

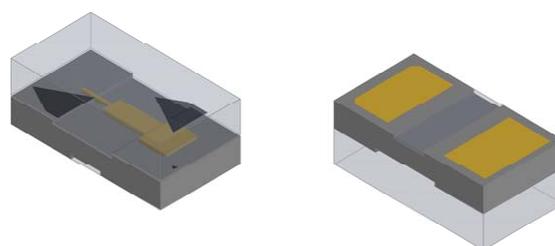
## Product Overview

The MPP4400 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 array). 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. This series of devices meets RoHS requirements.

### Key Features

- Up to 10W incident RF power handling
- Low parasitics
- $L_p = 0.02$  nH Typical
- $C_p = 0.04$  pF Typical
- Broadband performance through X-Band
- Available on tape and reel or on film frame for pick and place
- Small, SOD 323 footprint
- RoHS compliant<sup>1</sup>

### Package Style



### Applications

- Receiver protection circuits
- Broadband switching
- Economy switching
- RF attenuators
- MRI

### Performance Overview

Parameters	Conditions	Value	Units
$V_B$	$I_R = 10 \mu A$	200 (Min)	V
$C_T$	at - 10V	0.15, 0.30, 0.50	(pF)
$R_s$	at 10 mA	0.80, 1.0, 2.0	( $\Omega$ )
$T_L$		500, 750, 900	(ns)

<sup>1</sup>These devices are supplied with gold terminations.

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# 1. Electrical Specifications

## 1.1 Typical Electrical Performance

**Table 1-1.** Device Electrical Parameters at 25 °C

PN	V <sub>B</sub> at I <sub>R</sub> = 10 μA	C <sub>T</sub> <sup>1</sup> at - 10V	R <sub>S</sub> <sup>2</sup> at 10 mA	R <sub>S</sub> <sup>2</sup> at 100 mA	T <sub>L</sub>
	(V)	(pF)	(Ω)	(Ω)	(ns)
	(Min)	(Max)	(Max)	(Max)	(Typ)
MPP4401 (Formerly MPP4206)	200	0.15	2.0	1.2	500
MPP4402	200	0.30	1.0	0.75	750
MPP4403	200	0.50	0.80	0.50	900

**Notes:**

1. Capacitance is measured at f = 1 MHz.
2. Series resistance (R<sub>S</sub>) is measured at f = 100 MHz. Devices are mounted in a package suitable for testing.

## 1.2 Absolute Maximum Ratings

The following table shows the absolute maximum ratings at 25 °C unless otherwise specified.

**Table 1-2.** Absolute Maximum Ratings

Ratings	Symbol	Value	Unit
Maximum Leakage current at 80% of minimum rated V <sub>B</sub>	I <sub>R</sub>	0.5	μA
Operating temperature	T <sub>OP</sub>	-55 to +150	°C
Storage temperature	T <sub>STG</sub>	-65 to +150	°C

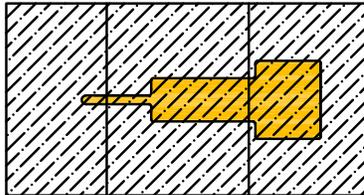


ESD Sensitive Device

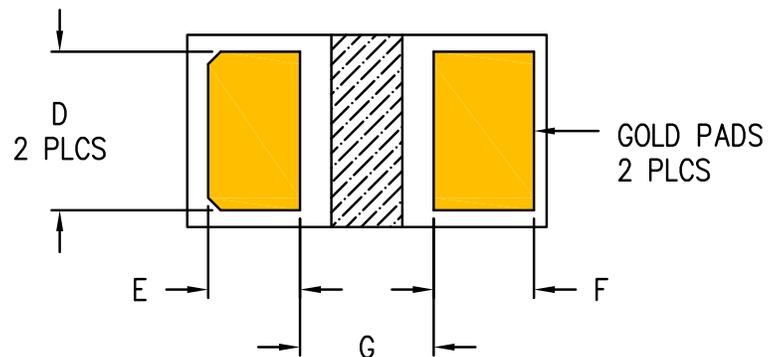
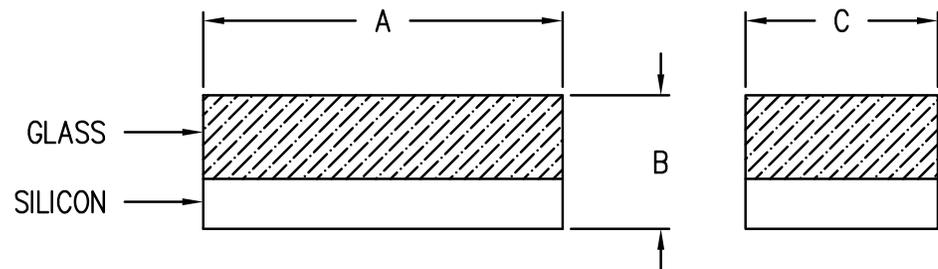
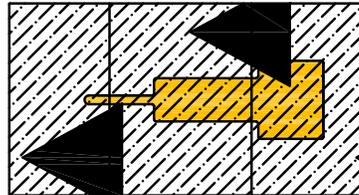
## 2. Outline Drawing

Package Style-206

OPTIONAL (NOTE 1)  
CATHODE INDICATOR



CATHODE INDICATOR



### NOTES

1. AT THE DESCRETION OF THE SUPPLIER.

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

### 3. Ordering Information

For additional ordering information, contact your Microchip sales representative.

Part Number	Package Style
MPP4401	206
MPP4402	206
MPP4403	206

**Note:**

1. For tape and reel add /TR at the end, for example, MPP4401-206/TR.

## 4. Revision History

The revision history describes the changes that were implemented in the document. The changes are listed by revision, starting with the most current publication.

Revision	Date	Description
A	07/2023	Document migrated from Microsemi template to Microchip template; Assigned Microchip literature number DS-00005056A.
Initial release (Microsemi Revisions A and B)	10/2013 – 10/2014	Initial Releases

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