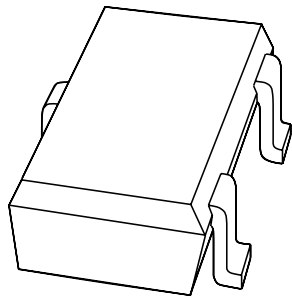


DISCRETE SEMICONDUCTORS

DATA SHEET



BAP51-05W General purpose PIN diode

Objective specification

1999 Aug 26

Philips
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General purpose PIN diode

BAP51-05W

FEATURES

- Two elements in common cathode configuration in a small-sized plastic SMD package
- Low diode capacitance
- Low diode forward resistance.

APPLICATIONS

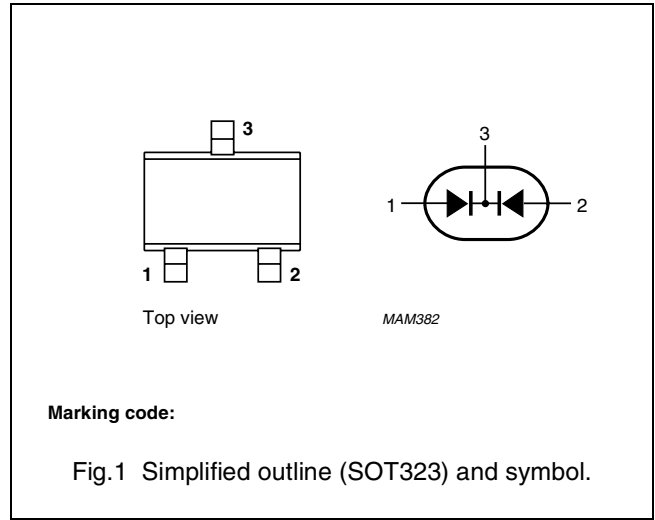
- General RF applications.

DESCRIPTION

Two planar PIN diodes in common cathode configuration in a SOT323 small plastic SMD package.

PINNING

PIN	DESCRIPTION
1	anode (a1)
2	anode (a2)
3	common cathode



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		–	60	V
I_F	continuous forward current		–	60	mA
P_{tot}	total power dissipation	$T_s = 90\text{ °C}$	–	tbf	mW
T_{stg}	storage temperature		–65	+150	°C
T_j	junction temperature		–65	+150	°C

General purpose PIN diode

BAP51-05W

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
Per diode						
V_F	forward voltage	$I_F = 50\text{ mA}$	–	0.95	1.1	V
V_R	reverse voltage	$I_R = 10\text{ }\mu\text{A}$	50	–	–	V
I_R	reverse current	$V_R = 50\text{ V}$	–	–	100	nA
C_d	diode capacitance	$V_R = 0; f = 1\text{ MHz}$	–	0.4	–	pF
		$V_R = 1\text{ V}; f = 1\text{ MHz}$	–	0.3	0.55	pF
		$V_R = 5\text{ V}; f = 1\text{ MHz}$	–	0.2	0.35	pF
r_D	diode forward resistance	$I_F = 0.5\text{ mA}; f = 100\text{ MHz}; \text{note } 1$	–	5.5	9	Ω
		$I_F = 1\text{ mA}; f = 100\text{ MHz}; \text{note } 1$	–	3.6	6.5	Ω
		$I_F = 10\text{ mA}; f = 100\text{ MHz}; \text{note } 1$	–	1.5	2.5	Ω
τ_L	charge carrier life time	when switched from $I_F = 10\text{ mA}$ to $I_R = 6\text{ mA}; R_L = 100\text{ }\Omega$; measured at $I_R = 3\text{ mA}$	–	555	–	ns
L_S	series inductance		–	1.2	–	nH

Note

1. Guaranteed on AQL basis: inspection level S4, AQL 1.0.

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	VALUE	UNIT
$R_{th\ j-s}$	thermal resistance from junction to soldering point	tbf	K/W

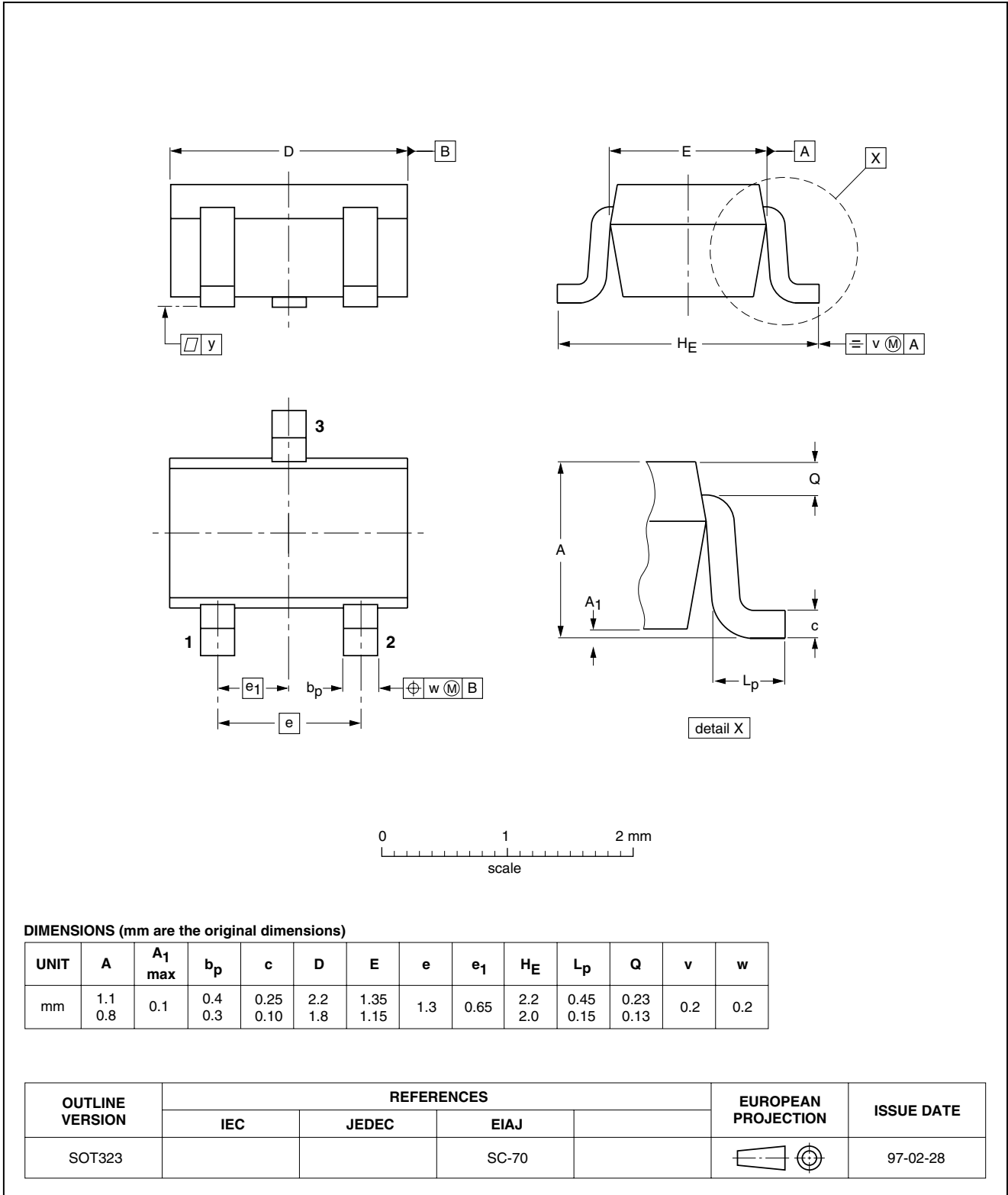
General purpose PIN diode

BAP51-05W

PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT323



General purpose PIN diode

BAP51-05W

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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