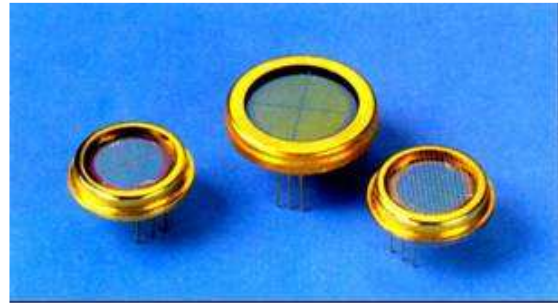


# Silicon Photodetector

## Series 4X

### HIGH SPEED 1064 NM PULSE SENSING

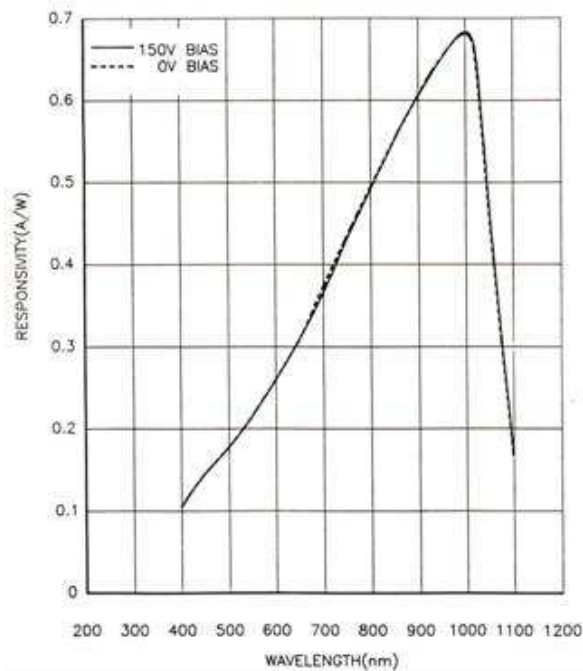
The 4X series of photodetectors are designed specifically for sensing high speed 1064 nm Nd YAG laser pulses. The detector structure is designed to be fully depleted at 150 volts reverse bias and offers high pulsed and DC responsivity at wavelengths up to 1100 nm coupled with an extremely low capacitance per unit area.



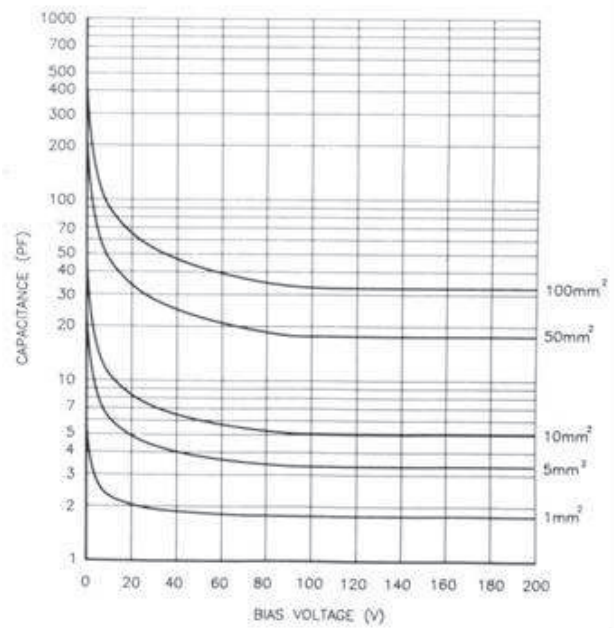
### ABSOLUTE MAXIMUM RATINGS

	Max. Rating
DC Reverse Voltage	180V
Peak Pulse Current (1 $\mu$ s, 1% duty cycle)	200mA
Peak DC Current	10mA
Storage Temperature Range	-45°C to + 100°C
Operating Temperature Range	-25°C to + 75°C
Soldering Temperature for 5 seconds max.	200°C

Series 4X – Typical Spectral Response



Series 4X – Typical Capacitance versus Bias Voltage and Active Area



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## Electrical / Optical Specifications

Characteristics measured at 22°C (±2) ambient, and a reverse bias of 150 volts, unless otherwise stated.

### Single Elements

Type No.	Active Area		Responsivity A/W $\lambda = 1064 \text{ nm}$		Dark Current nA		NEP $\text{WHz}^{-1/2}$ $\lambda = 1064 \text{ nm}$	Capacitance pF		Risetime ns $\lambda = 1064 \text{ nm}$ $R_L = 50 \Omega$	Package
	mm <sup>2</sup>	mm	Min.	Typ.	Max.	Typ.	Typ.	V <sub>r</sub> = 0V Typ.	V <sub>r</sub> = 150V Max.	Typ.	
OSD1-4X	1	1.13 dia	0.35	0.40	50	5	$1.2 \times 10^{-13}$	8	2	12	TO18
OSD5-4X*	5	2.52 dia	0.35	0.40	100	10	$1.7 \times 10^{-13}$	32	4	12	TO5
OSD50-4X	50	7.98 dia	0.35	0.40	500	50	$3.9 \times 10^{-13}$	320	20	12	TO8
OSD100-4X*	100	11.3 dia	0.35	0.40	1000	100	$5.5 \times 10^{-13}$	640	36	12	13

### Quadrants

(Values given are per element unless otherwise stated)

Type No.	Active Area (Total)			Responsivity A/W $\lambda = 1064 \text{ nm}$		Dark Current nA		NEP $\text{WHz}^{-1/2}$ $\lambda = 1064 \text{ nm}$	Capacitance pF		Risetime ns $\lambda = 1064 \text{ nm}$ $R_L = 50 \Omega$	Crosstalk % $\lambda = 1064 \text{ nm}$		Package
	mm <sup>2</sup>	mm	Sep. mm	Min.	Typ.	Max.	Typ.	Typ.	V <sub>r</sub> = 0V Typ.	V <sub>r</sub> = 150V Max.	Typ.	Max.	Typ.	
QD50-4X	50	7.98 dia	0.2	0.35	0.40	150	10	$1.7 \times 10^{-13}$	80	7	12	5	1	10
QD100-4X	100	11.3 dia	0.2	0.35	0.40	300	20	$2.5 \times 10^{-13}$	155	12	12	5	1	12
QD320-4X*	320	20.2 dia	0.2	0.35	0.40	1000	60	$4.3 \times 10^{-12}$	480	30	12	5	1	14

\* Supplied with optional guard ring connected

**Note: Recommended operating voltage range 0 to 150 volts, for all series 4X Detectors**

Highlighted items are Centronic standard products generally available from stock



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