1N5767 (5082-3080) SERIES

1N5957SERIES

DESCRIPTION

The 1N5767 and the 1N5957 PIN diodes are based upon low capacitance PIN chips designed with long minority carrier lifetime, and thick intrinsic width. Thus operation as low as 1 MHz is possible with low distortion. Additionally, the low diode capacitance allows useful operation well into the microwave frequency range.

The 1N5767 (5082-3080) is a general purpose low power PIN diode designed for Both switch and attenuator applications.

The 1N5957 is primarily used as an attenuator PIN diode and is particularly suitable wherever current controlled, wide dynamic range resistance elements are required. The 1N5957 has also been characterized for the 75Ω attenuator, commonly employed in CATV systems.

IMPORTANT: For the most current data, consult *MICROSEMI*'s website: **http://www.microsemi.com**

KEY FEATURES

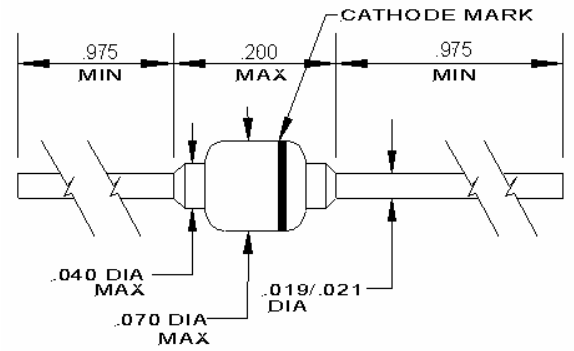
- Useful attenuation from 1 μA to 100 mA bias
- Capacitance below 0.4 pF
- Low distortion in switches and attenuators
- Metallurgical bond
- Sealed in glass
- Thermally matched construction

ABSOLUTE MAXIMUM RATINGS AT 25° C (UNLESS OTHERWISE SPECIFIED)

Reverse Voltage	
V_R (I_R = 10 μA)	**100 V**
Average Power Dissipation: (25 °C)	
Free Air (P_A)	**400 mW (Derate linearly to 175 °C)**
Operating and Storage	
Temperature Range	**-65 °C to +175 °C**

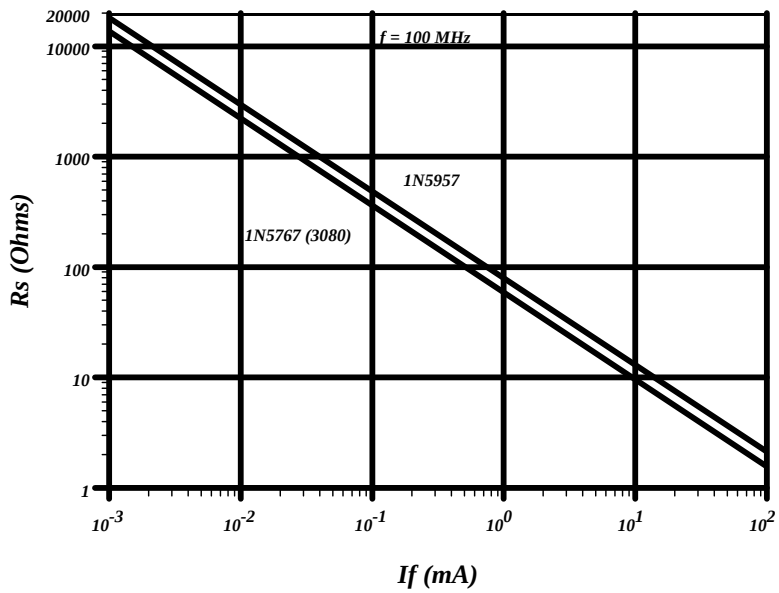
APPLICATIONS/BENEFITS

- Surface mount package available
- RoHS compliant packaging available

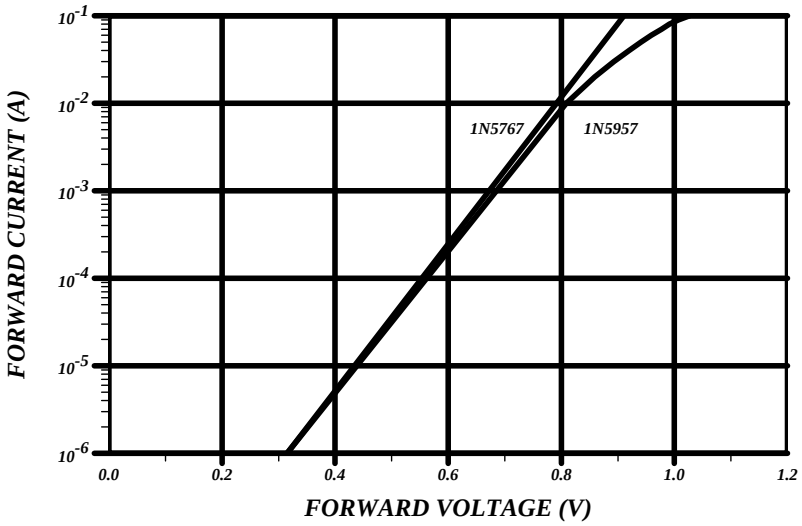


Parameter	Symbol	Conditions	1N5767	1N5957	Units
Total Capacitance (Max)	C_T	V_R=100V, F= 1 MHz	0.4	0.4	pF
Series Resistance	R_S	If = 10 µA, F= 100 MHz	1000Ω(min) 2000Ω(typ)	1500Ω(min) 3000Ω(typ)	Ohms
Series Resistance	R_S	If = 20 mA, F = 100 MHz	8Ω(max) 4Ω(typ)	8Ω(max) 6Ω(typ)	Ohms
Series Resistance	R_S	If = 100 mA, f = 100 MHz	2.5Ω(max) 1.5Ω(typ)	3.5Ω(max) 2.0Ω(typ)	Ohms
Carrier Lifetime	τ	I_F = 10 mA	1.0(min)	1.5(min) 2.0(typ)	µs
Reverse Current	I_R	V_R = Voltage rating	10(max)	10(max)	µA
Current for Rs = 75Ω	I_{75}	Rs = 75Ω	0.7	0.8 – 1.2	mA
Return Loss	-	Diode terminates 75Ω line	30(typ)	30(typ)	dB
Second Order Distortion	-	Bridged tee attenuator Attenuation = 10 dB	-40(typ)	-50(typ)	dB
Third Order Distortion	-	Pin = 50 dBmv F1 = 10 MHz F2 = 13 MHz	-60(typ)	-65(typ)	dB

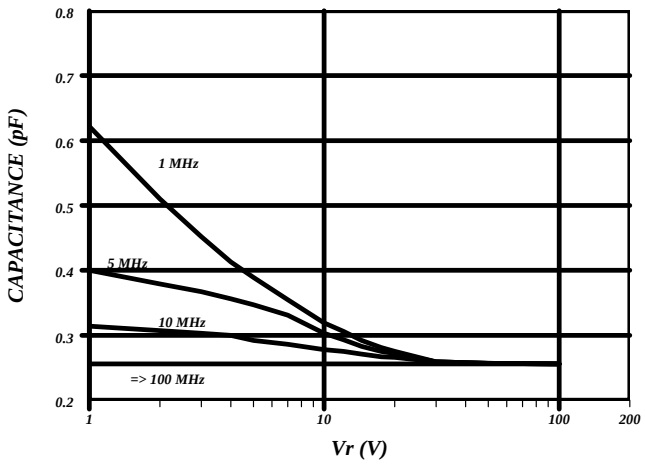
Rs versus If
TYPICAL



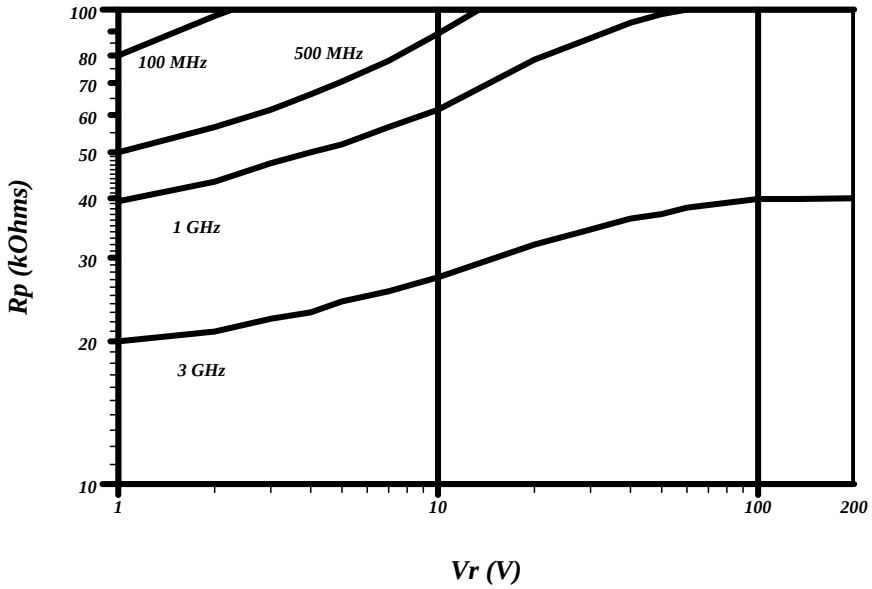
FORWARD VOLTAGE versus CURRENT



Ct versus Vr
TYPICAL



PARALLEL RESISTANCE versus REVERSE VOLTAGE
TYPICAL



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