

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 MXP4000 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
- High Bandwidth
- Custom Sub-mounts

APPLICATIONS

- 1310nm CATV Optical Applications
- 1550nm DWDM Optical Applications
- SONET/SDH, ATM
- 10 Gigabit Ethernet, Fibre Channel

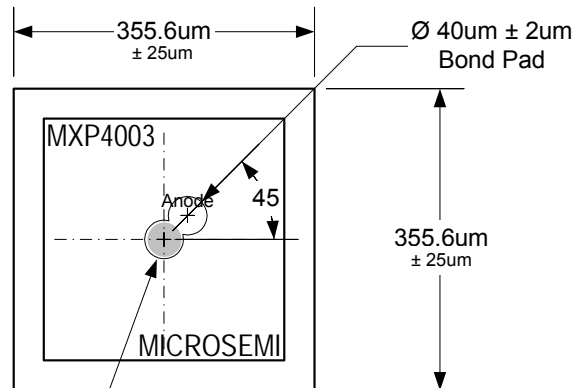
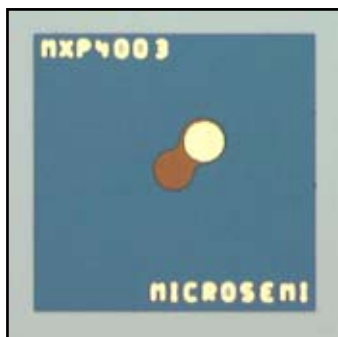
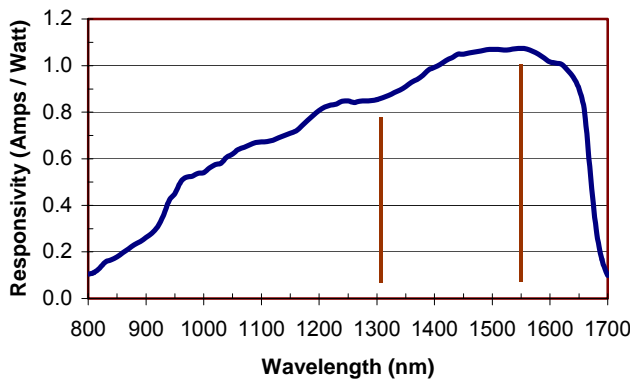
BENEFITS

- Planar passivation
- Low Contact Resistance

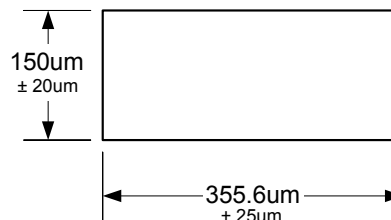
IMPORTANT: For the most current data, consult MICROSEMI's website: <http://www.microsemi.com>

PRODUCT HIGHLIGHT

Typical Spectral Responsivity



Ø 40um ± 2um Active Area



CHARACTERISTICS

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

Parameter	Symbol	Test Conditions	MXP4003			Units
			Min	Typ	Max	
MAXIMUM RATINGS						
Operating Tj 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	$^\circ\text{C}$
ELECTRICAL CHARACTERISTICS						
Active Area Diameter				40		μm
Responsivity (1)	R	$V_R = 5\text{V}$, $\lambda = 1550\text{nm}$ $V_R = 5\text{V}$, $\lambda = 1310\text{nm}$	0.95 0.80	1.0 0.86		A/W
Linearity (2)	L	$V_R = 5\text{V} \leq 10\text{mW}$ input power			5	%
Dark Current	I_D	$V_R = 5\text{V}$		0.3	1.0	nA
Breakdown Voltage	BV_R	$I_R = 10\mu\text{A}$	20	25		Volts
Capacitance (3)	C	$V_R = 5\text{V}$		0.27	0.33	pF
Bandwidth	BW	$V_R = 5\text{V}$, $\lambda = 1550\text{nm}$ @3dB	7.5			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
3. See CV curve

PRECAUTIONS FOR USE

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

