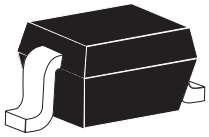
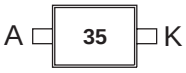
BAR63J

PIN DIODE

FEATURES AND BENEFITS

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





SOD-323

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	$T_s < 55°C$	250	mW
T_{stg}	Storage temperature range		- 65 to +150	°C
Tj	Maximum junction temperature		150	°C
TL	Maximum temperature for soldering		260	°C

THERMAL RESISTANCE

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

Note 1: Epoxy board with recommended pad layout.

STATIC ELECTRICAL CHARACTERISTICS

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

ELECTRICAL CHARACTERISTICS

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

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

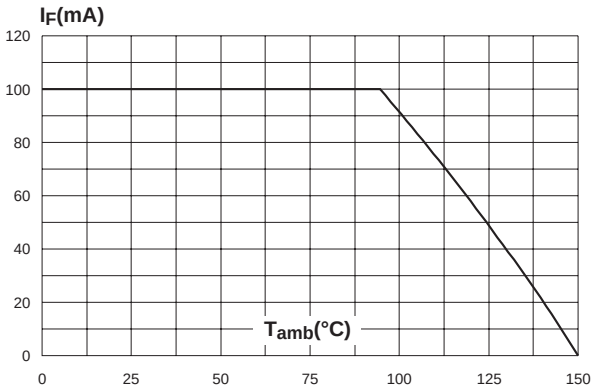


Fig. 2: Average forward power dissipation versus average forward current.

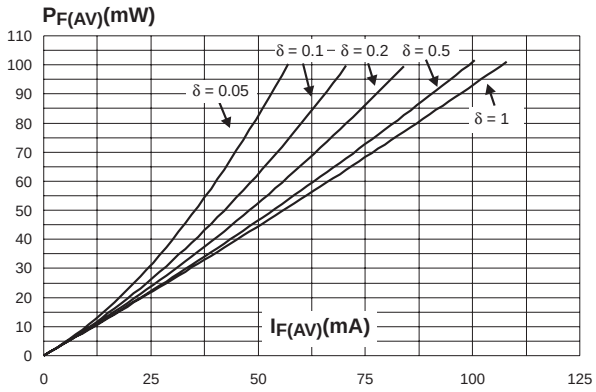


Fig. 3: Junction capacitance versus reverse voltage applied (typical values).

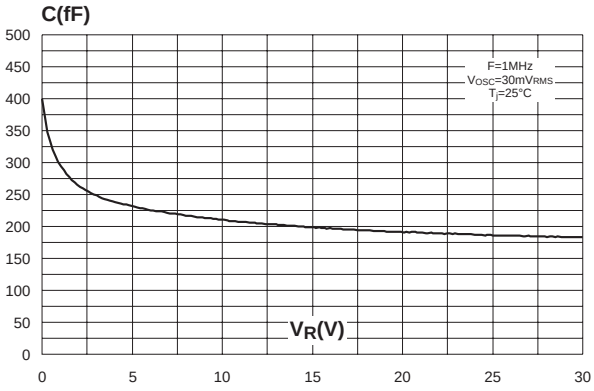


Fig. 4: Forward resistance versus forward current (typical values).

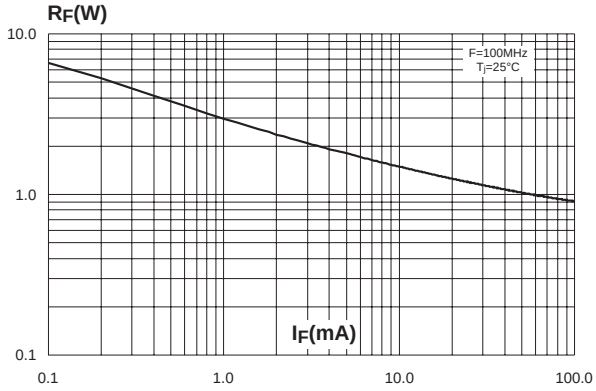


Fig. 5: Thermal resistance junction to ambient versus copper surface under each lead (printed circuit board, epoxy FR4, Cu=35µm).

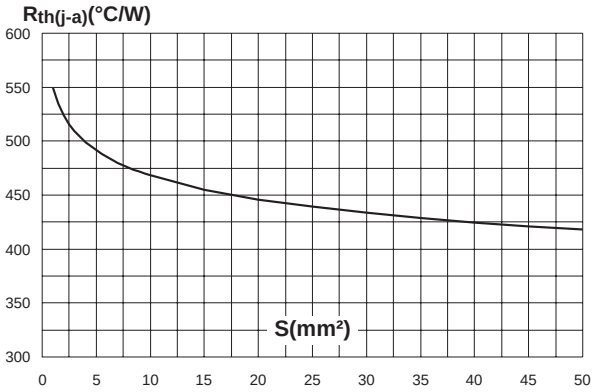


Fig. 6: Insertion losses from antenna to receiver at V_{BIAS} = 0V and 2.7V.

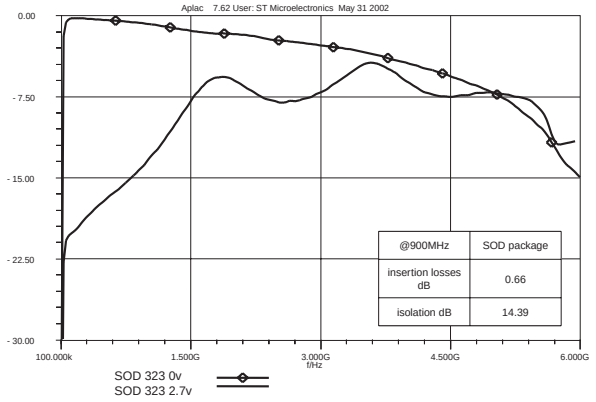


Fig. 7: Insertion losses from transceiver to receiver at V_{BIAS} = 0V and 2.7V.

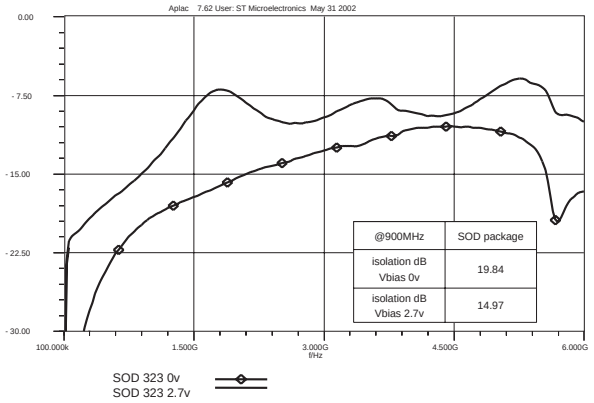
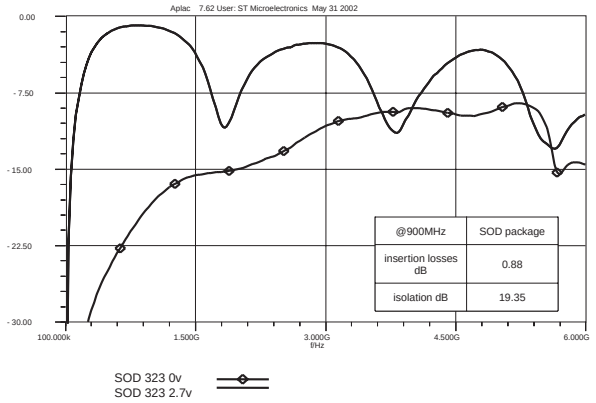
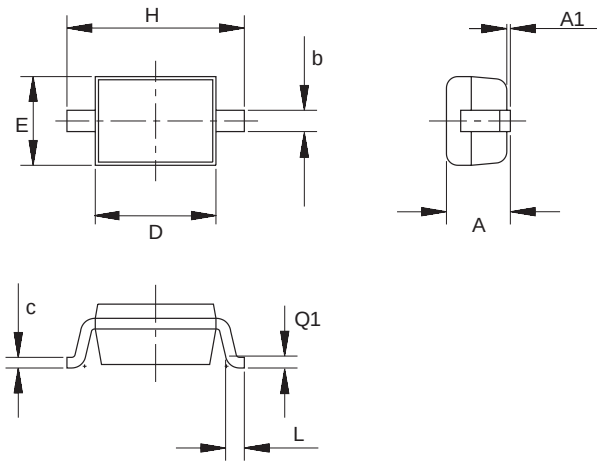


Fig. 8: Insertion losses from transceiver to antenna at V_{BIAS} = 0V and 2.7V.



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