

Fast Switching Speed, Low Capacitance Plastic Packaged PIN Diodes



SMP1340 Series

Features

- Designed for Fast Speed Wireless Switch Applications
- 1.0 Ω Resistance, 0.3 pF Capacitance
- Multiple Package Configurations
- Designed for High Volume Wireless Applications
- Available in Tape and Reel Packaging



Description

The SMP1340 series of plastic packaged, surface mountable PIN diodes are designed for high volume switch applications from 10 MHz to beyond 2 GHz. The short carrier lifetime of typically 100 nS, combined with its thin I region width of nominally 8 μm , results in a fast speed RF switching PIN diode. The RF performance of the SMP1340 series is assured by virtue of its low capacitance (0.3 pF) and low resistance (1.0 Ω at 10 mA).

Absolute Maximum Ratings

Characteristic	Value
Reverse Voltage (V_R)	50 V
Power Dissipation @ 25°C Lead Temperature (P_D)	250 mW
Storage Temperature (T_{ST})	-65°C to +150°C
Operating Temperature (T_{OP})	-65°C to +150°C
ESD Human Body Model	Class 1B

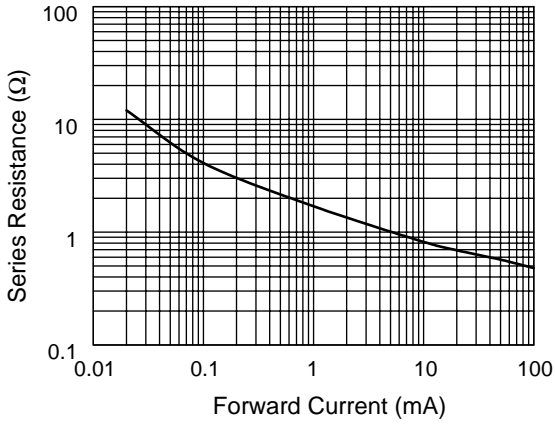
Diagram	Diagram	Diagram	Diagram	Diagram	Diagram
Single	Common Anode	Common Cathode	Series Pair	Single	Single
Marking: PS1	Marking: PS9	Marking: PS3	Marking: PS2		
SOT-23	SOT-23	SOT-23	SOT-23	SOD-323	SC-79
◆ SMP1340-001	◆ SMP1340-003	◆ SMP1340-004	◆ SMP1340-005	◆ SMP1340-011	◆ SMP1340-079
$L_S = 1.5$ nH	$L_S = 1.5$ nH	$L_S = 1.5$ nH	$L_S = 1.5$ nH	$L_S = 1.5$ nH	$L_S = 0.7$ nH

◆ Available through distribution.

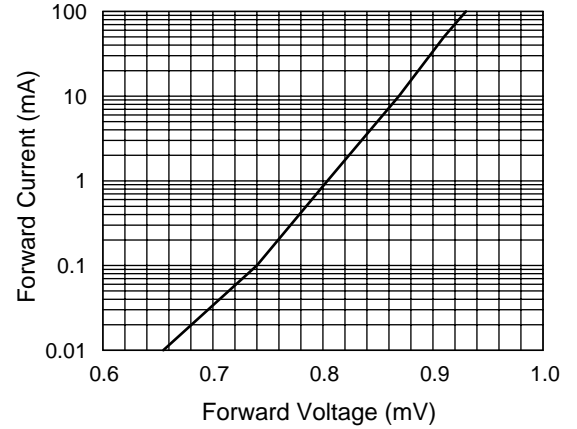
Electrical Specifications at 25°C

Parameter	Condition	Typ.	Max.	Unit
Reverse Current (I_R)	$V_R = 50$ V		10	μA
Capacitance (C_T)	$F = 1$ MHz, $V = 5$ V	0.21	0.30	pF
Resistance (R_S)	$F = 100$ MHz, $I = 1$ mA	1.7		Ω
Resistance (R_S)	$F = 100$ MHz, $I = 5$ mA	1.0	2.0	Ω
Resistance (R_S)	$F = 100$ MHz, $I = 10$ mA	0.85	1.2	Ω
Forward Voltage (V_F)	$I_F = 10$ mA	0.85		V
Carrier Lifetime (TI)	$I_F = 10$ mA	100		nS
I Region Width		0.80		μm

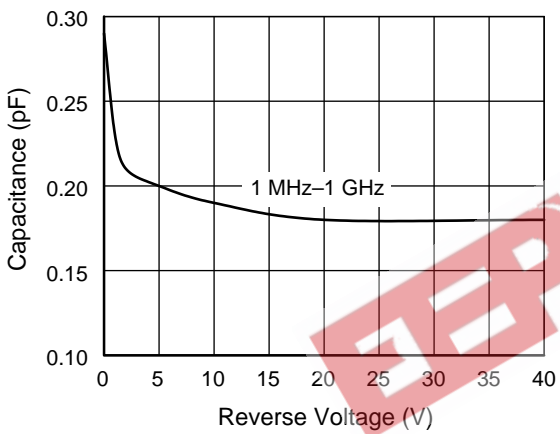
Typical Performance Data



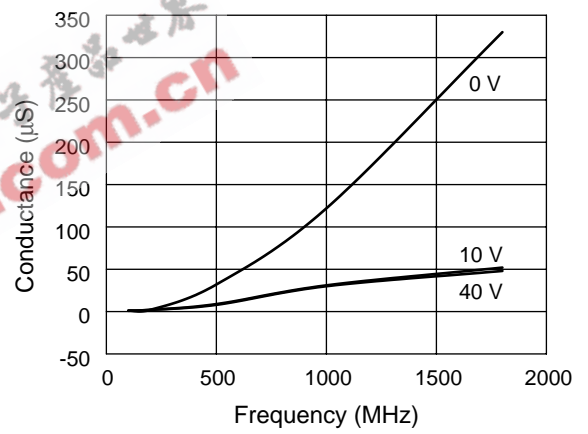
Series Resistance vs. Current @ 100 MHz



DC Characteristic

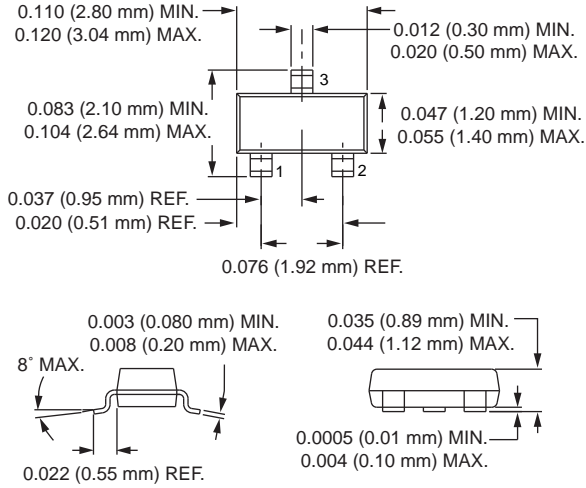


Capacitance vs. Reverse Voltage

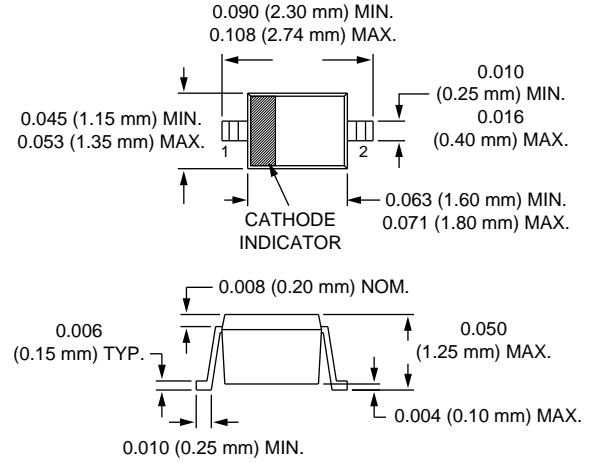


Conductance vs. Frequency

SOT-23



SOD-323



SC-79

