



OPTO ELECTRONIC PRODUCTS

PRELIMINARY

MXP4000 Series

InGaAs/InP PIN Photodiode Chips

PRODUCT PREVIEW

DESCRIPTION

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

The four devices offered feature excellent dark current ratings of 1-3 nA, and a breakdown voltage of 20 Volts with the bandwidth options for 156 Mb/sec (active area of 300 μm^2), 622 Mb/sec (active area of 200 μm^2), 2.5 Gb/sec (active area of 75 μm^2), 10 Gb/sec (active area of 40 μm^2).

The MXP4000 series of photodiodes are originally offered in die form for manufacturers of optical transponders, supervisory VCSEL monitoring circuits, and combination PIN Photodiode-transimpedance amplifier hybrids.

KEY FEATURES

- Low Dark Current
- Extremely low capacitance
- Wide bandwidth
- Fast response time

APPLICATIONS/BENEFITS

- 1310nm Fiber Optic Applications
- 1550nm Fiber Optic Applications
- Optical Transponders

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

PART RATINGS AND CHARACTERISTICS

Item	Sym	MXP4000	MXP4001	MXP4002	MXP4003	Unit	Test Condition
Active Area(Dia.)		300	200	75	40	μm	—
Photo Sensitive Area							
Detection Range							—
Responsivity	Res	0.9	0.85	0.8	0.8	A/W	Resp. @ 1300nm
Responsivity	Res	0.9	0.9	0.9	0.9	A/W	Resp. @ 1550nm
Dark Current	I _b	10	4	0.5	0.2	nA	V _R @ -5V
Capacitance	C	5.0	2	0.5	0.2	pF	
Rise/Fall Time	t _r /t _f	2 ns	0.5 ns	100 ps	20 ps		
Bandwidth		0.156	0.622	2.5	10	Gb/Sec	
Breakdown Voltage	VB	20	20	20	20	V	IR @10uA
Chip Size		0.020 x 0.020	0.020 x 0.020	0.014 x 0.014	0.014 x 0.014	Inches	
Bonding Pad Size		100	100	40	40	$\mu\text{m} \times \mu\text{m}$	