



BAR63J

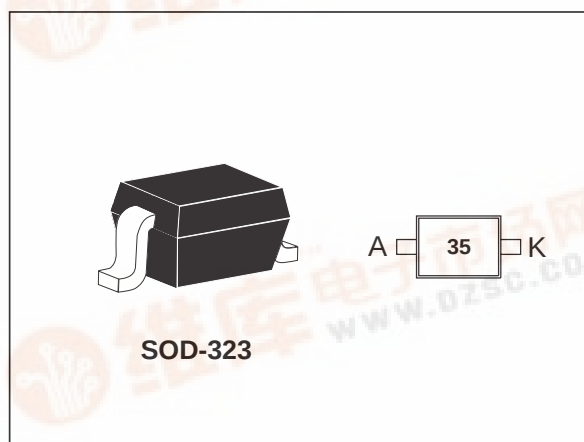
PIN DIODE

FEATURES AND BENEFITS

- Pin diode for high speed switching of RF signal
- Low forward voltage
- Very low capacitance

DESCRIPTION

Single pin diode in SOD-323 package. This diode is intended to be used in mobile phone to switch the RF signal.



ABSOLUTE RATINGS (limiting values)

Symbol	Parameter	Value	Unit
V_R	Continuous reverse voltage	50	V
I_F	Continuous forward current	100	mA
P_{tot}	Power Dissipation $T_s < 55^\circ\text{C}$	250	mW
T_{stg}	Storage temperature range	- 65 to +150	$^\circ\text{C}$
T_j	Maximum junction temperature	150	$^\circ\text{C}$
TL	Maximum temperature for soldering	260	$^\circ\text{C}$

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th(j-a)}$	Junction to ambient (see note 1)	550	$^\circ\text{C/W}$

Note 1: Epoxy board with recommended pad layout.

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STATIC ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Tests Conditions		Min.	Typ.	Max.	Unit
V_F	Forward voltage drop	$T_{amb} = 25^{\circ}\text{C}$	$I_F = 100\text{ mA}$		0.95	1.2	V
I_R	Continuous reverse current	$T_{amb} = 25^{\circ}\text{C}$	$V_R = 50\text{ V}$			50	nA
V_{BR}	Reverse avalanche breakdown voltage	$I_R = 5\text{ }\mu\text{A}$		50			V

ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Tests Conditions		Min.	Typ.	Max.	Unit
C_t	Diode capacitance	$V_R = 0\text{ V}$	$F = 1\text{ MHz}$		0.4		pF
		$V_R = 5\text{ V}$	$F = 1\text{ MHz}$		0.21	0.3	
r_f	Forward resistance	$I_F = 5\text{ mA}$	$F = 100\text{ MHz}$		1.8	2	Ohm
L_s	Series inductance				1.8		nH
t_{rr}	Charge carrier life time	$I_F = 10\text{ mA}$	$I_R = 10\text{ mA}$ $I_R = 6\text{ mA}$		125		nS

Fig. 1: Forward current versus ambient temperature (epoxy board with recommended pad layout).

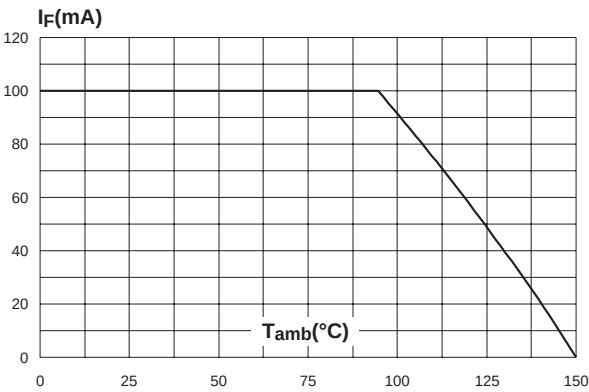


Fig. 2: Average forward power dissipation versus average forward current.

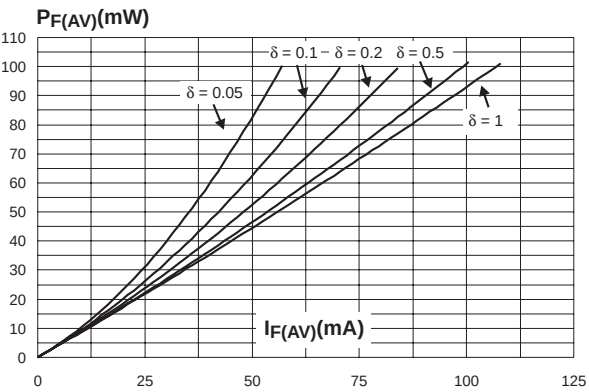


Fig. 3: Junction capacitance versus reverse voltage applied (typical values).

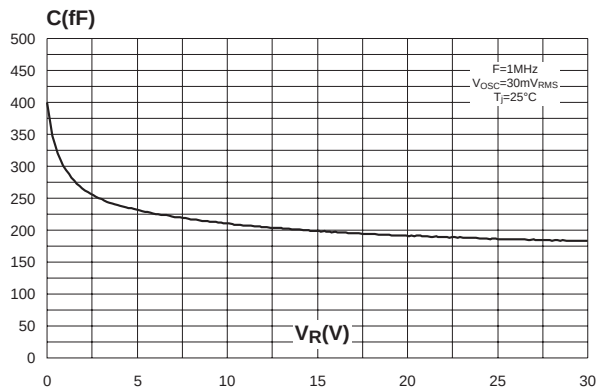


Fig. 4: Forward resistance versus forward current (typical values).

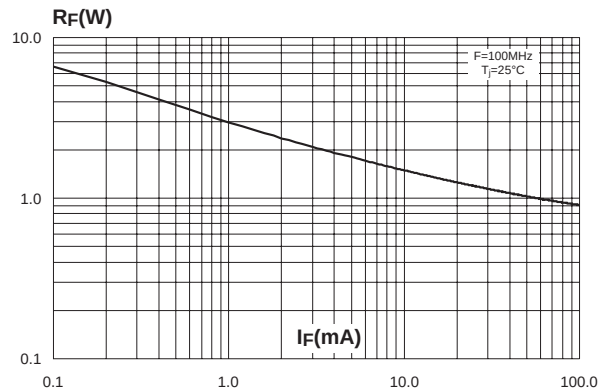


Fig. 5: Thermal resistance junction to ambient versus copper surface under each lead (printed circuit board, epoxy FR4, $\text{Cu}=35\mu\text{m}$).

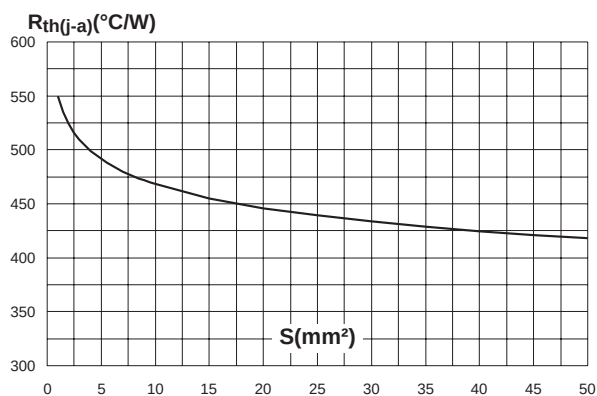


Fig. 6: Insertion losses from antenna to receiver at $V_{BIAS} = 0\text{V}$ and 2.7V .

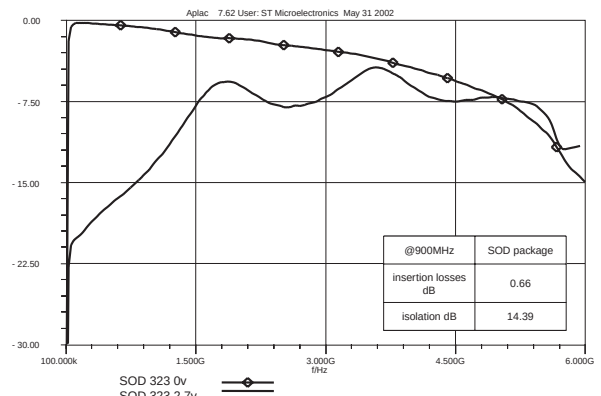


Fig. 7: Insertion losses from transceiver to receiver at $V_{BIAS} = 0\text{V}$ and 2.7V .

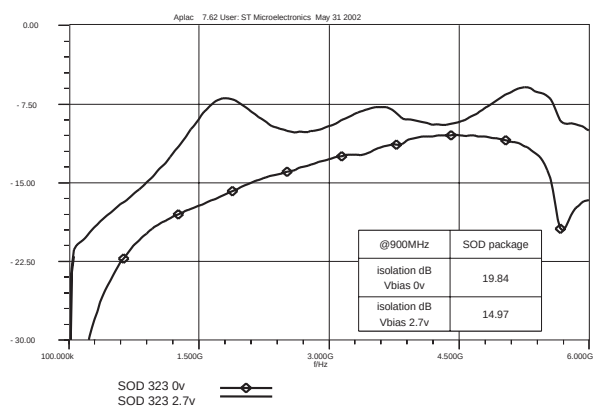
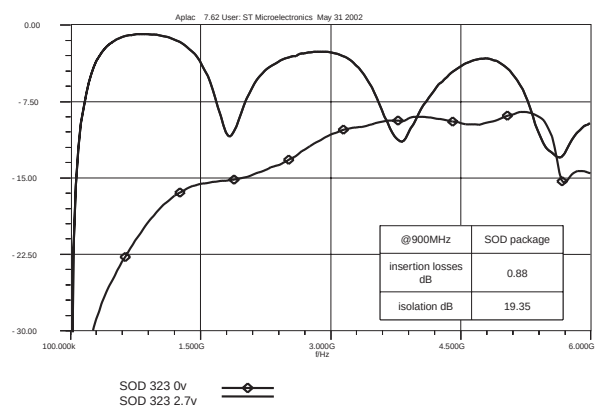


Fig. 8: Insertion losses from transceiver to antenna at $V_{BIAS} = 0\text{V}$ and 2.7V .



PACKAGE MECHANICAL DATA
SOD-323

REF.	DIMENSIONS			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A		1.17		0.046
A1	0	0.1	0	0.004
b	0.25	0.44	0.01	0.017
c	0.1	0.25	0.004	0.01
D	1.52	1.8	0.06	0.071
E	1.11	1.45	0.044	0.057
H	2.3	2.7	0.09	0.106
L	0.1	0.46	0.004	0.02
Q1	0.1	0.41	0.004	0.016

MARKING

Type	Marking	Package	Weight	Base qty	Delivery mode
BAR63J	35	SOD-323	0.005g	3000	Tape & reel

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