

**DESCRIPTION**

Microsemi's InGaAs/InP PIN Photo Diode chips are ideal for high bandwidth 1310nm and 1550nm optical networking applications.

The device series offers superior noise performance and sensitivity due to their planar construction and passivation.

The MXP400X series of photo diodes are currently offered in die form allowing manufacturers the versatility of custom assembly configurations.

This device is ideal for manufacturers of optical receivers, transponders, optical transmission modules and combination PIN photo diode – transimpedance amplifier.

Microsemi will assemble die on submounts and custom configurations.

**KEY FEATURES**

- High Responsivity
- Low Dark Current
- Extremely Low Capacitance
- 12GHz , High Bandwidth
- Custom Sub-mounts
- Large 40um Bond Pad

**APPLICATIONS**

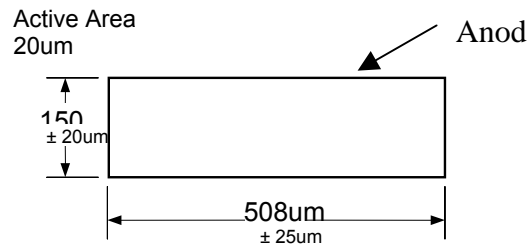
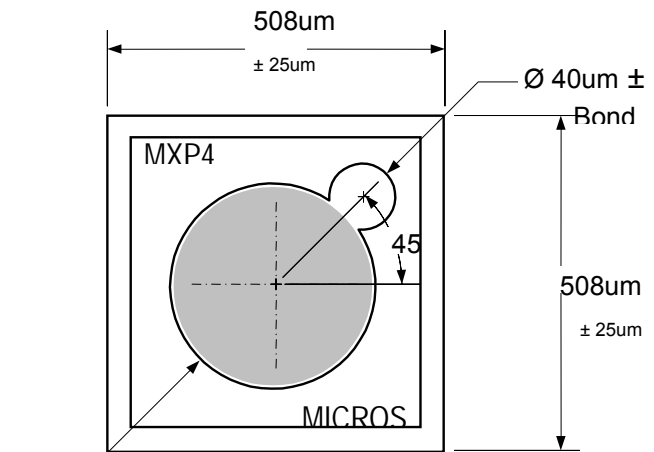
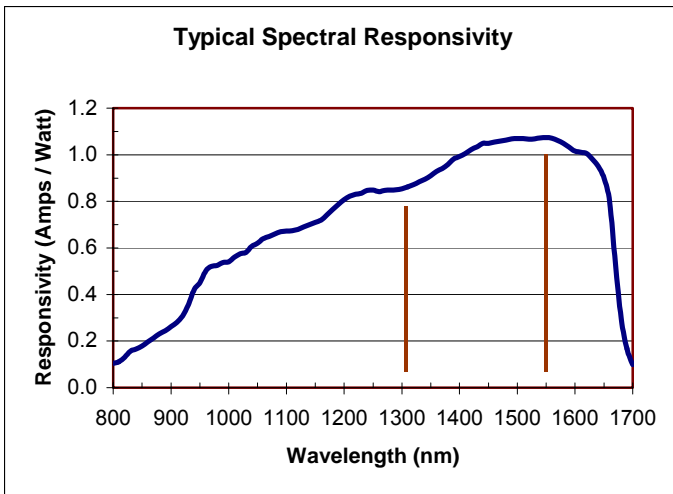
- 1310nm CATV Optical Applications
- 1550nm DWDM Optical Applications
- SONET/SDH (FEC), ATM
- 10Gigabit Ethernet, Fibre Channel
- 10Gbps NRZ or RZ modulation
- Optical Test equipment

**BENEFITS**

- Planar passivation
- Low Contact Resistance

**IMPORTANT:** For the most current data, consult MICROSEMI's website: <http://www.microsemi.com>

**PRODUCT HIGHLIGHT**



**CHARACTERISTICS**

 Test conditions (unless otherwise noted):  $T_A = 25^\circ\text{C}$ ,  $V_R = 5\text{ Volts}$ 

Parameter	Symbol	Test Conditions	MXP4003			Units
			Min	Typ	Max	
<b>▶ MAXIMUM RATINGS</b>						
Operating Junction Temperature Range	$T_J$		-20		+85	$^\circ\text{C}$
Storage Temperature Range	$T_{STG}$		-55		+125	$^\circ\text{C}$
Maximum Soldering Temperature		10 seconds maximum at temperature			+260	$^\circ\text{C}$
<b>▶ ELECTRICAL CHARACTERISTICS</b>						
Active Area Diameter				40		$\mu\text{m}$
Responsivity (1)	<b>R</b>	$V_R = 5\text{V}, \lambda = 1550\text{nm}$ $V_R = 5\text{V}, \lambda = 1310\text{nm}$	0.95 0.80	1.0 0.86		A/W
Linearity (2)	<b>L</b>	$V_R = 5\text{V}$ @10mW input power			5	%
Dark Current	<b>I<sub>D</sub></b>	$V_R = 5\text{V}$			1.0	nA
Breakdown Voltage	<b>BV<sub>R</sub></b>	$I_R = 10\mu\text{A}$	20			Volts
Capacitance	<b>C</b>	$V_R = 5\text{V}$			0.22	pF
Bandwidth	<b>BW</b>	$V_R = 5\text{V}, \lambda = 1550\text{nm}$ @3dB	10			GHz

Note:

1. Antireflective coating is  $\frac{1}{4}$  wavelength at 1430nm covering 1310 and 1550nm applications
2. Maximum distortion from nominal @ 10mW input power

**PRECAUTIONS FOR USE**

ESD protection is important. Standard ESD protection procedures should be employed whenever handling InGaAs PIN photo diode.