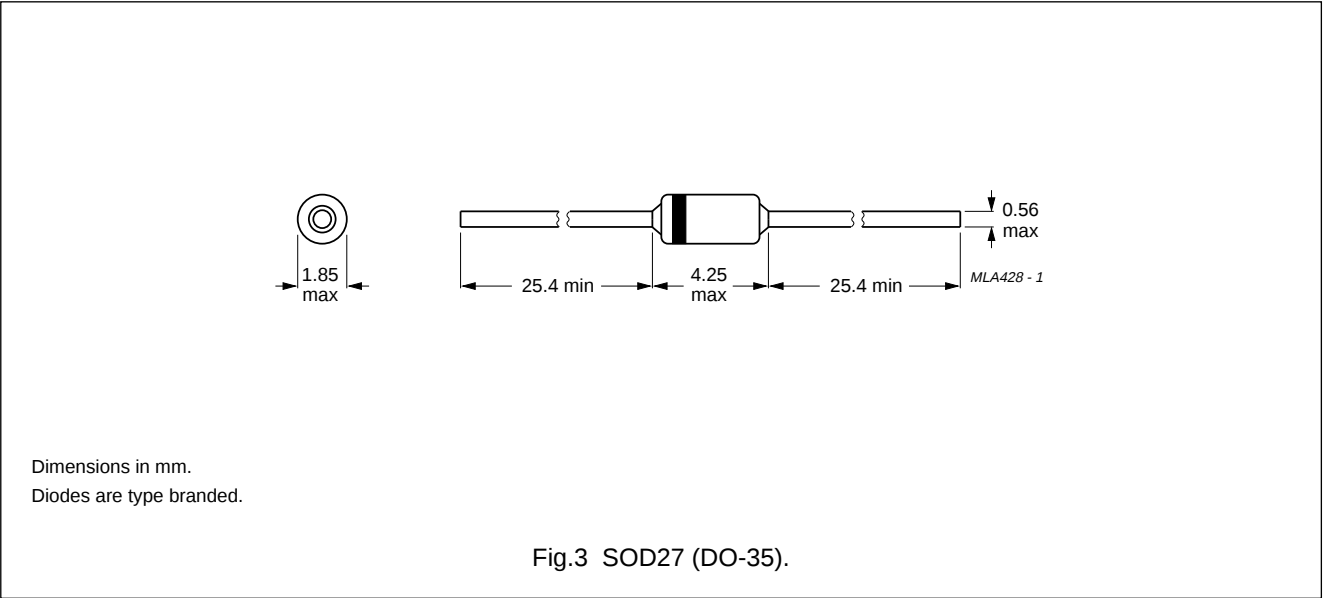
GRAPHICAL DATA



Low-voltage stabistor

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PACKAGE OUTLINE



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.                                                                                                                                                                                                                                                                                                                                                       |                                                                                       |

LIFE SUPPORT APPLICATIONS

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