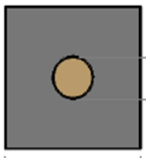
MMP7060 - MMP7069 Series

High Power Switching and Attenuation Silicon PIN Diodes

Rev. V1

Features

- Fast Switching
- Low Series Resistance
- Low Junction Capacitance
- Low Thermal Resistance
- RoHS* Compliant



Consult Factory for other package styles.

Description

The MMP7060 - 69 Series of PIN diodes are fast switching, low series resistance, low capacitance PIN diode chips. These diodes are also available packaged in several other package styles. The low junction capacitance, thin I-layer and low series resistances combine to produce outstanding insertion loss, isolation and switching time. The low thermal resistance enables these devices to safely handle moderately high power signals in high frequency switching applications. These rugged devices are capable of reliable operation in all military, commercial and industrial applications.

This series of PIN diodes are designed to be used in moderate peak and average power switch applications which operate at high frequencies and require low switching time. These diodes performs exceptionally well from UHF through microwave frequencies.

Environmental Capabilities

The MMP706x-11 Series of PIN diodes are capable of meeting the environmental requirements of MIL-STD-750 and MIL-STD-883.

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 (HBM) Class 0 devices.

Electrical Specifications: T_A = +25°C

Model	Reverse Voltage Breakdown[1] (V_{BR})	Junction Capacitance[2] (C_J)	Minority Carrier Lifetime[3] (T_L)	Theta (θ_{JC})	Series Resistance[4] @ 1 mA (R_S)	Series Resistance @ 10 mA (R_S)	Series Resistance @ 100 mA (R_S)
	V	pF	ns	°C/W	Ω	Ω	Ω
	Min.	Max.	Typ.	Max.	Max.	Max.	Max.
MMP7060-11	250	0.05	1.0	20	25.0	10.0	2.0
MMP7061-11		0.08	1.0	20	20.0	8.0	1.5
MMP7062-11		0.10	1.0	20	15.0	6.0	1.2
MMP7063-11		0.20	1.0	15	8.0	3.5	1.0
MMP7064-11		0.30	1.5	15	6.0	2.0	0.8

1. Reverse Breakdown Voltage measured at 10 µa.
2. Junction Capacitance measured at 50 V, 1 MHz.
3. Minority Carrier lifetime measured with I_F = 10 mA, I_R = 10 mA.
4. Series Resistance is measured at 1 MHz using transmission loss techniques.

* Restrictions on Hazardous Substances, European Union Directive 2011/65/EU.

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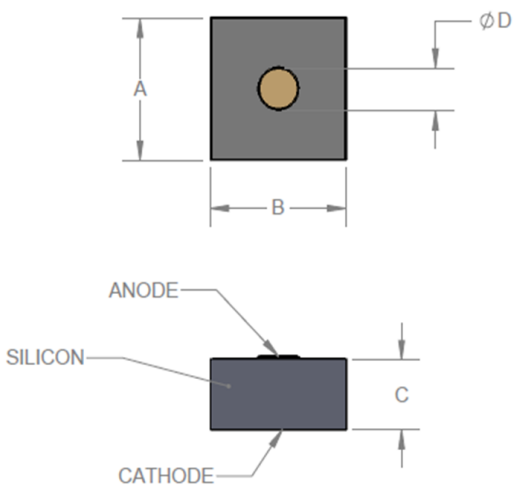
	V	pF	ns	°C/W	Ω	Ω	Ω
	Min.	Max.	Typ.	Max.	Max.	Max.	Max.
MMP7065-11	500	0.08	1.5	15	40.0	8.0	1.5
MMP7066-11		0.10	1.5	15	15.0	5.0	1.2
MMP7067-11		0.20	1.5	12	10.0	4.0	1.0
MMP7068-11		0.30	2.0	10	8.0	3.5	0.8
MMP7069-11		0.50	2.0	10	6.0	2.0	0.7

Absolute Maximum Ratings

Parameter	Absolute Maximum
Operating Temperature	-55°C to +150°C
Storage Temperature	-65°C to +200°C
Assembly Temperature	<300°C for 5 seconds

CS11



Assembly Instructions

Die attach of MMP706x silicon PIN diode chips may be accomplished with conductive epoxy or a eutectic solder such as Au(80%)/Sn(20%) or Au(88%)/Ge(12%). Electrical connection to the cathode may be made with a Au wire or ribbon, utilizing thermo compression or thermosonic bonding. Care should be exercised to not employ excessive pressure or ultrasonic energy while wire/ribbon bonding to avoid physical damage to the die.

Dimensions (inches)

Dimension	Min.	Nom.	Max.
A	0.012	0.013	0.014
B	0.012	0.013	0.014
C	0.004	0.005	0.006
D	0.003	0.004	0.005

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