

Surface Mount
Plastic PIN Diodes

MADP-008120-12790T
V2

Features

- Industry Standard Surface Mount Package (SC-79)
- Lead-Free (RoHS Compliant)
Available with 260 °C Reflow Compatibility
- Low Loss, High Isolation Switching Diodes
- Tape and Reel Packaging

Description and Applications

M/A-COM offers a silicon PIN diode in low cost, surface mount plastic package for use as a switch where low loss and high isolation is required. These diodes are offered as an RoHS compliant device with 100% matte Sn plating. This particular PIN diode was designed to accommodate circuits requiring the benefits of low resistance and requiring low capacitance for various microwave control circuit applications.

This PIN diode is available in the SC-79 (case style 1279) package. This package is supplied on tape and reel for automatic pick and place assembly. The tape and reel suffix designation is a "T" at the end of the part number.

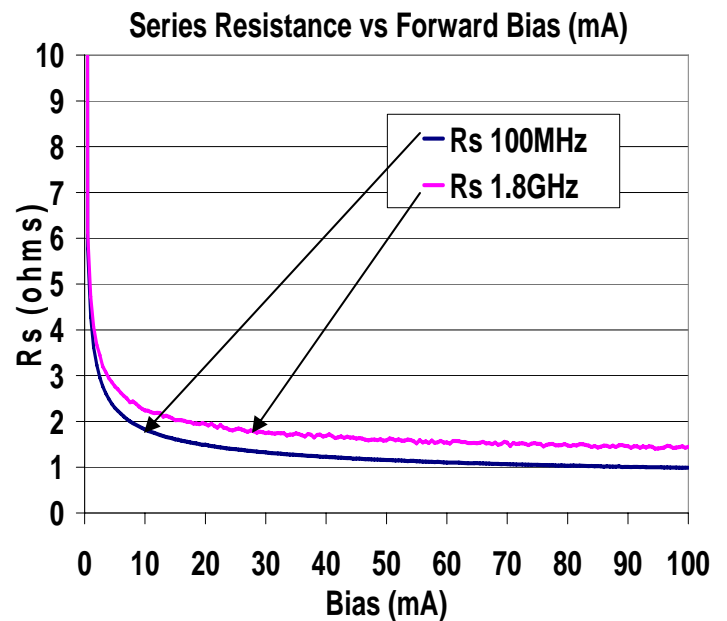
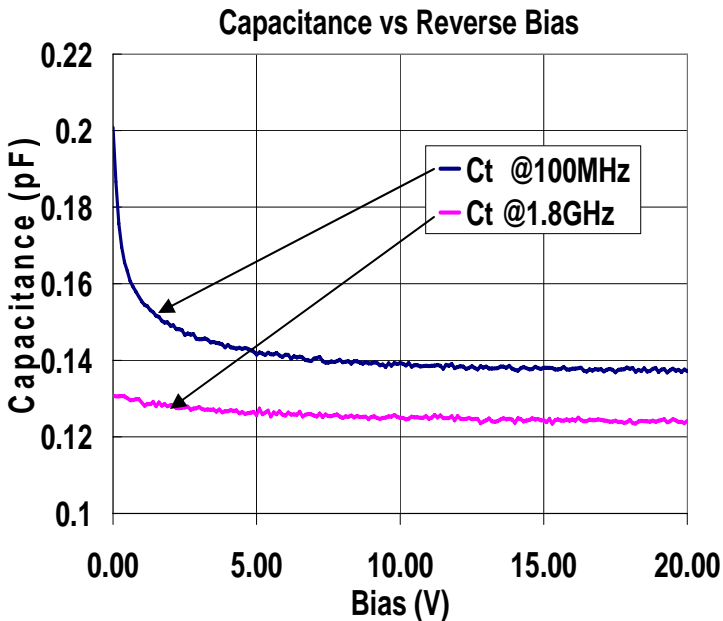
Absolute Maximum Ratings

@ 25 °C¹ (Unless Otherwise Noted)

Parameter	Absolute Maximum
Operating Temperature	-65°C to +150 °C
Storage Temperature	-65°C to +125 °C
Junction Temperature	+ 175 °C
Reverse Voltage	Voltage Rating
Forward Current	150 mA DC

Electrical Specifications @ 25°C

Standard Part Number	Reverse Voltage ¹ (V)	Junction Capacitance ² Max.	Total Capacitance ² Max.	R _s @ 10 mA ³ Max. (Ohms)	Nominal Characteristics	
					Carrier Lifetime ⁴ (ns)	I-Region Thickness (um)
MADP-008120-12790T	100	0.060 @ 10V	0.150 @ 10V	2.5	200	19



1

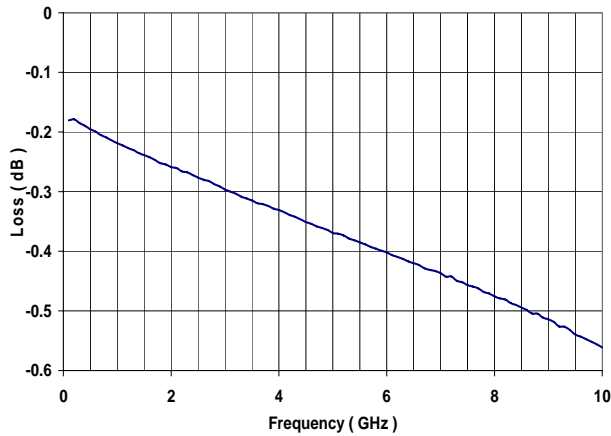
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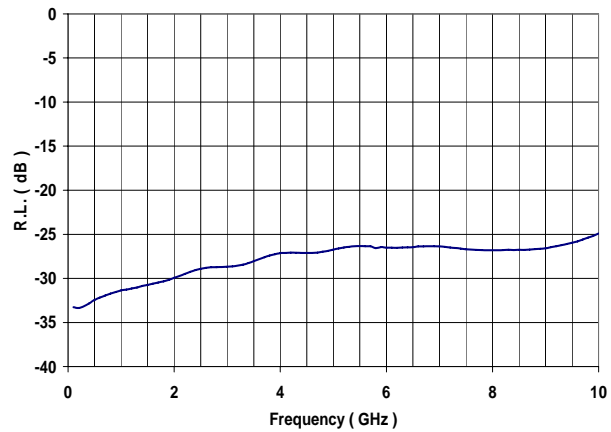
Visit www.macom.com for additional data sheets and product information.

Typical RF Performance

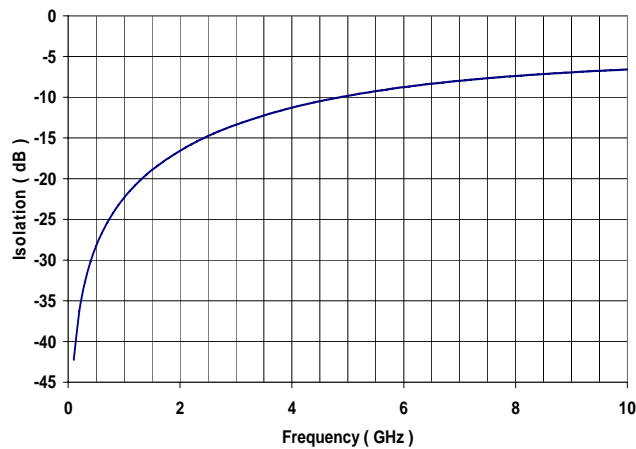
Insertion Loss vs Frequency
"ON" State Forward Bias 10mA



Return Loss vs Frequency
"ON" State Forward Bias 10mA



Isolation vs Frequency
"OFF" State Reverse Bias -10V



Devices mounted in series configuration and fixture losses removed from data.

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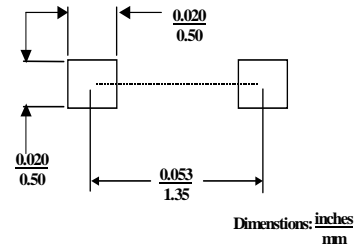
Mounting Information

The illustration indicates the recommended mounting pad configuration for the SC-79 package. 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 +260 °C.

Please refer to Application Note M538 for surface mounting instructions.

SC-79

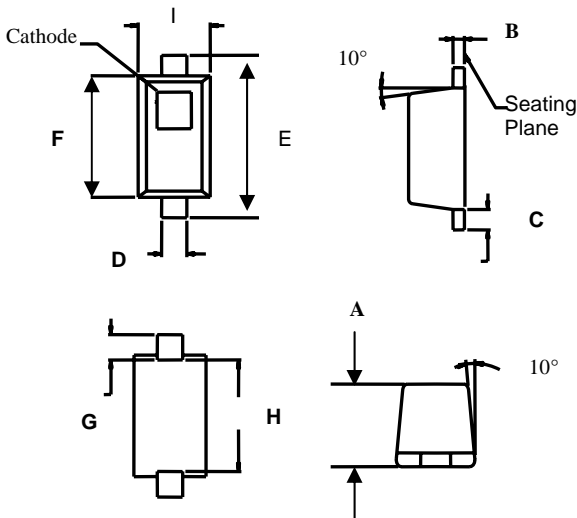


Case Styles (Cont'd)

SC-79

Case Style 1279

SC-79 (Case Style 1279)



DIM.	INCHES		MILLIMETERS	
	MIN.	MAX.	MIN.	MAX.
A	0.020	0.028	0.51	0.71
B	0.003	0.008	0.08	0.20
C	0.006	0.010	0.15	0.25
D	0.010	0.014	0.25	0.36
E	0.059	0.067	1.50	1.70
F	0.043	0.051	1.09	1.30
G	0.011	0.012	0.28	0.30
H	0.037	0.043	0.94	1.09
I	0.027	0.035	0.69	0.89