

Glass Package PIN Diodes for RF Switching and Attenuating



A15 PACKAGE

Description:

The switching diodes are designed for low power, general-purpose switch and switching applications up to 2 GHz. The attenuator diodes have guaranteed R_S slopes making them ideal for impedance matched attenuators and modulators.

Features:

- Hermetic Glass Package
- Designs optimized for Switching and Attenuating
- Available with MIL-PRF-19500 Screening

Switching Diodes: Electrical Specifications At 25 °C

Model	Breakdown Voltage V_{BR} (V)	Series Resistance R_S (Ω)	Total Capacitance C_T (pF)	Minority Carrier Lifetime τ (nS)	Reverse Recovery Time t_{rr} (nS)
	MIN	MAX	MAX	MIN	TYP
MPN3001	200	1.0	0.25	100	100
MPN3002	300	1.0	0.25	100	100
1N5719	150	1.25	0.30*	100	100
Test Conditions	$I_R = 10 \mu A$	$I_F = 100 \text{ mA}$ $f = 100 \text{ MHz}$	$V_R = 50 \text{ V}$ $*V_R = 100 \text{ V}$ $f = 1 \text{ MHz}$	$I_F = 50 \text{ mA}$ $I_R = 250 \text{ mA}$	$I_F = 20 \text{ mA}$ $V_R = 10 \text{ V}$

Attenuator Diodes: Electrical Specifications At 25 °C

Model	Lifetime τ (nS)	Breakdown Voltage V_{BR} (V)	Series Resistance R_S (Ω)	Total Capacitance C_T (pF)	High Resistance Limit R_{RH} (Ω)		Low Resistance Limit R_{L} (Ω)		Maximum Difference in Resistance vs. Bias Slope, ΔR
	TYP	MIN	MAX	MAX	MIN	MAX	MIN	MAX	
MPN4165	100	100	1.5	0.30	1100	1660	16	24	0.04
MPN4166	100	100	1.5	0.30	830	1250	12	18	0.04
MPN3080	2000	100	2.5	0.40	1000			8*	
1N5767	1300	100	2.5	0.40	1000			8*	
MPN3081	2500	100	3.5	0.40	1500			8*	
Test Conditions	$I_F = 50 \text{ mA}$ $I_R = 250 \text{ mA}$	$I_R = 10 \mu A$	$I_F = 100 \text{ mA}$ $f = 100 \text{ MHz}$	$V_R = 50 \text{ V}$ $f = 1 \text{ MHz}$	$I_F = 0.01 \text{ mA}$ $f = 100 \text{ MHz}$	$I_F = 1.0 \text{ mA}$ $*I_F = 20 \text{ mA}$ $f = 100 \text{ MHz}$	$I_F = 20 \text{ mA}$ and 1.0 mA $f = 100 \text{ MHz}$		

Absolute Maximum Ratings:

Total Power Dissipation Derate Linearly to zero at +150°C	250 mW at +25 °C
Operating Temperature	-65 °C to +150 °C
Storage Temperature	-65 °C to +150 °C
Soldering Temperature	+230 °C for 5 Seconds



Figure 1.

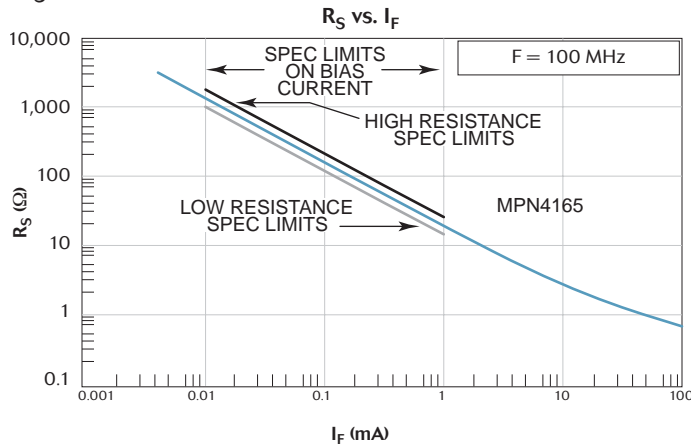
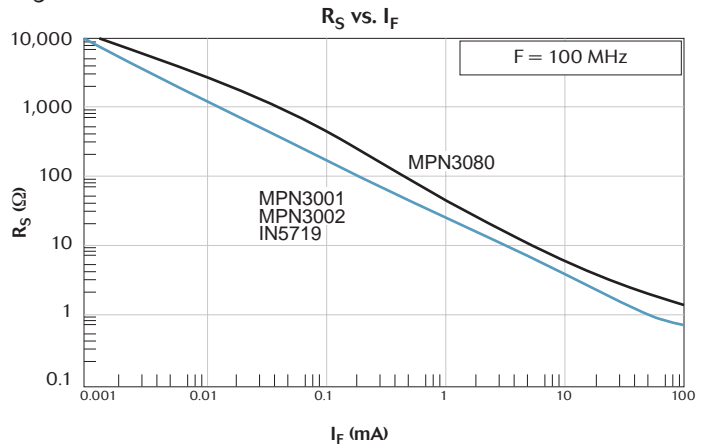
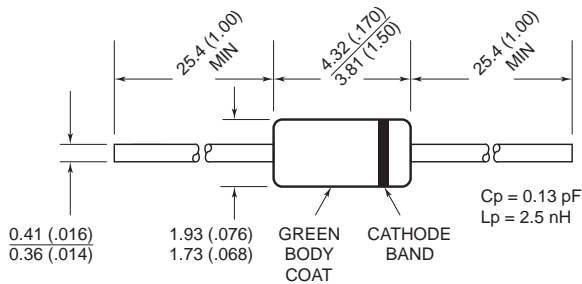


Figure 2.



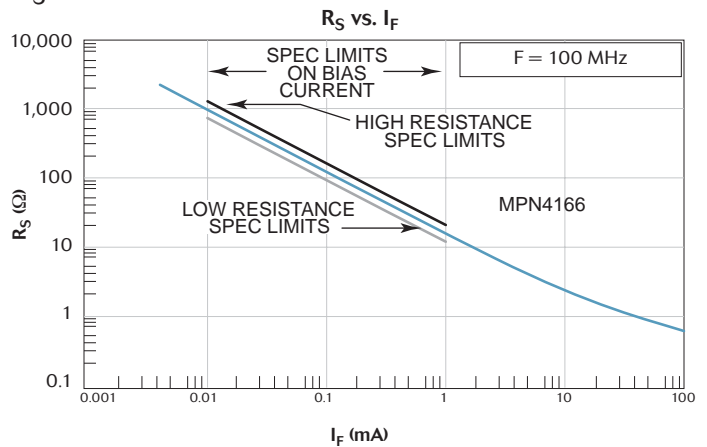
Outline Drawing A15



The Metelics A15 package has dumet leads and a glass hermetic seal. To avoid seal damage, bending of the lead should be restricted to no less than 1/16 inch from the glass body.

Dimensions in millimeters and (inches)

Figure 3.



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Our passion for performance is defined by three attributes represented by these three icons: solution-minded, performance-driven and customer-focused.