

## General purpose PIN diode

### FEATURES

- Low diode capacitance
- Low diode forward resistance.

### APPLICATIONS

- General RF applications.

### DESCRIPTION

General purpose PIN diode in a SOD323 small plastic SMD package.

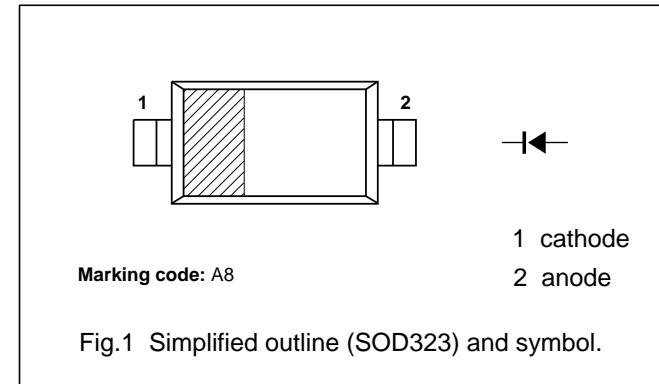


Fig.1 Simplified outline (SOD323) and symbol.

### LIMITING VALUES

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
$V_R$	continuous reverse voltage		–	50	V
$I_F$	continuous forward current		–	50	mA
$P_{tot}$	total power dissipation	$T_s = 90^\circ\text{C}$	–	500	mW
$T_{stg}$	storage temperature		-65	+150	°C
$T_j$	junction temperature		-65	+150	°C

### ELECTRICAL CHARACTERISTICS

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

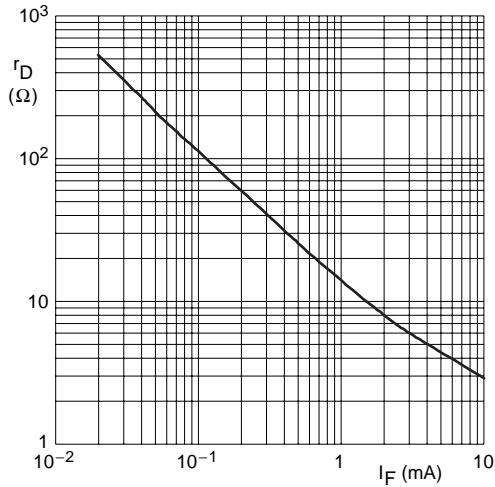
SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
$V_F$	forward voltage	$I_F = 50 \text{ mA}$	–	0.95	1.1	V
$V_R$	reverse voltage	$I_R = 10 \mu\text{A}$	50	–	–	V
$I_R$	reverse current	$V_R = 50 \text{ V}$	–	–	100	nA
$C_d$	diode capacitance	$V_R = 0; f = 1 \text{ MHz}$	–	0.4	–	pF
		$V_R = 1 \text{ V}; f = 1 \text{ MHz}$	–	0.3	0.55	pF
		$V_R = 5 \text{ V}; f = 1 \text{ MHz}$	–	0.2	0.35	pF
$r_D$	diode forward resistance	$I_F = 0.5 \text{ mA}; f = 100 \text{ MHz}; \text{ note 1}$	–	25	40	Ω
		$I_F = 1 \text{ mA}; f = 100 \text{ MHz}; \text{ note 1}$	–	14	25	Ω
		$I_F = 10 \text{ mA}; f = 100 \text{ MHz}; \text{ note 1}$	–	3	5	Ω

### Note

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

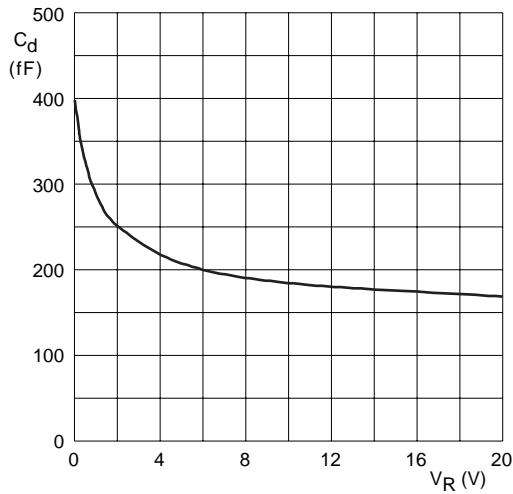
### THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	VALUE	UNIT
$R_{thj-s}$	thermal resistance from junction to soldering point	85	K/W

**GRAPHICAL DATA**


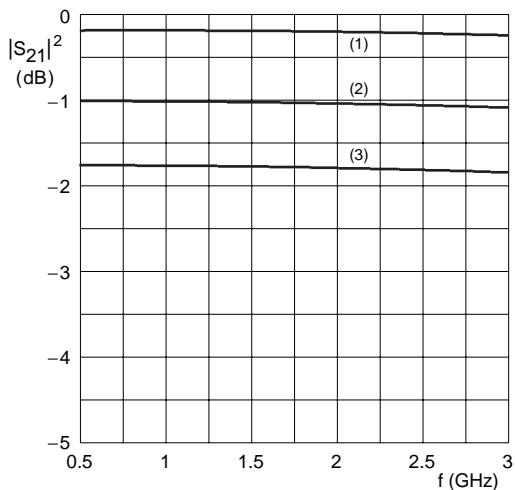
$f = 100 \text{ MHz}; T_j = 25^\circ\text{C}$ .

Fig.2 Forward resistance as a function of forward current; typical values.



$f = 1 \text{ MHz}; T_j = 25^\circ\text{C}$ .

Fig.3 Diode capacitance as a function of reverse voltage; typical values.

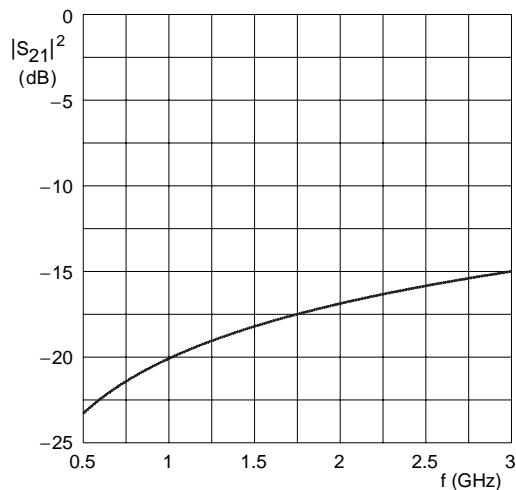


(1)  $I_F = 10 \text{ mA}$ .      (2)  $I_F = 1 \text{ mA}$ .      (3)  $I_F = 0.5 \text{ mA}$ .

Diode inserted in series with a  $50 \Omega$  stripline circuit and biased via the analyzer Tee network.

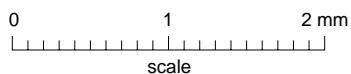
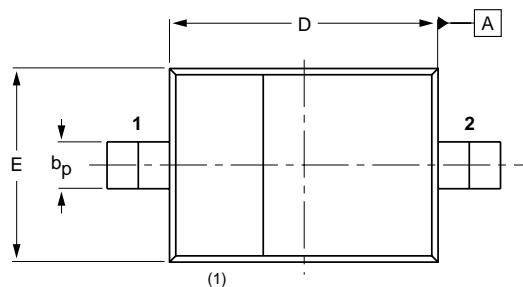
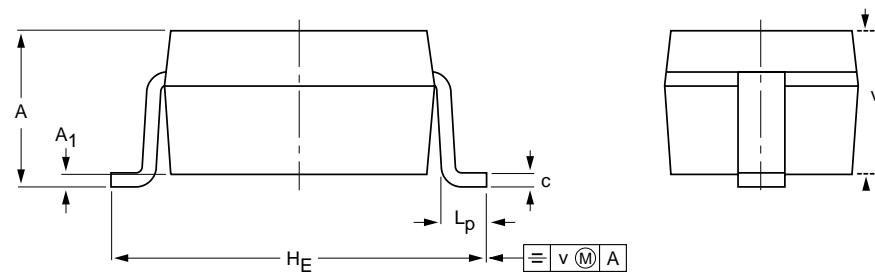
$T_{amb} = 25^\circ\text{C}$ .

Fig.4 Insertion loss ( $|S_{21}|^2$ ) of the diode as a function of frequency; typical values.



Diode zero biased and inserted in series with a  $50 \Omega$  stripline circuit.  
 $T_{amb} = 25^\circ\text{C}$ .

Fig.5 Isolation ( $|S_{21}|^2$ ) of the diode as a function of frequency; typical values.

**PACKAGE OUTLINE**
**Plastic surface mounted package; 2 leads**
**SOD323**

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

UNIT	A	A <sub>1</sub>	b <sub>p</sub>	c	D	E	H <sub>E</sub>	L <sub>p</sub>	v	
mm	1.0	0.10	0.35	0.15	1.8	1.40	2.7	0.40	0.90	
---		- 0.00	0.25	0.08	1.6	1.20	2.5	0.25	0.80	

**Note**

1. The marking bar indicates the cathode.