



# 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.

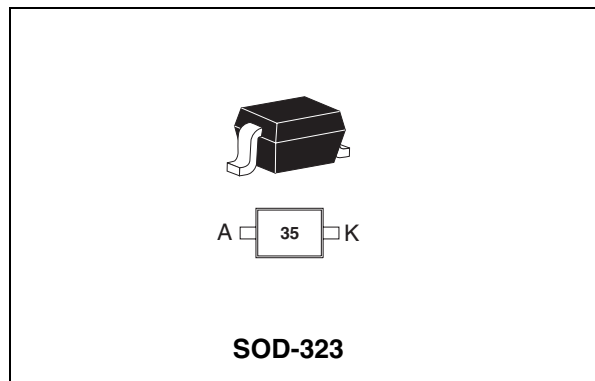


Table 1: Order Code

Part Number	Marking
BAR63J	35

Table 2: 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	$T_s < 55^\circ\text{C}$	mW
$T_{stg}$	Storage temperature range	-65 to + 150	$^\circ\text{C}$
$T_j$	Maximum operating junction temperature	150	$^\circ\text{C}$
$T_L$	Maximum temperature for soldering	260	$^\circ\text{C}$

Table 3: Thermal Resistance

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

Note 1: Epoxy board with recommended pad layout.

## BAR63J

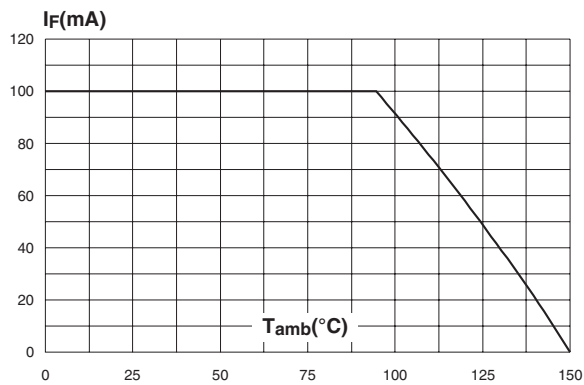
**Table 4: Static Electrical Characteristics**

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 breakdown voltage	$I_R = 5\mu\text{A}$	50			V

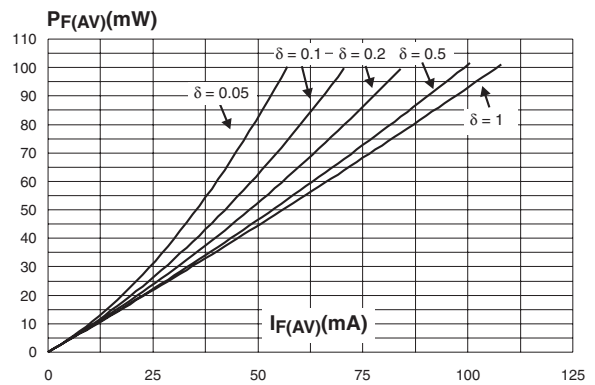
**Table 5: Electrical Characteristics**

Symbol	Parameter	Tests conditions	Min.	Typ.	Max.	Unit
C	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	$\Omega$
$L_S$	Series inductance			1.8		nH
$t_{rr}$	Reverse recovery time	$I_F = 10\text{ mA}$ $I_R = 6\text{ mA}$ $I_{rr} = 3\text{ mA}$		125		nS

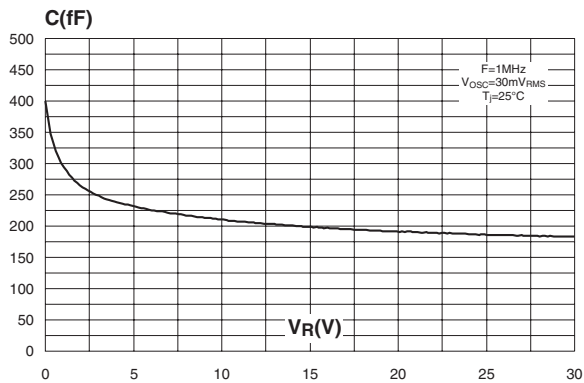
**Figure 1: Forward current versus ambient temperature (epoxy board with recommended pad layout)**



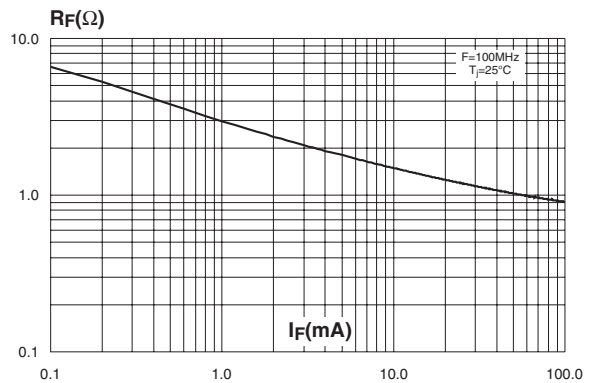
**Figure 2: Average forward power dissipation versus average forward current**



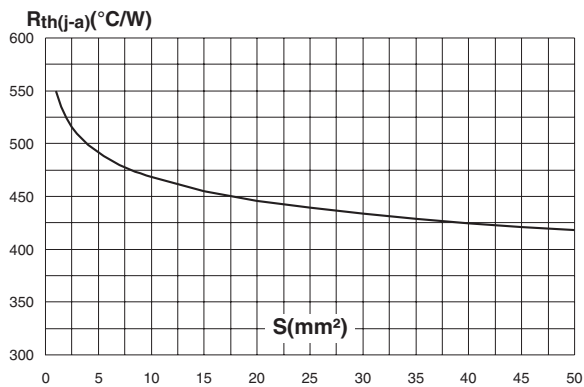
**Figure 3: Junction capacitance versus reverse voltage applied (typical values)**



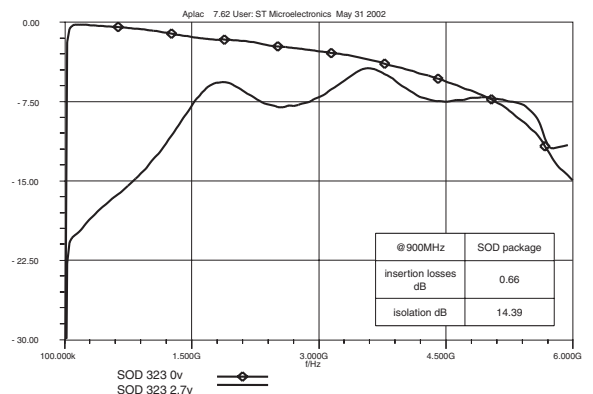
**Figure 4: Forward resistance versus forward current (typical values)**



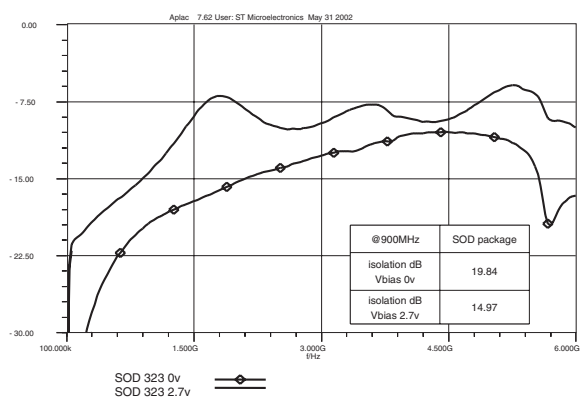
**Figure 5: Thermal resistance junction to ambient versus copper surface under each lead (printed circuit board, epoxy FR4, Cu=35μm)**



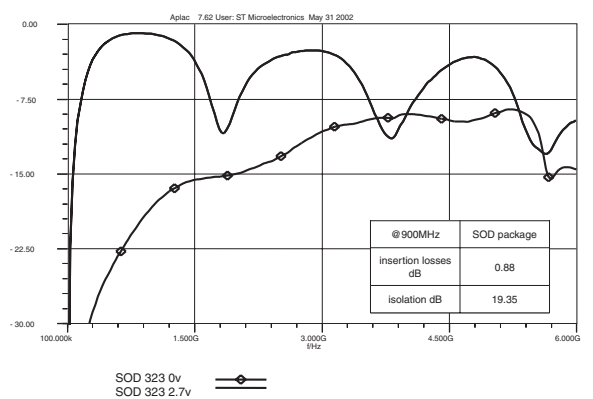
**Figure 6: Insertion losses from antenna to receiver at VBIAS = 0V and 2.7V**



**Figure 7: Insertion losses from transceiver to receiver at VBIAS = 0V and 2.7V**



**Figure 8: Insertion losses from transceiver to antenna at VBIAS = 0V and 2.7V**



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Figure 9: SOD-323 Package Mechanical Data

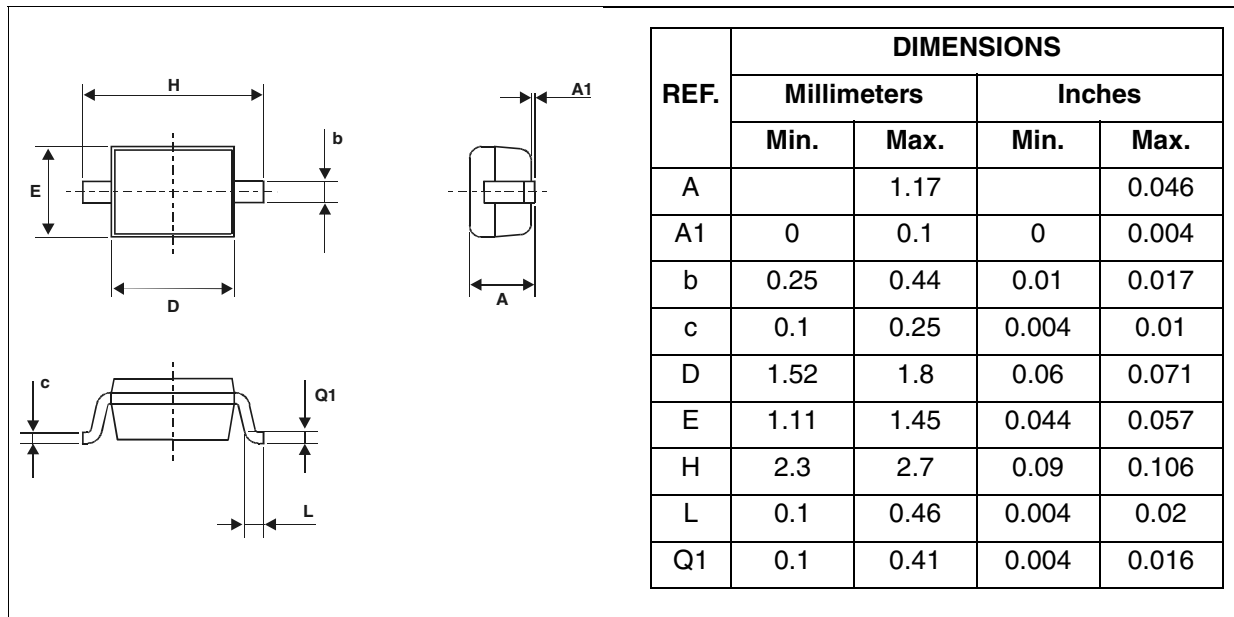


Figure 10: Foot Print Dimensions (in millimeters)

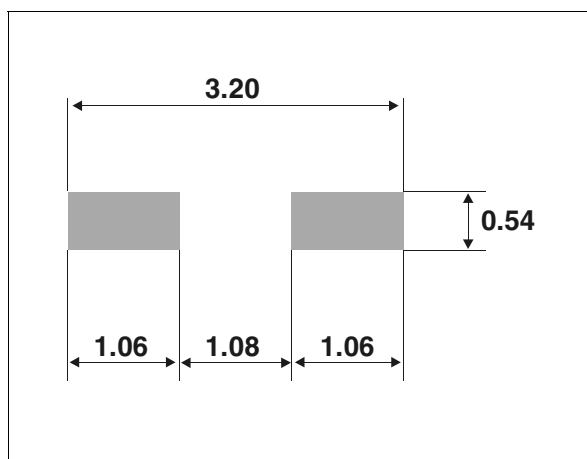


Table 6: Ordering Information

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

Table 7: Revision History

Date	Revision	Description of Changes
Apr-2003	2B	Last changes.
01-Mar-2005	3	Table 4 on page 2: 1. Reverse recovery time: $I_R$ change from 10mA to 6mA 2. Reverse recovery time: $I_R$ change from 6mA to 3mA

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