MADP-01112x-1141

Rev. V1

Features

- Industry Standard Surface Mount Packages
- Non-Magnetic
- Low Loss, High Isolation Switching Diodes
- RoHS* Compliant

Applications

- Multi Market

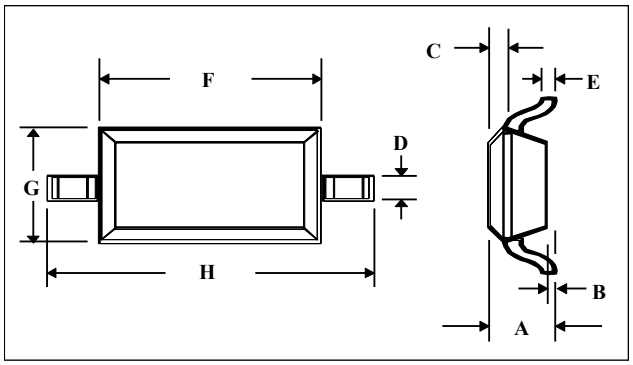
Description

MACOM offers silicon PIN diodes in non-magnetic, low cost, surface mount plastic packages for use as switches and attenuators. These diodes are offered with 100% matte Sn plating. These PIN diodes feature a variety of I-region lengths resulting in lower resistance, and lower capacitance devices for various microwave control circuit applications.

The MADP-011127-11410T series have the lowest capacitance and offers the highest isolation in series and series-shunt switches through 3 GHz.

The MADP-011128-11410T series offer the lowest series resistance for best performance as low loss series switches and high isolation shunt switches.

Package Outline (1141)



DIM.	INCHES		MILLIMETERS	
	MIN.	MAX.	MIN.	MAX.
A	—	0.043	—	1.1
B	—	0.004	—	0.1
C	—	0.008	—	0.2
D	0.010	0.016	0.25	0.41
E	0.003	0.006	0.07	0.15
F	0.063	0.075	1.6	1.9
G	0.045	0.057	1.14	1.45
H	0.091	0.106	2.3	2.7

Electrical Specifications @ +25°C

Part #	Reverse Voltage[1] (V)	Total Capacitance[2] Maximum (pF)	RS @ 10 mA[3] Maximum (Ohms)	Nominal Characteristics	
				Carrier Lifetime[4] (µs)	I-Region Thickness (mils)
MADP-011127-11410T	75	0.35 @ 20 V	1.5	0.2	0.4
MADP-011128-11410T	75	1.00 @ 20 V	0.5	0.2	0.4

1. The reverse current will not exceed 10 mA at the reverse voltage rating.
2. Total capacitance is measured at 1 MHz at the indicated voltage.
3. Series resistance is measured at the specified current and a frequency of 100 MHz.
4. Nominal minority carrier lifetime is measured at I_F = 10 mA, I_R = 6 mA, 90% recovery.

* Restrictions on Hazardous Substances, compliant to current RoHS EU directive.

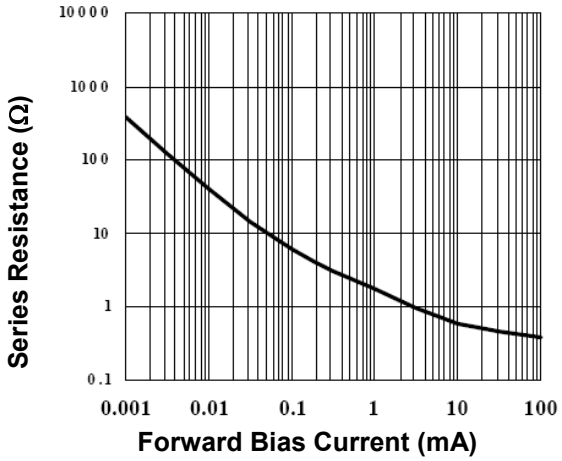
Absolute Maximum Ratings @ +25°C[5] (Unless Otherwise Noted)

Parameter	Rating
Operating Temperature	-65°C to +150°C
Storage Temperature	-65°C to +125°C
Junction Temperature	+175°C
RF CW Incident Power: MADP-011128-11410T(q die = 25°C/W), RF & DC Incident De-rating Coefficient = -16.8 mW/°C MADP-011127-11410T(q die = 80°C/W), RF & DC Incident De-rating Coefficient = -10.7 mW/°C	 +31 dBm +29 dBm
Total (RF + DC) Power Dissipation: (SOD-323): RF & DC Dissipated De-rating Coefficient = -26.7 mW/°C	200 mW
Reverse Voltage	Voltage Rating
Forward Current	150 mA DC

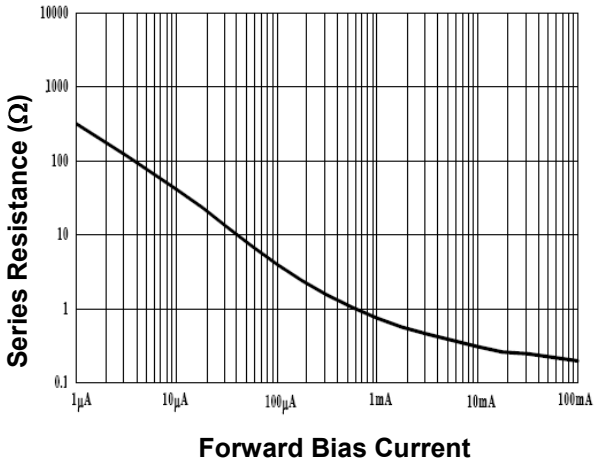
5. Operation of these devices above any one of these parameters may cause permanent damage.

Typical Forward Resistance vs. DC Bias Current Curves @ 100 MHz

Resistance vs. Forward Current
MADP-011127-11410T



Resistance vs. Forward Current
MADP-011128-11410T



Mounting Information

The illustration indicates the recommended mounting pad configuration for the SOD-323, packages. Solder paste containing flux should be screened onto the pads to a thickness of 0.005- 0.007 inches. The plastic package is placed in position, firmly adhering to the solder paste.

Permanent attachment is performed by a reflow soldering procedure during which the tab temperature does not exceed +275°C and the body temperature does not exceed +250°C, for standard models and +260°C for the RoHS compliant devices.

Please refer to Application Note M538 for surface mounting instructions.

SOD-323