

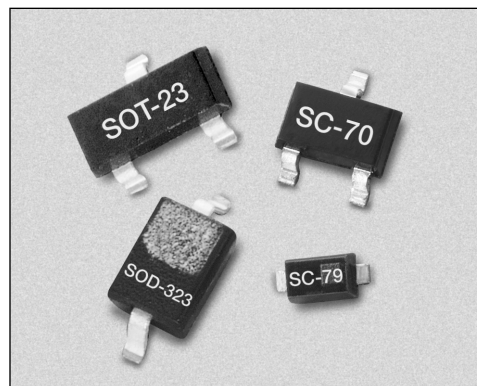
Fast Switching Speed, Low Capacitance Plastic Packaged PIN Diodes



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

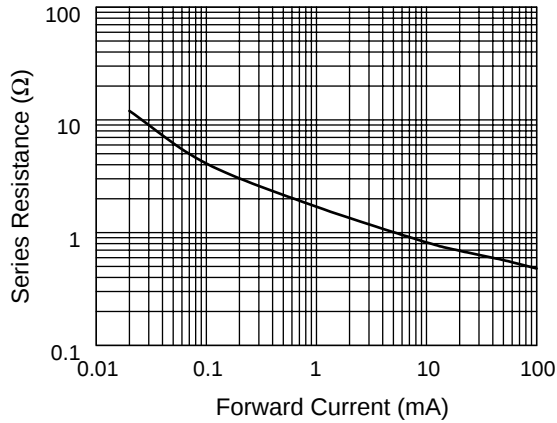
Single	Common Anode	Common Cathode	Series Pair	Single	Common Cathode	Single
Marking: PS1	Marking: PS9	Marking: PS3	Marking: PS2		Marking: PS3	
SOT-23	SOT-23	SOT-23	SOT-23	SOD-323	SC-70	SC-79
♦ SMP1340-001	♦ SMP1340-003	♦ SMP1340-004	♦ SMP1340-005	♦ SMP1340-011	♦ SMP1340-074	♦ SMP1340-079
$L_S = 1.5 \text{ nH}$	$L_S = 1.5 \text{ nH}$	$L_S = 1.5 \text{ nH}$	$L_S = 1.5 \text{ nH}$	$L_S = 1.5 \text{ nH}$	$L_S = 1.4 \text{ nH}$	$L_S = 0.7 \text{ nH}$

♦ Available through distribution.

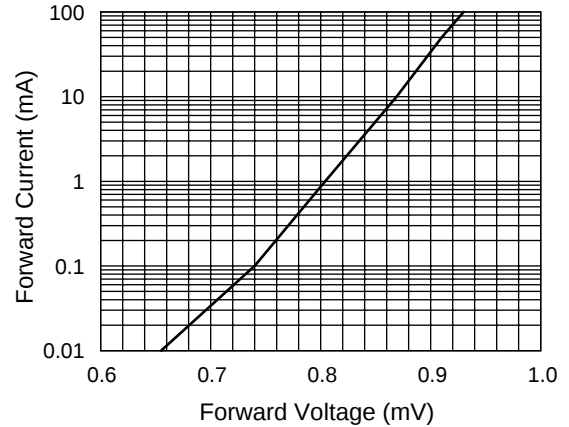
Electrical Specifications at 25°C

Parameter	Condition	Typ.	Max.	Unit
Reverse Current (I_R)	$V_R = 50 \text{ V}$		10	μA
Capacitance (C_T)	$F = 1 \text{ MHz}$, $V = 5 \text{ V}$	0.21	0.30	pF
Resistance (R_S)	$F = 100 \text{ MHz}$, $I = 1 \text{ mA}$	1.7		Ω
Resistance (R_S)	$F = 100 \text{ MHz}$, $I = 5 \text{ mA}$	1.0	2.0	Ω
Resistance (R_S)	$F = 100 \text{ MHz}$, $I = 10 \text{ mA}$	0.85	1.2	Ω
Forward Voltage (V_F)	$I_F = 10 \text{ mA}$	0.85		V
Carrier Lifetime (τ_I)	$I_F = 10 \text{ mA}$	100		nS
I Region Width		8		μm

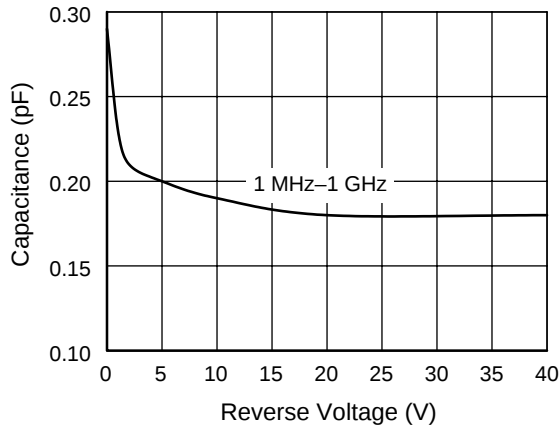
Typical Performance Data



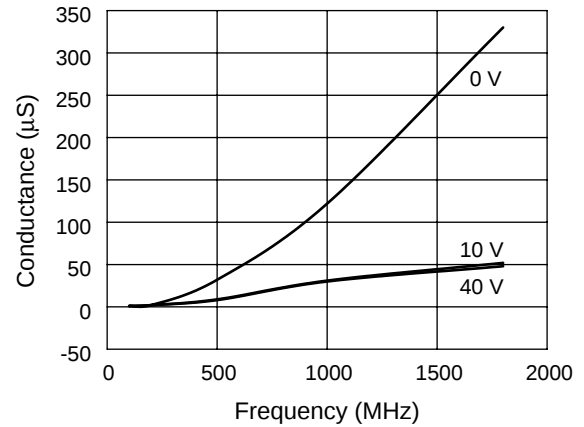
Series Resistance vs. Current @ 100 MHz



DC Characteristic



Capacitance vs. Reverse Voltage

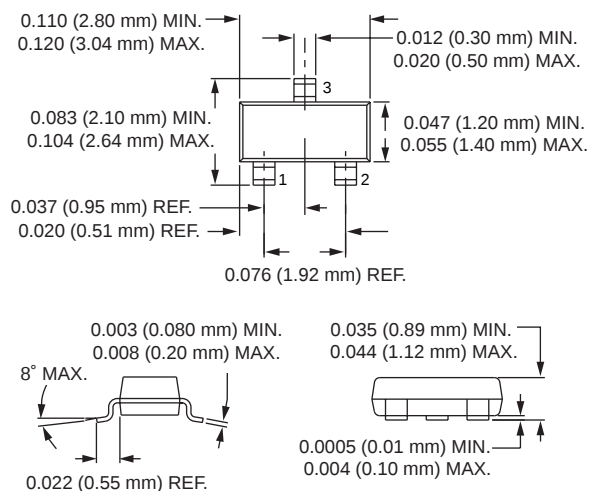


Conductance vs. Frequency and Reverse Voltage

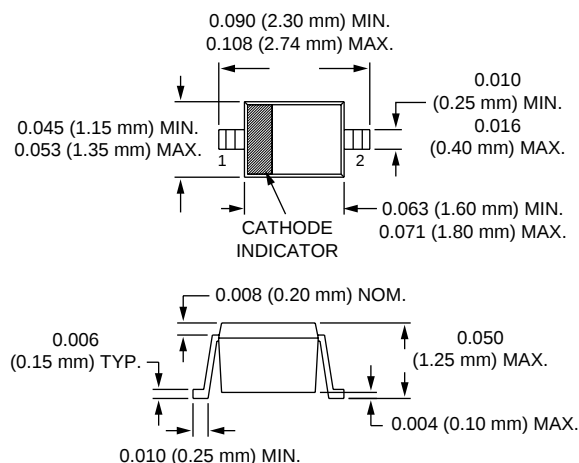
Resistance vs. Temperature @ 500 MHz

I_F (mA)	R -55°C (Ω)	R -40°C (Ω)	R -15°C (Ω)	R +25°C (Ω)	R +65°C (Ω)	R +85°C (Ω)	R +100°C (Ω)
0.02	9.92	9.68	9.30	8.95	8.95	9.01	9.12
0.10	3.90	3.86	3.79	3.80	3.85	3.94	4.03
0.30	2.32	2.33	2.30	2.33	2.35	2.43	2.49
0.50	1.91	1.93	1.90	1.92	1.92	1.99	2.05
1.00	1.54	1.55	1.52	1.53	1.50	1.56	1.61
10.00	0.95	0.96	0.91	0.90	0.82	0.85	0.89
20.00	0.86	0.87	0.82	0.81	0.73	0.75	0.79
100.00	0.72	0.73	0.70	0.68	0.59	0.62	0.65

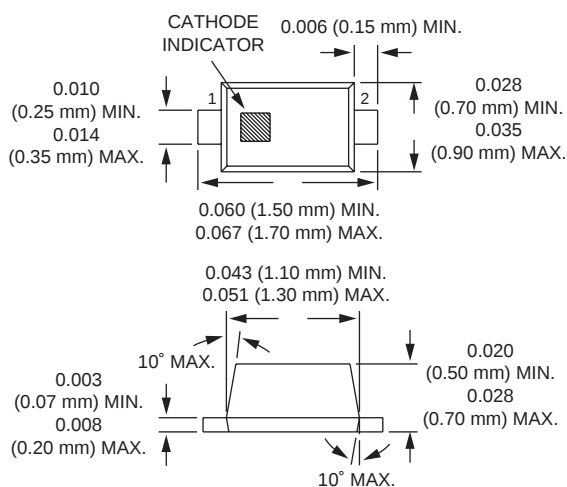
SOT-23



SOD-323



SC-79



SC-70

