Data Sheet

Description/Applications

The HSMP-389Y of Avago Technologies is a PIN Diode that optimized for switching applications where low resistance at low current and low capacitance are required. It is housed in a miniature low cost surface mount SOD-523 package. This miniature package is particularly useful in the application where board space is the major concern.

A SPICE model is not available for PIN diodes as SPICE does not provide for a key PIN diode characteristic — carrier lifetime.

Features

- Space saving SOD-523 package
- Switching
 - Low Capacitance
 - Low Resistance at Low Current
- Tape and Reel Options Available
- MSL 1 & Lead Free

Package Marking and Pin Connections



Note: Package marking provides orientation and identification

"F" = Device Code

"?" = Month code indicates the month of manufacture

Symbol	Parameter	Unit	Max Rating
l _f	Forward Current (1 µs Pulse)	Amp	1
P _{IV}	Peak Inverse Voltage	V	100
Tj	Junction Temperature	°C	150
T _{stg}	Storage Temperature	°C	-60 to 150
θjb	Thermal Resistance ^[2]	°C/W	150

Table 1. Absolute Maximum Ratings ^[1] at $Tc = +25^{\circ}C$

Notes:

1. Operation in excess of any one of these conditions may result in permanent damage to the device.

2. Thermal Resistance is measured from junction to board using IR method.

Table 2. Electrical Specifications at $Tc = +25^{\circ}C$

	Minimum Breakdown	Maximum Total	Maximum Total
	Voltage V _{BR} (V)	Resistance R _s (Ohm)	Capacitance CT (pF)
	100	2.5	0.30
Test Conditions	VR = VBR	$I_F = 5 \text{ mA}$	$V_{R} = 5V$
	Measure IR ≤ 10µA	f = 100 MHz	f = 1MHz

Table 3. Typical Parameters at $Tc = +25^{\circ}C$

	Series Resistance	Carrier Lifetime	Total Capacitance
	Rs (Ohm)	(ns)	CT (pF)
	3.8	200	0.20
Test Conditions	$I_F = 1 \text{ mA}$	$I_F = 10mA$	$V_{R} = 5 V$
	f = 100 MHz	$I_R = 6mA$	f = 1MHz

Typical Performance Curves at $Tc = +25^{\circ}C$









Figure 2. Forward Current vs. Forward Voltage

Figure 3. RF Capacitance vs. Reverse Bias





Figure 4. 2nd Harmonic Input Intercept Point vs. Forward Bias Current

Figure 5. Typical Reverse Recovery Time vs. Reverse Voltage

Package Outline and Dimension





PCB Footprint



Unit : mm



DIM	MILLIMETERS
A	1.60 ± 0.10
В	1.20 ± 0.10
C	0.80 ± 0.10
D	0.30 ± 0.05
E	0.60 ± 0.10
F	0.13 ± 0.05

Device Orientation



Tape Dimensions



Specification < Unit : mm > hole pitch : 50 Pitch Tolerance : 200 ± 0.3 General Tolerance : ± 0.1 Surface resistance : 104 ~ 108 Ω

Part Number Ordering Information

Part number	No. of Units Container	
HSMP-389Y-BLKG	100	Anti-static bag
HSMP-389Y-TR1G	3000	7" reel

For product information and a complete list of distributors, please go to our web site: www

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