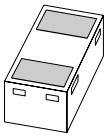
查询BAP51L供应商



BAP51L

Silicon PIN diode

Rev. 01 — 11 March 2005 Product data sheet

1. Product profile

1.1 General description

Planar PIN diode in a SOD882 leadless ultra small SMD plastic package.

1.2 Features

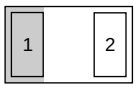
- High speed switching for RF signals
- Low diode capacitance
- Low forward resistance
- Very low series inductance
- For applications up to 3 GHz

1.3 Applications

- RF attenuators and switches

2. Pinning information

Table 1: Pinning

Pin	Description		Simplified outline	Symbol
1	cathode	[1]	 Transparent top view	sym006
2	anode			

[1] The marking bar indicates the cathode

3. Ordering information

Table 2: Ordering information

Type number	Package		
	Name	Description	Version
BAP51L	-	leadless ultra small plastic package; 2 terminals; body 1.0 × 0.6 × 0.5 mm	SOD882

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4. Marking

Table 3: Marking

Type number	Marking code
BAP51L	E2

5. Limiting values

Table 4: Limiting values

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

Symbol	Parameter	Conditions	Min	Max	Unit
V_R	reverse voltage		-	60	V
I_F	forward current		-	100	mA
P_{tot}	total power dissipation	T_{sp} = 90 °C	-	500	mW
T_{stg}	storage temperature		–65	+150	°C
T_j	junction temperature		–65	+150	°C

6. Thermal characteristics

Table 5: Thermal characteristics

Symbol	Parameter	Conditions	Typ	Unit
$R_{th(j-sp)}$	thermal resistance from junction to solder point		100	K/W

7. Characteristics

Table 6: Electrical characteristics

T_j = 25 °C unless otherwise specified.

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
V_F	forward voltage	I_F = 50 mA	-	0.95	1.1	V
I_R	reverse current	V_R = 50 V	-	-	100	nA
C_d	diode capacitance	f = 1 MHz; see Figure 2				
		V_R = 0 V	-	0.30	-	pF
		V_R = 1 V	-	0.23	0.4	pF
		V_R = 5 V	-	0.17	0.3	pF
r_D	diode forward resistance	f = 100 MHz; see Figure 1				
		I_F = 0.5 mA	-	5.3	9	Ω
		I_F = 1 mA	-	3.5	6.5	Ω
		I_F = 10 mA	-	1.4	2.5	Ω
		I_F = 100 mA	-	0.9	1.5	Ω
$\|s_{21}\|^2$	isolation	V_R = 0 V; see Figure 4				
		f = 900 MHz	-	19	-	dB
		f = 1800 MHz	-	15	-	dB
		f = 2450 MHz	-	13	-	dB

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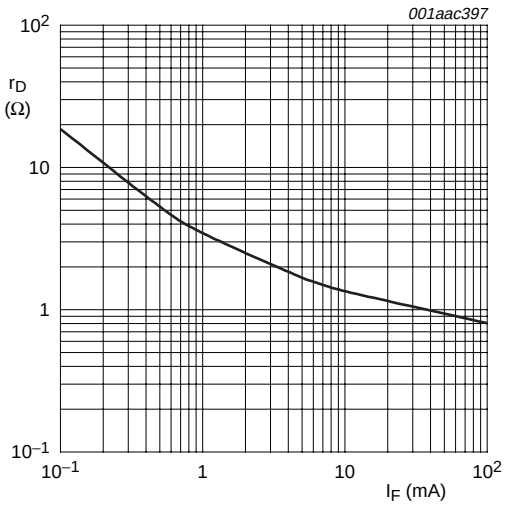
Table 6: Electrical characteristics *...continued*

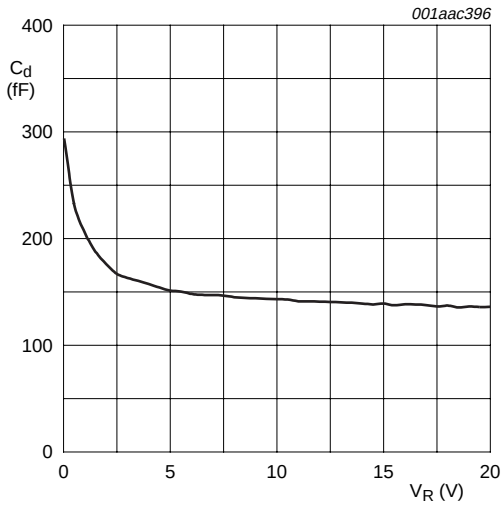
T_j = 25 °C unless otherwise specified.

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
$\|s_{21}\|^2$	insertion loss	I_F = 0.5 mA; see Figure 3				
		f = 900 MHz	-	0.4	-	dB
		f = 1800 MHz	-	0.39	-	dB
		f = 2450 MHz	-	0.4	-	dB
$\|s_{21}\|^2$	insertion loss	I_F = 1 mA; see Figure 3				
		f = 900 MHz	-	0.26	-	dB
		f = 1800 MHz	-	0.26	-	dB
		f = 2450 MHz	-	0.27	-	dB
$\|s_{21}\|^2$	insertion loss	I_F = 10 mA; see Figure 3				
		f = 900 MHz	-	0.11	-	dB
		f = 1800 MHz	-	0.11	-	dB
		f = 2450 MHz	-	0.12	-	dB
$\|s_{21}\|^2$	insertion loss	I_F = 100 mA; see Figure 3				
		f = 900 MHz	-	0.07	-	dB
		f = 1800 MHz	-	0.07	-	dB
		f = 2450 MHz	-	0.09	-	dB
τ_L	charge carrier life time	when switched from I_F = 10 mA to I_R = 6 mA; R_L = 100 Ω; measured at I_R = 3 mA	-	0.55	-	µs
L_S	series inductance	I_F = 100 mA; f = 100 MHz	-	0.6	-	nH



f = 100 MHz; T_j = 25 °C

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



f = 1 MHz; T_j = 25 °C

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

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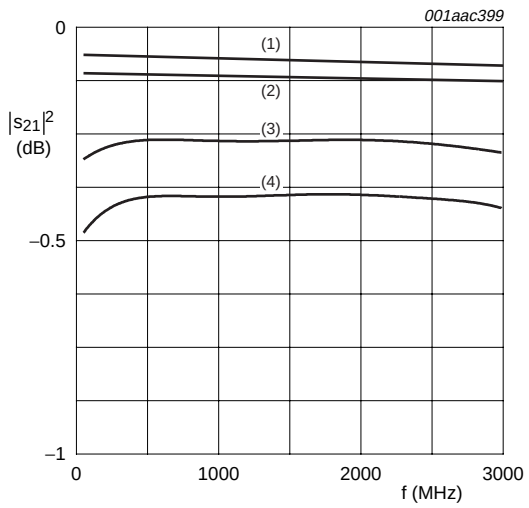


T_{amb} = 25 °C

(1) I_F = 100 mA

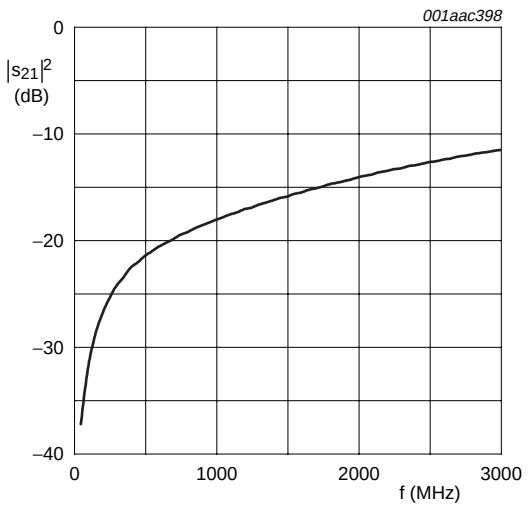
(2) I_F = 10 mA

(3) I_F = 1 mA

(4) I_F = 0.5 mA

Diode inserted in series with a 50 Ω stripline circuit and biased via the analyzer Tee network

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



T_{amb} = 25 °C

Diode zero biased and inserted in series with a 50 Ω stripline circuit

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

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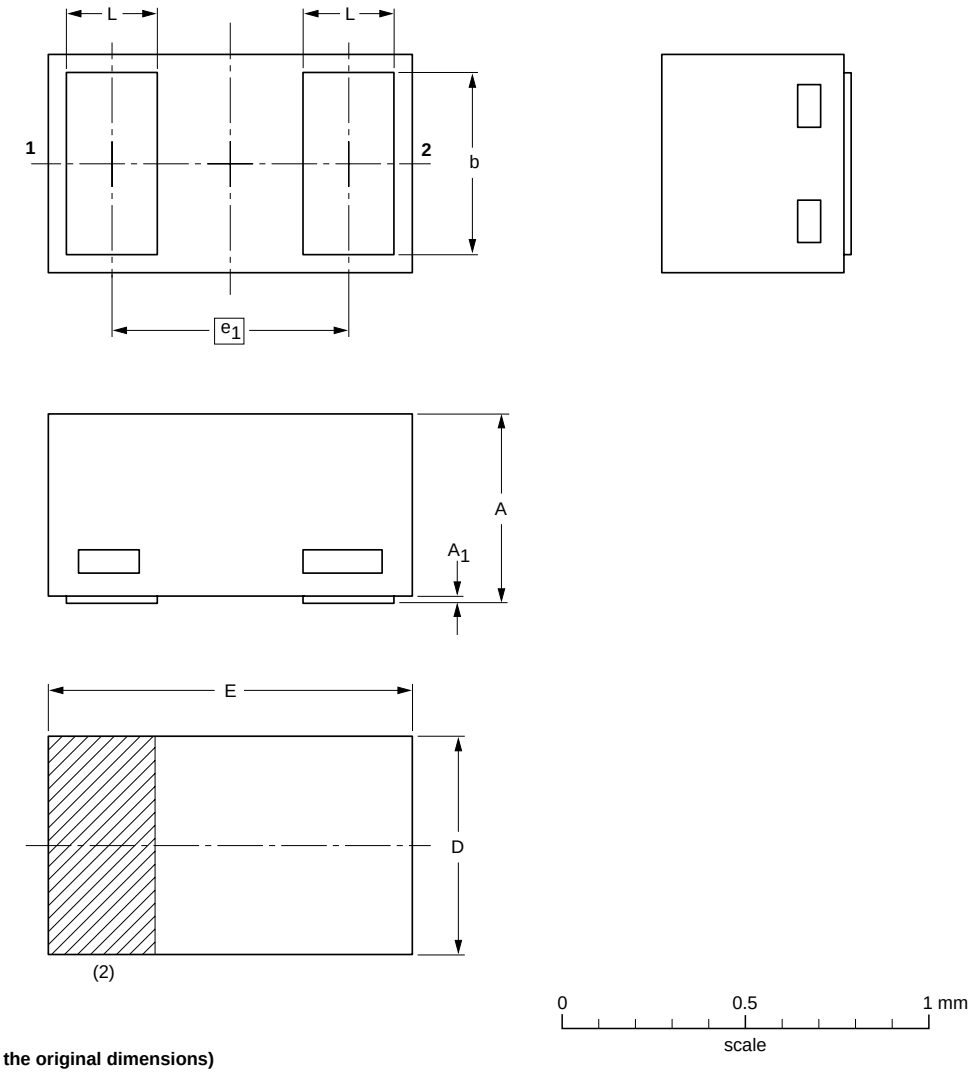
8. Package outline

Leadless ultra small plastic package; 2 terminals; body 1.0 x 0.6 x 0.5 mm **SOD882**



DIMENSIONS (mm are the original dimensions)

UNIT	A(1)	A_1 max.	b	D	E	e_1	L
mm	0.50 0.46	0.03	0.55 0.47	0.62 0.55	1.02 0.95	0.65	0.30 0.22

Notes

1. Including plating thickness
2. The marking bar indicates the cathode

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	JEITA			
SOD882						~~03-04-16~~ 03-04-17

Fig 5. Package outline SOD882

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9. Revision history

Table 7: Revision history

Document ID	Release date	Data sheet status	Change notice	Doc. number	Supersedes
BAP51L_1	20050311	Product data sheet	-	9397 750 14554	-

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10. Data sheet status

Level	Data sheet status [1]	Product status [2] [3]	Definition
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