

Large Signal Switching Plastic Packaged PIN Diodes



SMP1352 Series

Features

- Designed for Large Signal Switches
- Frequency Range from HF to > 2 GHz
- Base Station and Handset Applications
- Industry Standard Surface Mount Packages
- Designed for High Volume Applications
- Available in Tape and Reel Packaging



Description

The SMP1352 series of plastic packaged, surface mountable, low capacitance (0.3 pF) silicon PIN diodes are designed for large signal switch applications from 10 MHz to beyond 2 GHz. These diodes have a reverse voltage rating of 200 V and are designed for use in low distortion switches that are required to hold off large RF voltages. The nominal 50 μ m I region width, combined with the typical 1.5 μ S carrier lifetime, results in a PIN diode with low forward resistance and low distortion characteristics.

Absolute Maximum Ratings

Characteristic	Value
Reverse Voltage (V_R)	200 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 1C

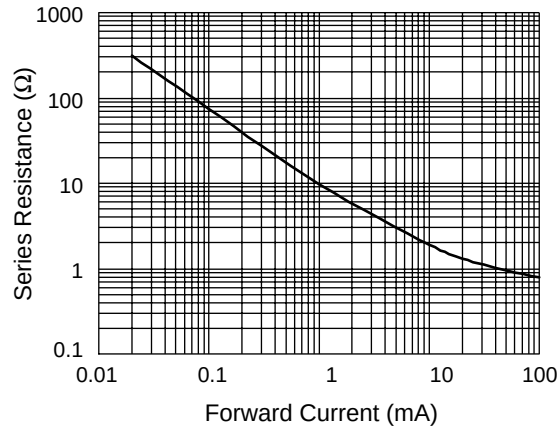
Series Pair	Single	Single
Marking: PR2		
SOT-23	SOD-323	SC-79
♦ SMP1352-005	♦ SMP1352-011	♦ SMP1352-079
$L_S = 1.5$ nH	$L_S = 1.5$ nH	$L_S = 0.7$ nH

♦ Available through distribution.

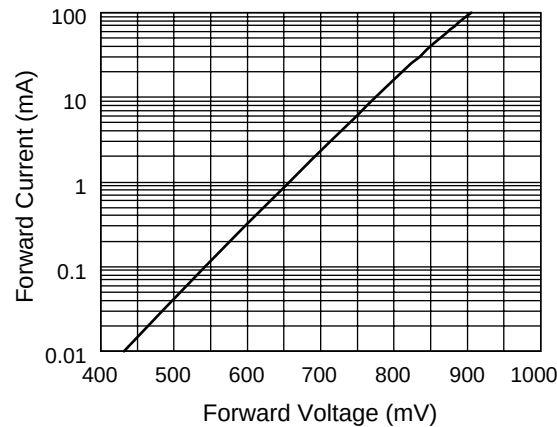
Electrical Specifications at 25°C

Parameter	Condition	Typ.	Max.	Unit
Reverse Current (I_R)	$V_R = 200$ V		10	μ A
Capacitance (C_T)	$F = 1$ MHz, $V = 20$ V		0.35	pF
Resistance (R_S)	$F = 100$ MHz, $I = 1$ mA	11.0	15.0	Ω
Resistance (R_S)	$F = 100$ MHz, $I = 10$ mA	2.0	2.8	Ω
Resistance (R_S)	$F = 100$ MHz, $I = 100$ mA	1.0	1.35	Ω
Forward Voltage (V_F)	$I_F = 10$ mA	0.80		V
Carrier Lifetime (T_I)	$I_F = 10$ mA	1.0		μ S
I Region Width		50		μ m

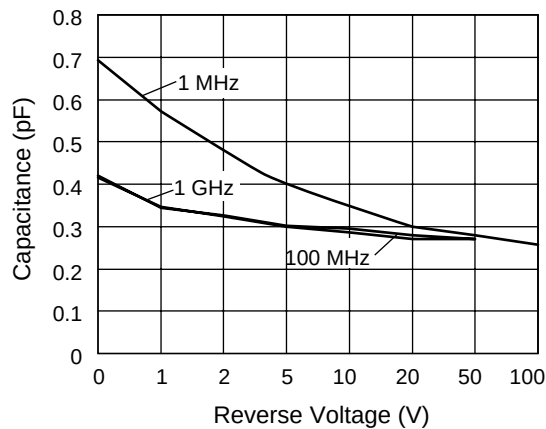
Typical Performance Data



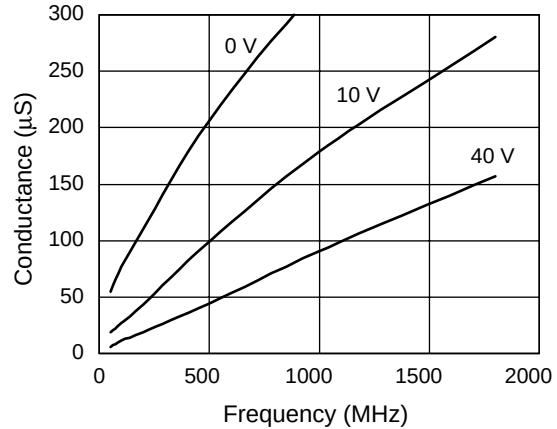
Series Resistance vs. Current @ 100 MHz



DC Characteristic



Capacitance vs. Reverse Voltage

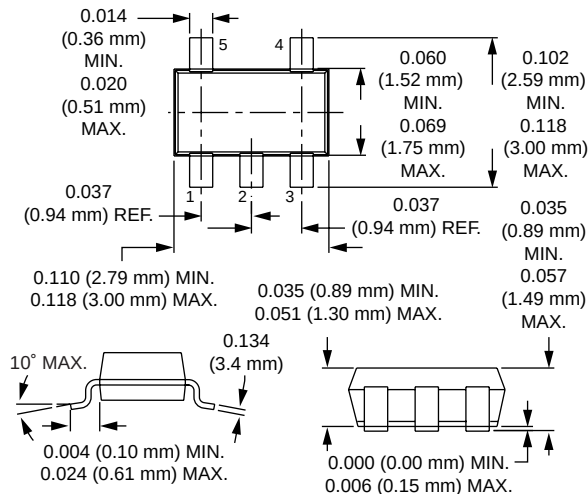


Conductance vs. Frequency and Reverse Voltage

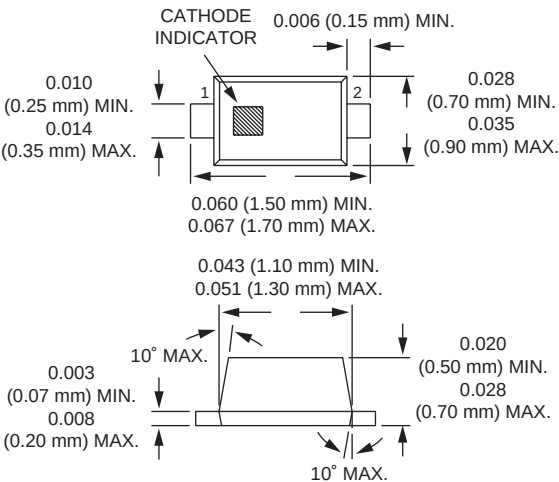
Resistance vs. Temperature @ 100 MHz

I_F (mA)	R -55°C (Ω)	R -15°C (Ω)	R +25°C (Ω)	R +65°C (Ω)	R +100°C (Ω)
0.02	260.00	276.00	302.00	263.00	240.00
0.10	60.90	64.00	70.60	71.00	70.10
0.30	22.40	23.60	26.00	27.80	28.20
1.00	7.90	8.50	9.20	10.30	10.70
10.00	1.50	1.70	1.90	2.20	2.30
20.00	1.10	1.20	1.30	1.60	1.70
100.00	0.55	0.69	0.78	0.98	1.03

SOT-23



SC-79



SOD-323

