

## Silicon PIN diode

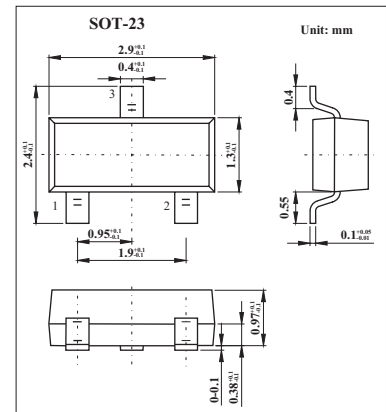
## BAP65-05

## ■ Features

- Two elements in common cathode configuration
- High voltage, current controlled
- RF resistor for RF switches
- Low diode capacitance
- Low diode forward resistance (low loss).

■ Absolute Maximum Ratings  $T_a = 25^\circ\text{C}$ 

Parameter	Symbol	Min	Max	Unit
continuous reverse voltage	$V_R$		30	V
continuous forward current	$I_F$		100	mA
total power dissipation $T_s \leq 90^\circ\text{C}$	$P_{tot}$		250	mW
storage temperature	$T_{stg}$	-65	+150	$^\circ\text{C}$
junction temperature	$T_j$	-65	+150	$^\circ\text{C}$
thermal resistance from junction to soldering point	$R_{th\ j-s}$		220	K/W



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## ■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Conditions	Typ	Max	Unit
forward voltage	V <sub>F</sub>	I <sub>F</sub> = 50 mA	0.95	1.1	V
reverse leakage current	V <sub>R</sub>	V <sub>R</sub> = 20 V		20	nA
diode capacitance	C <sub>d</sub>	V <sub>R</sub> = 0; f = 1 MHz	0.7		pF
		V <sub>R</sub> = 1 V; f = 1 MHz	0.575	0.9	
		V <sub>R</sub> = 3 V; f = 1 MHz	0.525	0.8	
		V <sub>R</sub> = 20 V; f = 1 MHz	0.425		
diode forward resistance	r <sub>D</sub>	I <sub>F</sub> = 1 mA; f = 100 MHz	1		Ω
		I <sub>F</sub> = 5 mA; f = 100 MHz; note 1	0.65	0.95	
		I <sub>F</sub> = 10 mA; f = 100 MHz; note 1	0.56	0.9	
		I <sub>F</sub> = 100 mA; f = 100 MHz	0.35		
isolation	s <sub>21</sub>   <sup>2</sup>	V <sub>R</sub> = 0; f = 900 MHz	9.4		dB
		V <sub>R</sub> = 0; f = 1800 MHz	4.8		
		V <sub>R</sub> = 0; f = 2450 MHz	3.1		
insertion loss	s <sub>21</sub>   <sup>2</sup>	I <sub>F</sub> = 1 mA; f = 900 MHz	0.1		dB
		I <sub>F</sub> = 1 mA; f = 1800 MHz	0.18		
		I <sub>F</sub> = 1 mA; f = 2450 MHz	0.28		
insertion loss	s <sub>21</sub>   <sup>2</sup>	I <sub>F</sub> = 5 mA; f = 900 MHz	0.08		dB
		I <sub>F</sub> = 5 mA; f = 1800 MHz	0.16		
		I <sub>F</sub> = 5 mA; f = 2450 MHz	0.26		
insertion loss	s <sub>21</sub>   <sup>2</sup>	I <sub>F</sub> = 10 mA; f = 900 MHz	0.07		dB
		I <sub>F</sub> = 10 mA; f = 1800 MHz	0.15		
		I <sub>F</sub> = 10 mA; f = 2450 MHz	0.25		
insertion loss	s <sub>21</sub>   <sup>2</sup>	I <sub>F</sub> = 100 mA; f = 900 MHz	0.06		dB
		I <sub>F</sub> = 100 mA; f = 1800 MHz	0.14		
		I <sub>F</sub> = 100 mA; f = 2450 MHz	0.24		
charge carrier life time	τ <sub>L</sub>	when switched from I <sub>F</sub> = 10 mA to I <sub>R</sub> = 6mA; R <sub>L</sub> = 100 Ω ,measured at I <sub>R</sub> = 3 mA	0.17		μ s
series inductance	L <sub>S</sub>	I <sub>F</sub> = 100 mA; f = 100 MHz	1.4		nH

Note

1. Guaranteed on AQL basis: inspection level S4, AQL 1.0.

## ■ Marking

Marking	7Kp
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