

High Power Silicon PIN Diodes



Silicon PIN Diode Chips

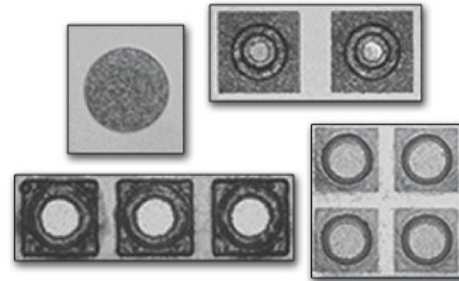
Rev. V1

Features

- Voltage Breakdown up to 800 V
- Passivated Mesa Construction
- Screening Available per MIL-PRF-19500 / 38534

Description

These silicon PIN diodes feature fully passivated mesa designs with tri-metalization for reliable operation under the most demanding conditions.



Electrical Specifications: $T_A = +25^{\circ}\text{C}$ (unless otherwise specified)

Part #	Breakdown Voltage V_B $I_R = 10 \mu\text{A}$	Series Resistance R_S $I_F = 100 \text{ mA}$ (100 MHz)	Junction Capacitance C_J $V_R = 50 \text{ V}$	Minority Carrier Lifetime $I_F = 10 \text{ mA}$ $I_R = 6 \text{ mA}$ 50% recovery	Theta	I-Region Width	Contact Diameter	Chip Size
	V	Ω	pF	ns	$^{\circ}\text{C/W}$	μm	mils	Mils (sq.)
	Min.	Max.	Max.	Min.	Max.	Nominal		
MPN7330	300	0.5	0.40	500	10	30	10	15
MPN7360	600	0.4	1.00	2500	7	70	20	37
MPN7370	700	0.3	2.30	5000	5	70	40	64
MPN7380	800	0.5	0.60	2500	7	80	24	37
MPN7420	400	1.5	0.08	1000	30	100	5	15
MPN7453A	300	1.0	0.15	700	20	60	8	15
MPN7453B	400	0.9	0.20	2500	20	60	8	20
MPN7453C	300	0.7	0.25	1000	15	60	8	20

Absolute Maximum Ratings^{1,2}

Parameter	Absolute Maximum
Power Dissipation (P_{DISS})	$P_{DISS} = \frac{175^{\circ}\text{C} - T_c}{\text{Thermal Resistance } \theta_{JC}}$
Reverse Voltage	Rated V_{BR}
Junction Temperature	+175°C
Storage Temperature	-65°C to +200°C

1. Exceeding any one or combination of these limits may cause permanent damage to this device.
2. MACOM does not recommend sustained operation near these survivability limits.

Handling Procedures

Please observe the following precautions to avoid damage:

Static Sensitivity

These electronic devices are sensitive to electrostatic discharge (ESD) and can be damaged by static electricity. Proper ESD control techniques should be used when handling these devices.

Figure 1.

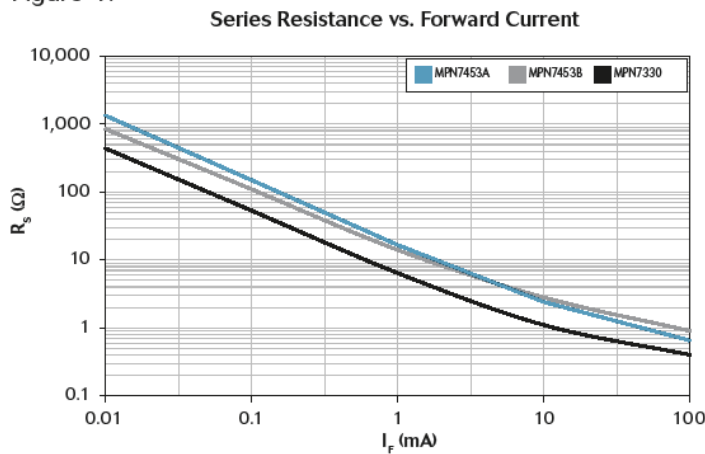


Figure 2.

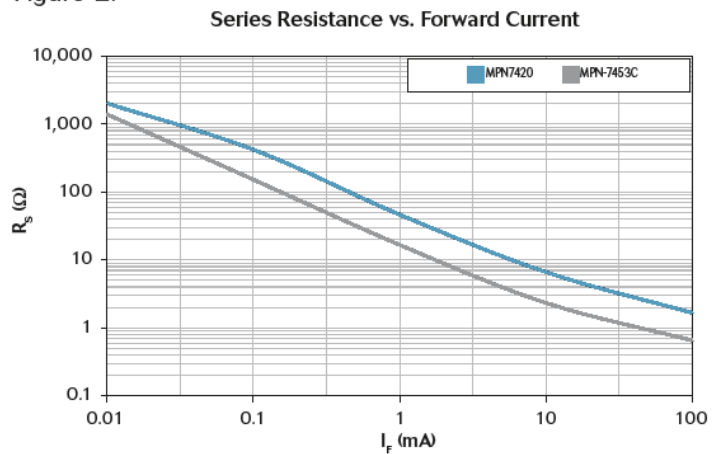
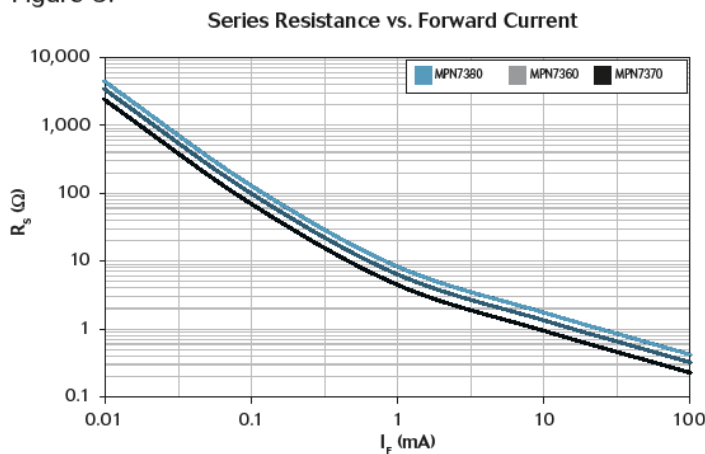


Figure 3.



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