

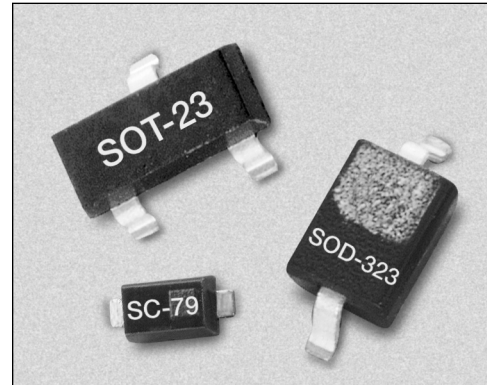
# Large Signal Switching Plastic Packaged PIN Diodes



## 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  $\mu\text{m}$  I region width, combined with the typical 1.5  $\mu\text{s}$  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

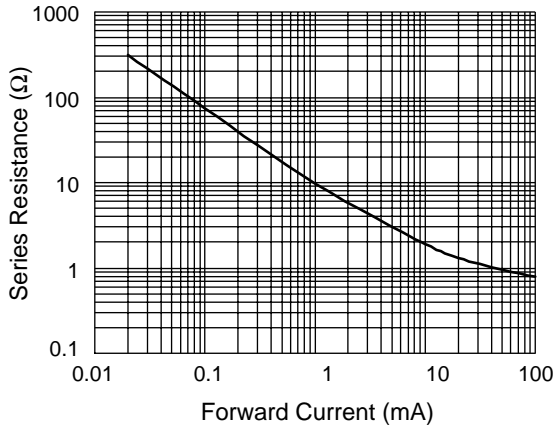
		
Series Pair	Single	Single
Marking: PR2		
SOT-23	SOD-323	SC-79
† SMP1352-005	† SMP1352-011	† SMP1352-079
$L_S = 1.5 \text{ nH}$	$L_S = 1.5 \text{ nH}$	$L_S = 0.7 \text{ nH}$

† Available through distribution.

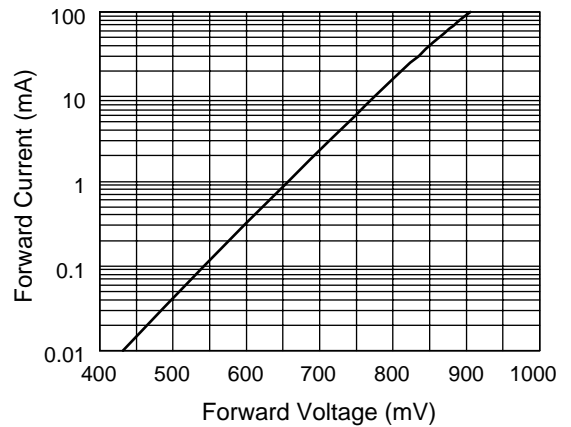
### Electrical Specifications at 25°C

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

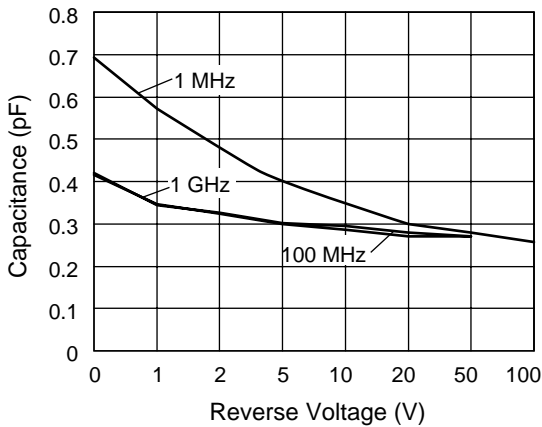
### Typical Performance Data



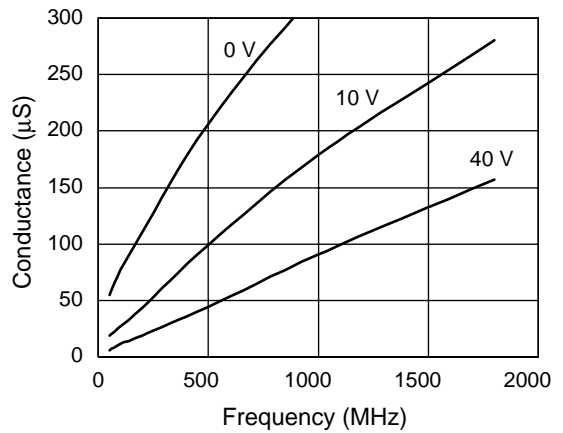
**Series Resistance vs. Current @ 100 MHz**



**DC Characteristic**



**Capacitance vs. Reverse Voltage**

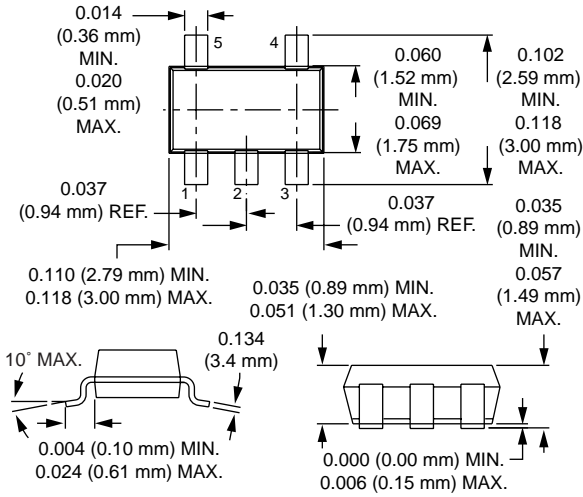


**Conductance vs. Frequency and Reverse Voltage**

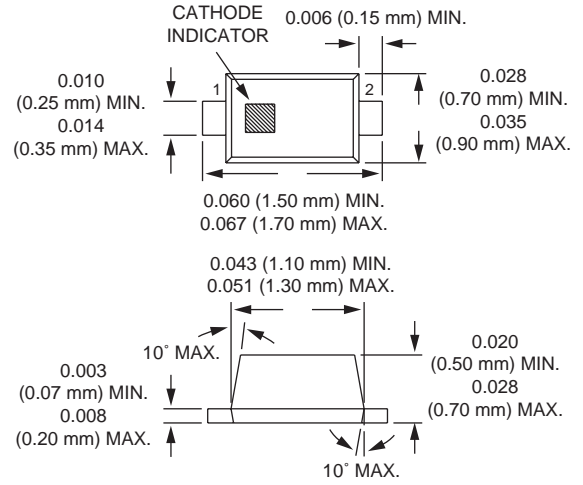
### Resistance vs. Temperature @ 100 MHz

I <sub>F</sub> (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

