

## General purpose PIN diode

**BAP51 – 02**

### FEATURES

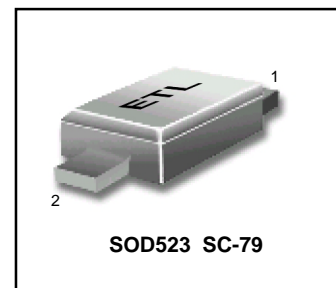
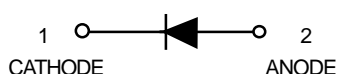
- Low diode capacitance
- Low diode forward resistance.

### APPLICATIONS

- General RF applications.

### DESCRIPTION

General purpose PIN diode in a SOD523 small SMD plastic package.



**LIMITING VALUES** In accordance with the Absolute Maximum Rating System (IEC 60134).

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
$V_R$	continuous reverse voltage		–	60	V
$I_F$	continuous forward current		–	50	mA
$P_{tot}$	total power dissipation	$T_s = 90^\circ\text{C}$	–	715	mW
$T_{stg}$	storage temperature		-65	+150	$^\circ\text{C}$
$T_j$	junction temperature		-65	+150	$^\circ\text{C}$

**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	$I_R = 10\text{ mA}$	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	$\Omega$
		$I_F = 1\text{ mA}; f = 100\text{ MHz}; \text{note 1}$	–	3.6	6.5	$\Omega$
		$I_F = 10\text{ mA}; f = 100\text{ MHz}; \text{note 1}$	–	1.5	2.5	$\Omega$

### 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	85	K/W

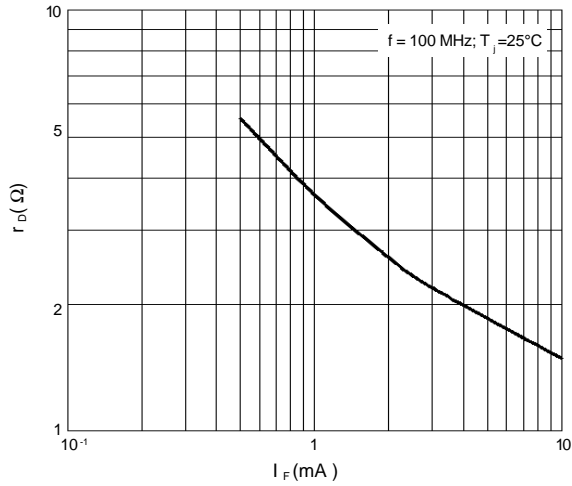


Fig.1 Forward resistance as a function of forward current; typical values.

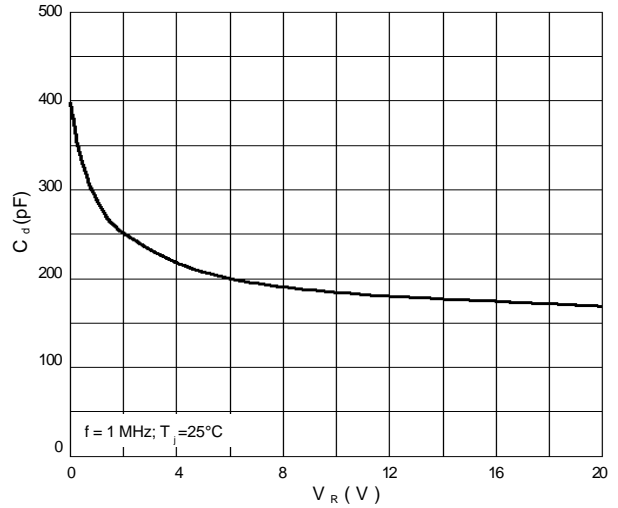


Fig.2 Diode capacitance as a function of reverse voltage; typical values.

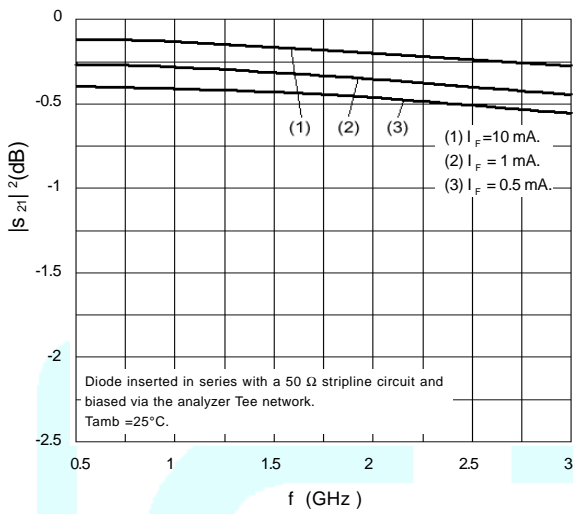


Fig.3 Insertion loss ( $|s_{21}|^2$ ) of the diode in on-state as a function of frequency; typical values.

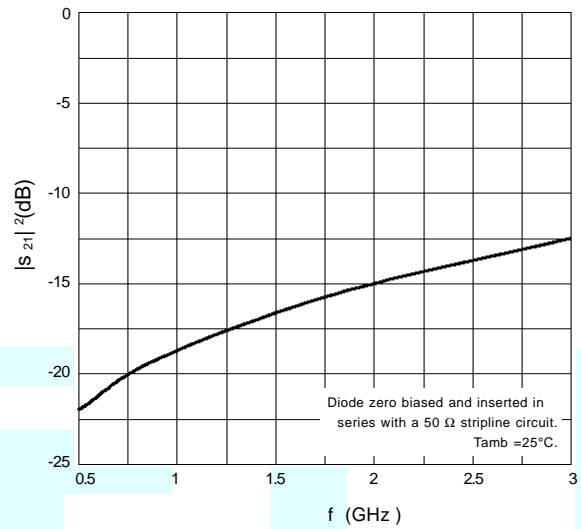


Fig.4 Isolation ( $|s_{21}|^2$ ) of the diode in off-state as a function of frequency; typical values.