Microsemi
OPTO-ELECTRONIC PRODUCTS

Obsolete Product – not recommended for new design

MXP4005 – 12.7 Gbps

InGaAs/InP PIN Photo Diode

PRODUCTION DATA SHEET

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.

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

KEY FEATURES

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

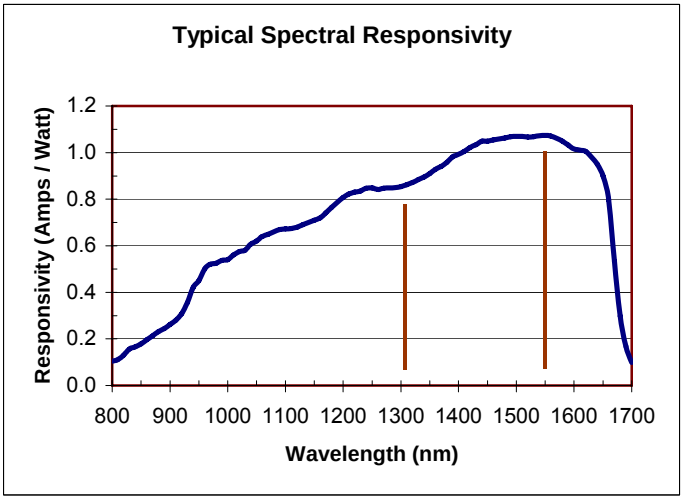
APPLICATIONS

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

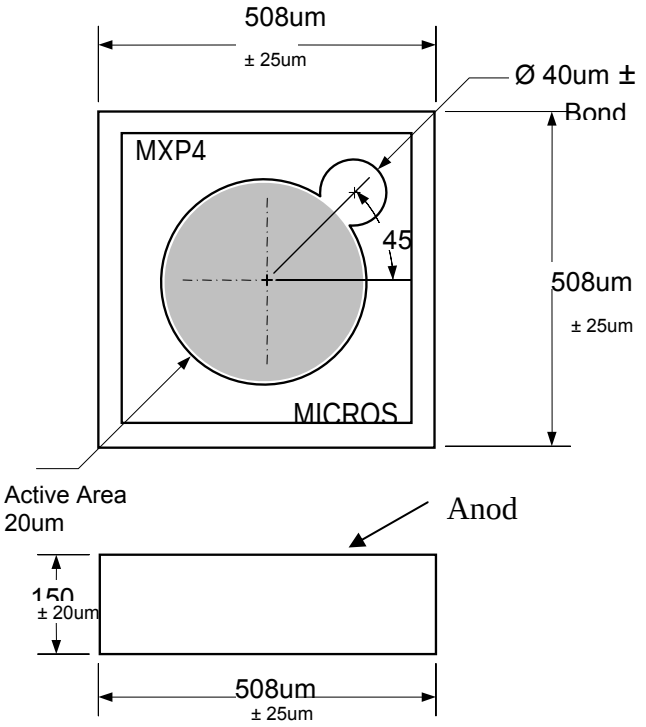
BENEFITS

- Planar passivation
- Low Contact Resistance

PRODUCT HIGHLIGHT







MXP4005

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CHARACTERISTICS

Test conditions (unless otherwise noted): T_A = 25°C, V_R = 5 Volts

Parameter	Symbol	Test Conditions	MXP4003			Units
			Min	Typ	Max	
MAXIMUM RATINGS						
Operating Junction Temperature Range	T_J		-20		+85	°C
Storage Temperature Range	T_{STG}		-55		+125	°C
Maximum Soldering Temperature		10 seconds maximum at temperature			+260	°C
ELECTRICAL CHARACTERISTICS						
Active Area Diameter				40		µm
Responsivity (1)	R	V_R = 5V, λ= 1550nm VR = 5V, λ=1310nm	0.95 0.80	1.0 0.86		A/W
Linearity (2)	L	VR = 5V @10mW input power			5	%
Dark Current	I_D	V_R = 5V			1.0	nA
Breakdown Voltage	BV_R	I_R = 10µA	20			Volts
Capacitance	C	V_R = 5V			0.22	pF
Bandwidth	BW	V_R = 5V, λ= 1550nm @3dB	10			GHz

Note:
1. Antireflective coating is ¼ 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.

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