MPP4201 - MPP4205

CONTROL DEVICES - MMSM PIN AND LIMITER DIODES
RoHS Compliant

GENERAL DESCRIPTION

This series of surface mount PIN and Limiter diodes utilize new and unique monolithic MMSM technology. The technology is a package/device integration accomplished at the wafer fabrication level. Since the cathode and anode interconnections utilize precision photolithographic techniques rather than wire bonds, parasitic package inductance is tightly controlled. The package parasitics provide smooth non-resonant functionality through X Band. This series of devices meets RoHS requirements per EU Directive 2002/95/EC.

APPLICATIONS

The MPP4200 series of PIN diodes can be used in RF circuits as an on/off element, as a switch, or as a current controlled resistor in attenuators extending over the frequency range from UHF through X band. Switch applications include high speed switches (ECM systems), TR switches channel or antenna selection switches (Telcom and WLAN applications), duplexers (radar) and digital phase shifters (phased arrays). These diodes are also used as passive and active limiters for low to moderate RF power levels. Attenuator type applications include amplitude modulators, AGC attenuators and power levelers.

KEY FEATURES

- Up to 10W incident RF power handling
- Low parasitics
- L_P = 0.02nH Typical
- C_P = 0.04pF Typical
- Broadband Performance through X-Band
- Available on Tape & Reel or on Film Frame for pick & place
- Small, SOD 323 Footprint
- RoHS Compliant [1]

1- These devices are supplied with gold terminations.

APPLICATION/BENEFITS

- Receiver protection circuits
- Broadband Switching
- Economy Switching
- RF Attenuators
- MRI

ABSOLUTE MAXIMUM RATINGS @ 25°C

Rating	Symbol	Value	Unit
Maximum Leakage Current @80% of minimum Rated V_B	I_R	0.5	uA
Operating Temperature	T_{OP}	-55 to +150	ºC
Storage Temperature	T_{STG}	-65 to +150	ºC

For the most current data, consult MICROSEMI's website: ***www.MICROSEMI.com***
Specifications are subject to change, consult the RFIS factory at (978) 442-5600 *for the latest information.*

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DEVICE ELECTRICAL PARAMETERS AT 25°C

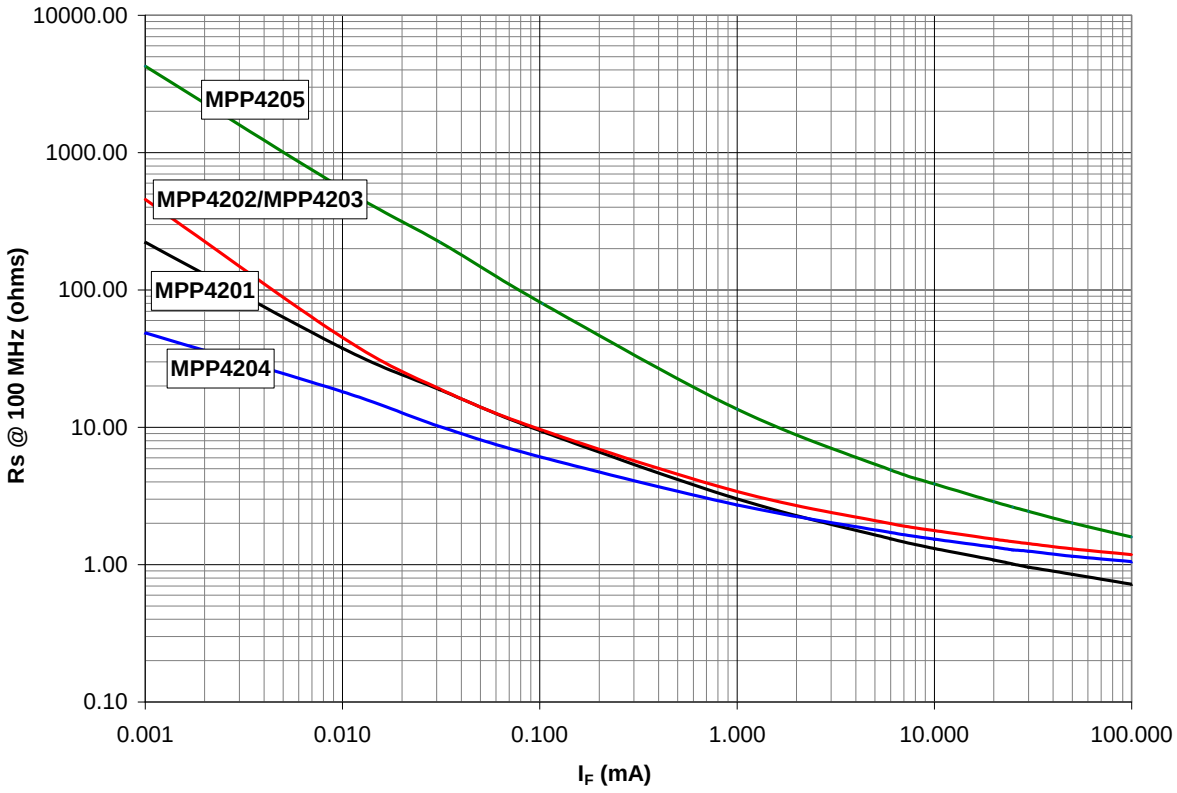
Model Number	Package Style	V_B (V) I_R=10µA (Min)	C_T(pF)[1] @-10V (Max)	R_S(Ω)[2] @0.01mA (Typ)	R_S(Ω)[2] @1mA	R_S(Ω)[2] @10mA (Max)	R_S(Ω)[2] @20mA (Max)
MPP4201	206	70	0.20				2.5
MPP4202	206	50	0.15				2.8
MPP4203	206	50	0.10				3.0
MPP4204	206	25	0.15			2.0	
MPP4205	206	70	0.15	250	7-16	5.0	

Model Number	Package Style	T_L (Typ)	Application
MPP4201	206	150	Switching / Attenuation
MPP4202	206	50	Switching
MPP4203	206	50	Economy Switching
MPP4204	206	20	Switching
MPP4205	206	150	Attenuation

Notes:

1- Capacitance is measured at f = 1 MHz.
2- Series Resistance (R_S) is measured at f = 100 MHz. Devices are mounted in a package suitable for testing.
   a. R_S is measured at 1 GHz for the MPL series devices.
   b. Not measured in anti-parallel configuration.
   c. Vr = 0V. This value is the sum of two junctions.

TYPICAL RS VS If @ 25°C



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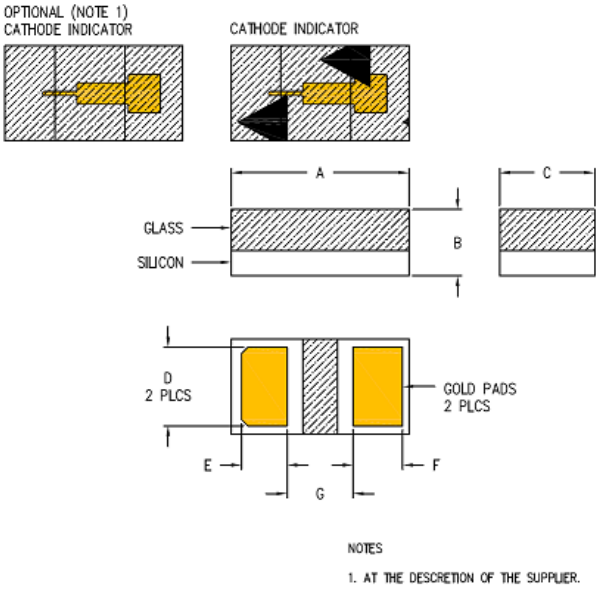
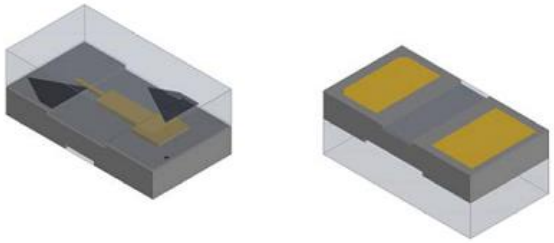
PACKAGE STYLE 206





DIM	INCHES		MM	
	MIN	MAX	MIN	MAX
A	0.038	0.048	0.965	1.219
B	0.011	0.021	0.279	0.533
C	0.018	0.028	0.457	0.711
D	0.014	0.024	0.356	0.610
E	0.006	0.016	0.152	0.406
F	0.007	0.017	0.178	0.432
G	0.011	0.021	0.279	0.533

Revision History

Revision Level / Date	Para. Affected	Description
2 / 16 April 2013 3 / 21 October 2013	- Applications / Device Electricals	Initial Release Revised

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