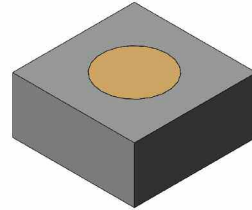


Silicon PIN Diode

MMP7052-11 Datasheet

Features

- Fast switching: 25 ns typical
- Low Series Resistance for Low Insertion Loss and High Isolation: $R_s < 1 \Omega$
- Low Junction Capacitance for Low Insertion Loss and High Isolation: $C_j < 0.3 \text{ pF}$
- Low Thermal Resistance: $< 25^\circ\text{C/W}$
- Also Available in Several Package Styles
- RoHS Compliant



Description

The MMP7052-11 PIN diode is a fast switching, low series resistance, low capacitance PIN diode chip. This diode is also available packaged in several other package styles. The low junction capacitance, thin I layer and low series resistances of the MMP7052-11 combine to produce outstanding insertion loss, isolation and switching time.

The low thermal resistance ($< 25^\circ\text{C/W}$) of the MMP7052-11 enables the device to safely handle moderately high power signals in high frequency switching applications.

This rugged device is capable of reliable operation in all military, commercial and industrial applications. The device is RoHS compliant.

The MMP7052-11 PIN diode is designed to be used in moderate peak and average power switch applications which operate at high frequencies and require low switching time. It performs exceptionally well from UHF through microwave frequencies.

Environmental Capabilities

The MMP7052-11 PIN diode is capable of meeting the environmental requirements of MIL-STD-750 and MIL-STD-883.

ESD Rating

As are all semiconductors, PIN Diodes are susceptible to damage from ESD events. Proper ESD prevention procedures should be followed. The ESD rating for this device is Class 1A (HBM).



Electrical Specifications

$T_A = 25^\circ\text{C}$ (Unless Otherwise Noted)

Parameter	Symbol	Test Conditions	Minimum Value	Typical Value	Maximum Value	Units
Breakdown Voltage	V_B	$I_R = 10 \mu\text{A}$	200			V
Series Resistance (Note 1)	R_{S10}	$I_F = 75 \text{ mA}, f = 1 \text{ GHz}$			0.7	Ω
		$I_F = 20 \text{ mA}, f = 1 \text{ GHz}$			1.4	
Junction Capacitance	C_J	$V_R = 20 \text{ V}, f = 1 \text{ MHz}$			0.3	pF
Minority Carrier Lifetime	T_L	50% control to 90 % output voltage, $I_F = 10 \text{ mA}, I_R = 6 \text{ mA}, f = 1 \text{ kHz}$		600		ns
I-layer Thickness	W			30		Microns
Thermal Resistance	Θ_{JC}				25	$^\circ\text{C/W}$

Notes:

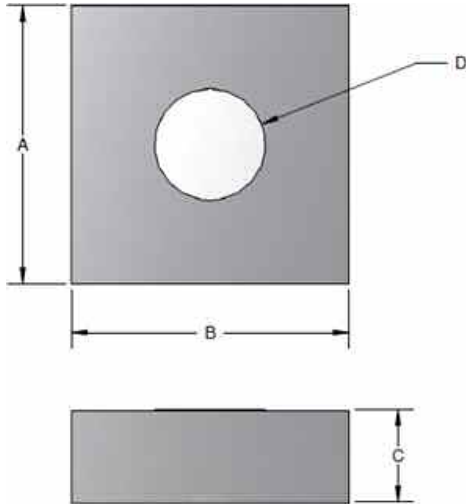
- Series resistance (RS) is measured on the Agilent 4291 Impedance Analyzer..

Absolute Maximum Ratings

$T_A = +25^\circ\text{C}$ (Unless Otherwise Noted)

Parameter	Conditions	Absolute Maximum Value
Forward DC Current		150 mA
Reverse DC Voltage		250 V
Forward DC Voltage	$I_F = 150 \text{ mA}$	1.3 V
Operating Temperature		- 55 $^\circ\text{C}$ to 150 $^\circ\text{C}$
Storage Temperature		- 65 $^\circ\text{C}$ to 200 $^\circ\text{C}$
Junction Temperature		175 $^\circ\text{C}$
Total Dissipated Power	Infinite heat sink, $T_{CASE} = 25 \text{ }^\circ\text{C}$. Derate power linearly from 750 mW @ 85 $^\circ\text{C}$ to 0 W @ 175 $^\circ\text{C}$	750 mW

Outline Case Style CS11



DIMENSIONS (INCHES)			
ITEM	MIN	TYP	MAX
A	0.012	0.013	0.014
B	0.012	0.013	0.014
C	0.007	0.008	0.009
D	0.006	0.007	0.008

Part Number Ordering Information

Part Number	Description	Packaging
MMP7052-11-GP	PIN Diode	GelPak™ (Quantity = 100)
MMP7052-11-W	PIN Diode	Waffle Pack (Quantity = 400)

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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.