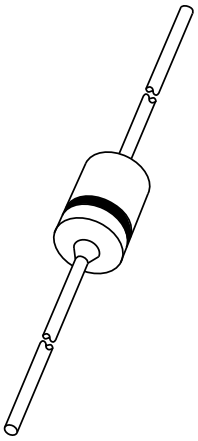
DATA SHEET



BA315
Low-voltage stabistor

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

1996 Mar 21

Philips
Semiconductors

PHILIPS

Low-voltage stabistor BA315

FEATURES

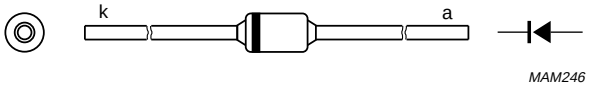
- Low-voltage stabilization
- Forward voltage range: 480 mV to 1050 mV
- Total power dissipation: max. 350 mW.

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.



Diodes are type branded.

Fig.1 Simplified outline (SOD27; DO-35) and symbol.

LIMITING VALUES

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V_R	continuous reverse voltage		–	5	V
I_F	continuous forward current		–	100	mA
P_{tot}	total power dissipation	T_{amb} = 25 °C	–	350	mW
T_{stg}	storage temperature		–65	+200	°C
T_j	junction temperature		–	200	°C

ELECTRICAL CHARACTERISTICS

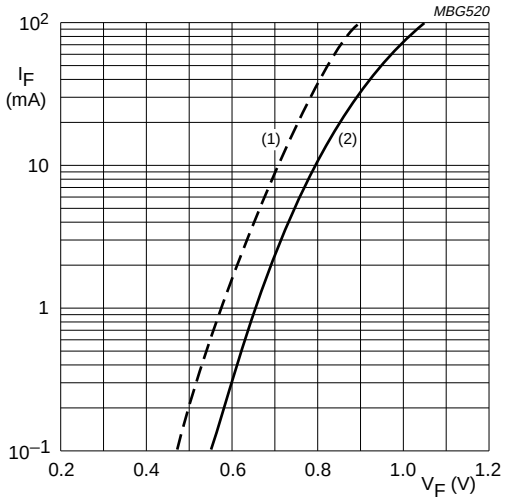
T_j = 25 °C unless otherwise specified.

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

THERMAL CHARACTERISTICS

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

GRAPHICAL DATA



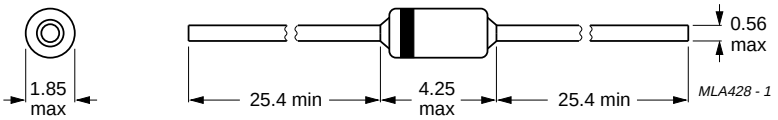
T_j = 25 °C.

(1) Minimum values.

(2) Maximum values.

Fig.2 Forward current as a function of forward voltage.

PACKAGE OUTLINE



Dimensions in mm.
Diodes are type branded.

Fig.3 SOD27 (DO-35).

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

These products are not designed for use in life support appliances, devices, or systems where malfunction of these products can reasonably be expected to result in personal injury. Philips customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify Philips for any damages resulting from such improper use or sale.