

PIN Diode Chips Supplied on Film Frame



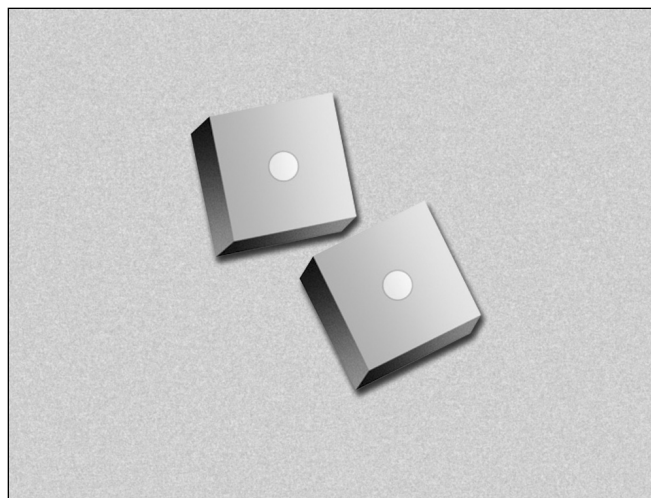
SMP1320-099, SMP1322-099, SMP1340-099, SMP1353-099

Features

- Designed for High Performance Switch Applications
- Preferred Device for Module Applications
- PIN Diodes Supplied 100% Tested, Sawn, Mounted on Film Frame
- Low Cost

Description

The SMP series of PIN diodes are designed for high volume switch applications from 10 MHz to beyond 2 GHz. The low current, low capacitance performance of these diodes makes the SMP series particularly suited for battery-operated circuits, power amplifier modules, VCO, T/R switches and other applications.



Absolute Maximum Ratings

Characteristic	Value
Reverse Voltage (V_R)	50 V
Power Dissipation @ 25°C at the Base of the Chip	250 mW
Storage Temperature	-65°C to +150°C
Operating Temperature	-65°C to +150°C
ESD Human Body Model	Class 1 B

Electrical Specifications at 25°C

Part Number	Min. V_B $I_R = 10 \mu A$ (V)	Typ. C_J $V_R = 0 V$ $F = 1 MHz$ (pF)	Max. C_J $V_R = 10 V$ $F = 1 MHz$ (pF)	Typ. V_F @ $I_F = 10 mA$ (mV)	Max. R_S $I_F = 1 mA$ $F = 100 MHz$ (Ω)	Max. R_S $I_F = 10 mA$ $F = 100 MHz$ (Ω)	Typical Carrier Lifetime $I_F = 10 mA$ (nsec)
SMP1320-099	50	0.23	0.175	850	2.0 Typ.	0.9	400
SMP1322-099	50	1.10	0.850	825	1.5	0.45 Typ.	400
SMP1340-099	50	0.20	0.150	880	1.7 Typ.	1.2	100
SMP1353-099	100	0.35	0.150	825	15	2.8	1000

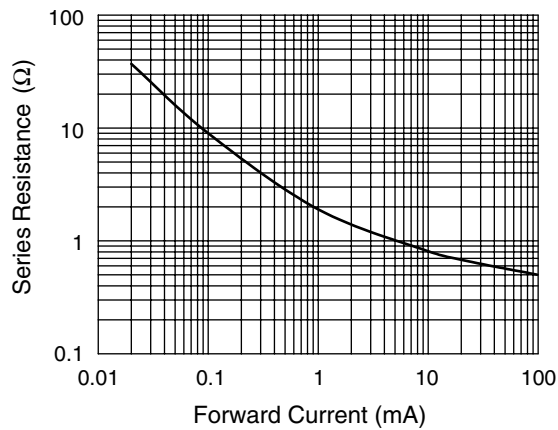
The above PIN diode chips are processed on 100 mm silicon wafers, 100% DC tested, sawn and shipped on 6" film frame hoops. Electrical rejects are identified with black ink.

Chip Dimensions

Part Number	Quantity of Good Diodes Per Wafer		Bonding Pad Nominal (In.)	Chip Size Nominal (In.)	Chip Height Nominal (In.)
	Min.	Nom.			
SMP1320-099	40,000	46,000	0.003 $\pm$ 0.0003	0.0135 $\pm$ 0.001	0.0055 $\pm$ 0.0005
SMP1322-099	40,000	46,000	0.0075 $\pm$ 0.0003	0.0135 $\pm$ 0.001	0.0055 $\pm$ 0.0005
SMP1340-099	65,000	72,000	0.003 $\pm$ 0.0003	0.0110 $\pm$ 0.001	0.0055 $\pm$ 0.0005
SMP1353-099	65,000	72,000	0.008 $\pm$ 0.0005	0.0110 $\pm$ 0.001	0.0055 $\pm$ 0.0005

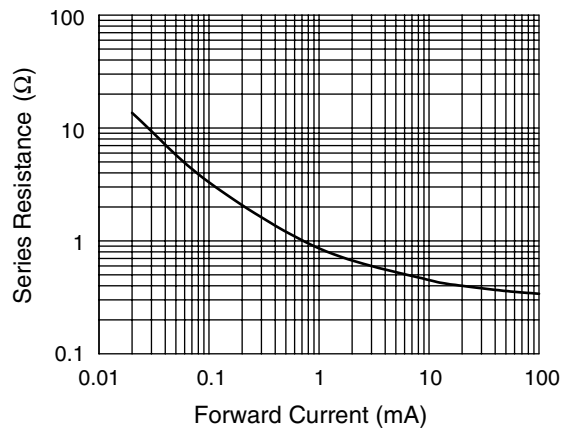
Typical Performance Data at 25°C

SMP1320

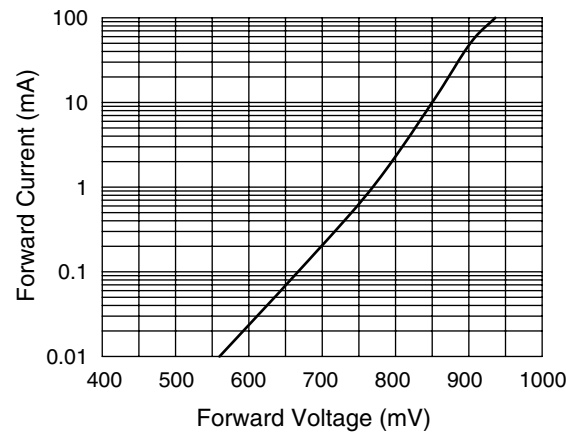


Series Resistance vs.
Forward Current @ 100 MHz

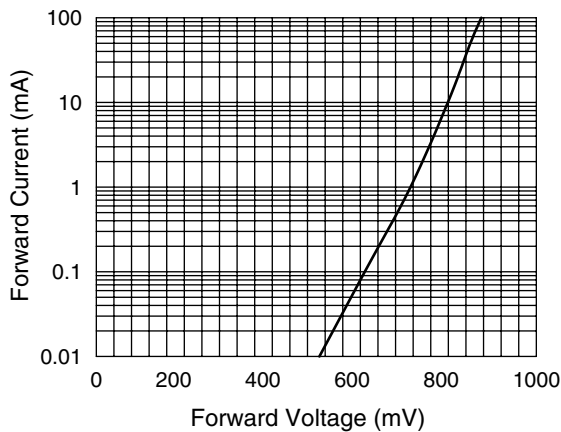
SMP1322



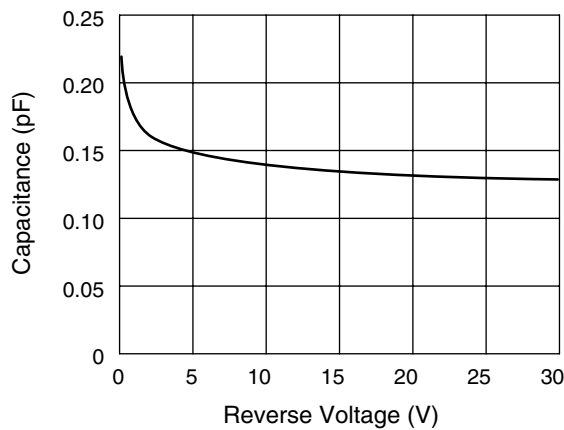
Series Resistance vs.
Forward Current @ 100 MHz



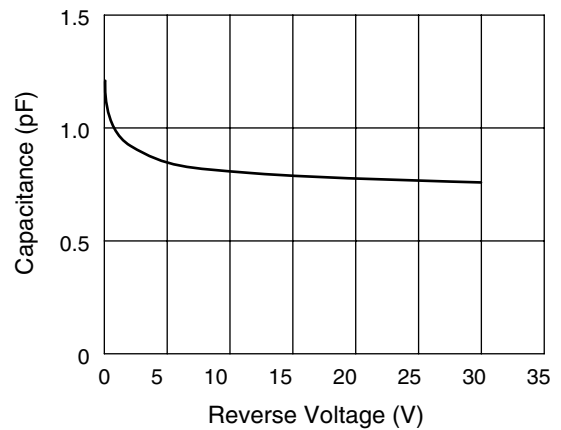
DC Characteristic



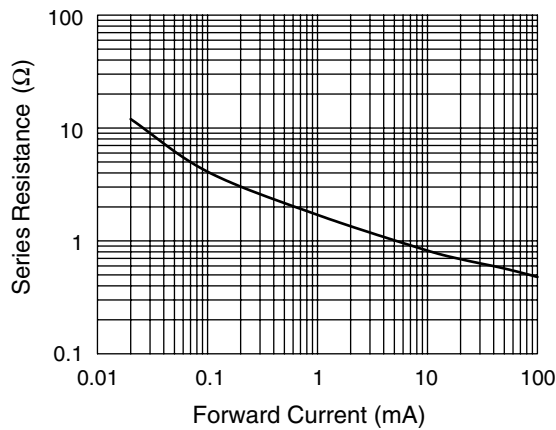
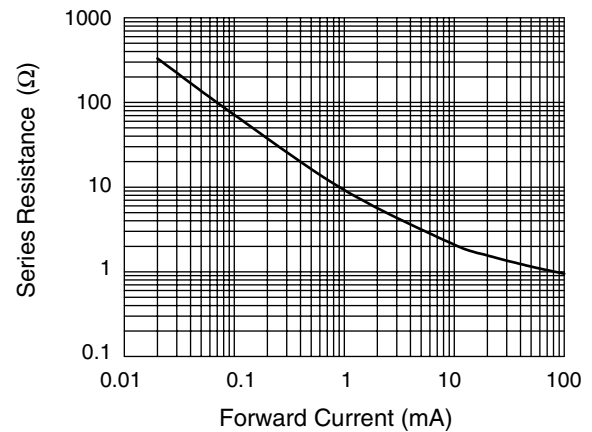
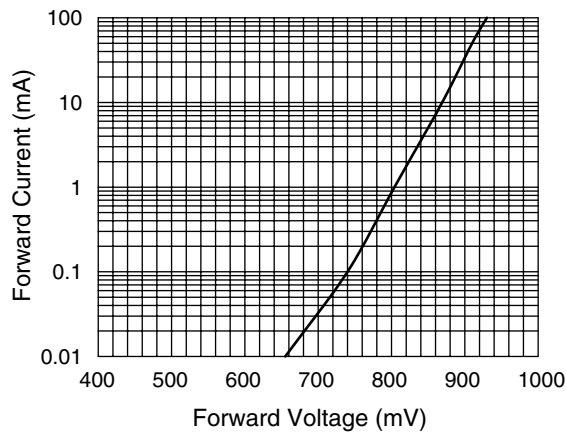
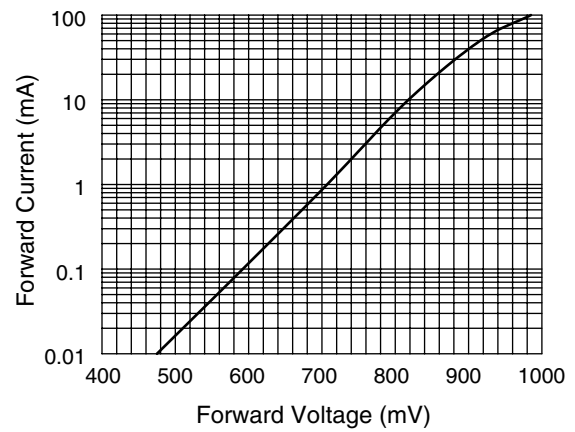
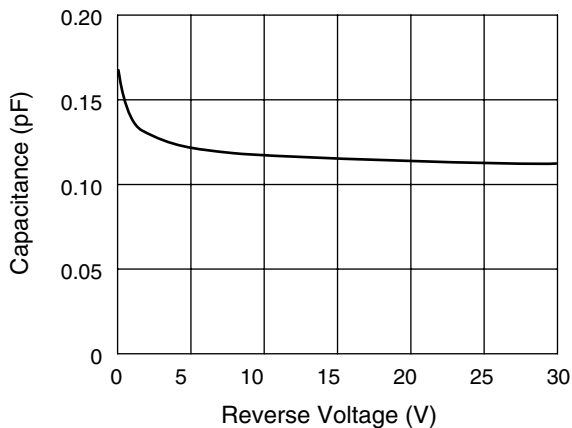
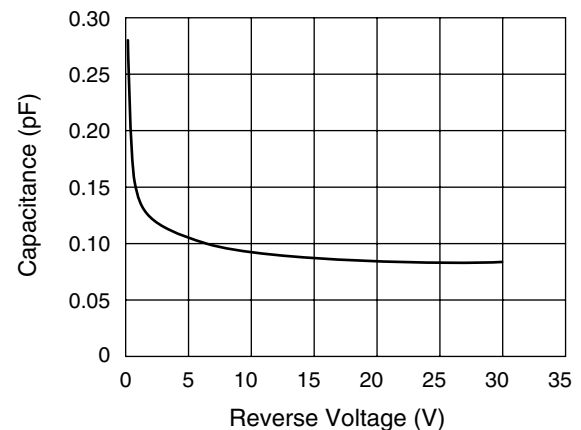
DC Characteristic



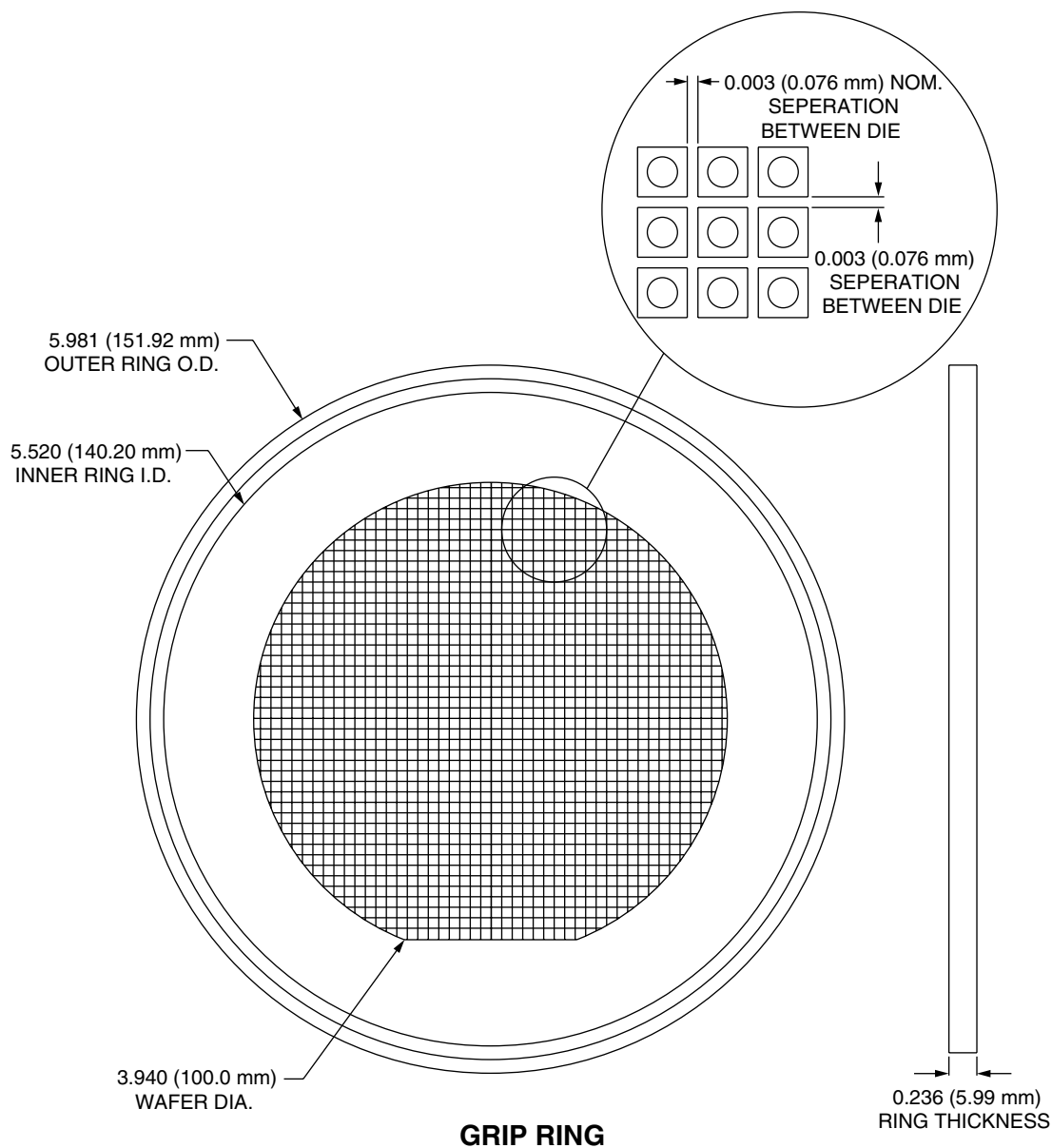
Capacitance vs. Reverse Voltage



Capacitance vs. Reverse Voltage

Typical Performance Data at 25°C**SMP1340****Series Resistance vs.
Forward Current @ 100 MHz****SMP1353****Series Resistance vs.
Forward Current @ 100 MHz****DC Characteristic****DC Characteristic****Capacitance vs. Reverse Voltage****Capacitance vs. Reverse Voltage**

Wafer On Film



Wafer Film Frame Description

- Wafer on Nitto Tape
- Color: Light Blue
- Thickness: 2.2–3.0 mils
- Tensile Strength: 6.6 (lbs. in width)
- Ring Material: Plastic