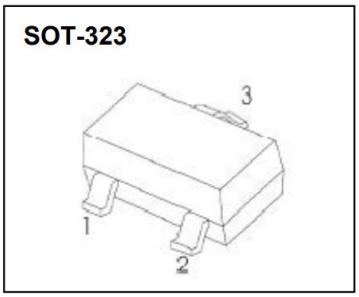
General purpose PIN diode



FEATURES

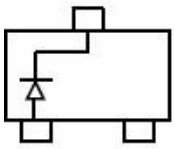
- Two elements in series configuration in a small SMD plastic package
- Low diode capacitance
- Low diode forward resistance.

APPLICATIONS

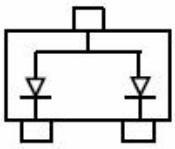
- General RF applications.

DESCRIPTION

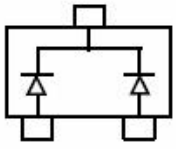
Two planar PIN diodes in series configuration in an SOT323 small SMD plastic package.



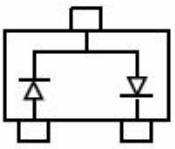
SMP1320W
MARKING:RL



SMP1320AW
MARKING:RL1



SMP1320CW
MARKING:RL3



SMP1320SW
MARKING:RL2

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

Parameter	Symbol	Minimum	Maximum	Units
Reverse voltage	V_R		50	V
Power dissipation @ 25 °C lead temperature	P_D		400	mW
Storage temperature	T_{STG}	–55	+150	°C
Operating temperature	T_A	–55	+150	°C
Electrostatic discharge:	ESD			
Charged Device Model (CDM), Class 4			1000	V
Human Body Model (HBM), Class 2			2000	V
Machine Model (MM), Class B			200	V

ELECTRICAL CHARACTERISTICS T = 25 °C unless otherwise specified.

Parameter	Symbol	Test Condition	Min	Typical	Max	Units
Reverse current	I_R	V_R = 50 V			10	µA
Capacitance[2]	C_T	F = 1 MHz, V = 30 V		0.23	0.30	pF
Resistance	R_S	F = 100 MHz				
		I = 1 mA		2.00		Ω
		I = 10 mA		0.75	0.90	Ω
Forward voltage	V_F	I_F = 10 mA		0.85	1.1	V
Carrier lifetime	TI	I_F = 10 mA		0.4		µs
I region width				7		µm

1 Performance is guaranteed only under the conditions listed in this table.

2 C_T @ 30 V is 0.45 pF maximum for the SMP1320-077LF.

Typical Performance Characteristics

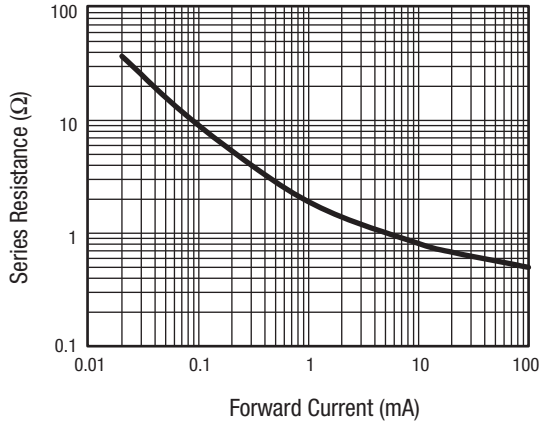


Figure 1. Series Resistance vs Current @ 100 MHz

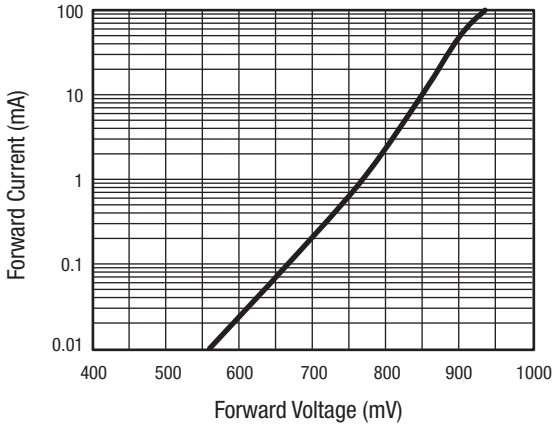


Figure 2. Forward Current vs Voltage

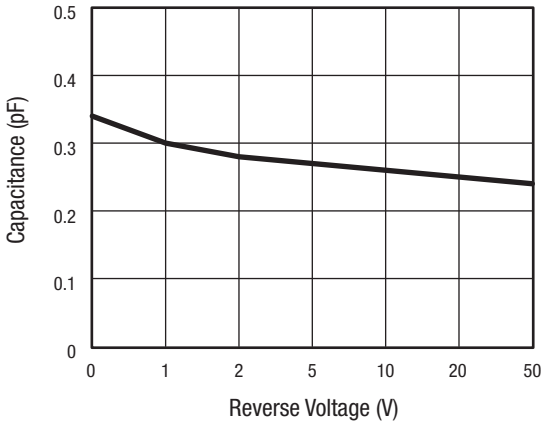


Figure 3. Capacitance vs Reverse Voltage (1 MHz to 1 GHz)

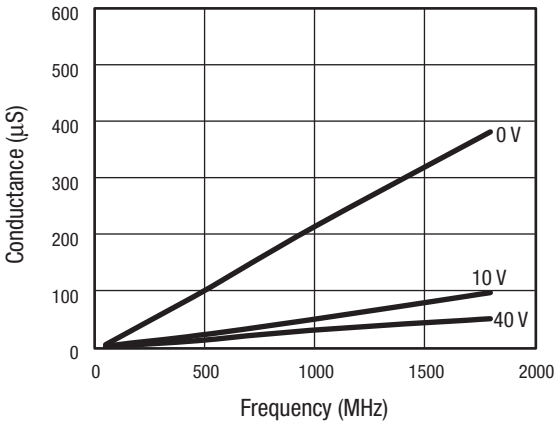


Figure 4. Conductance vs Frequency and Reverse Voltage