

Silicon Photodetectors

T-41-45
T-41-47

Series 4

Designed for 1064 nm Pulsed Operation

The Series 4 photodetectors are specifically designed for 1064 nm pulsed Nd YAG laser sensing applications. They offer high pulsed and D.C. responsivity extending to 1150 nm and also provide an extremely low capacitance per unit area.

ABSOLUTE MAXIMUM RATINGS

	Max. Rating	Unit
DC Reverse Voltage	200	V
Peak Pulse Current (1 μ S, 1% duty cycle)	200	mA
Peak DC Current	10	mA
Storage Temperature Range Except for: LD20-4, MD25-4, MD100-4	-45 to +100 -25 to +80	degree C
Operating Temperature Range Except for: LD20-4, MD25-4, MD100-4	-25 to +75 0 to +75	degree C
Soldering Temperature for 5 seconds max.	200	degree C

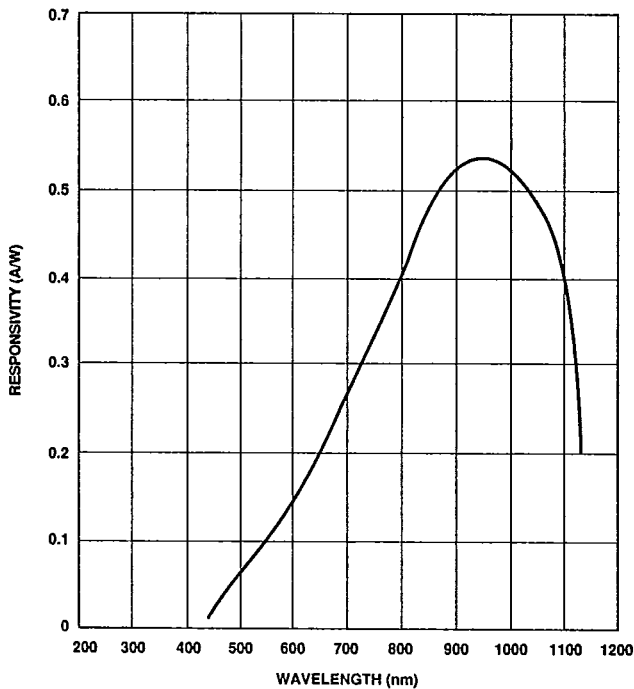


Fig.21 SERIES 4 - TYPICAL SPECTRAL RESPONSE

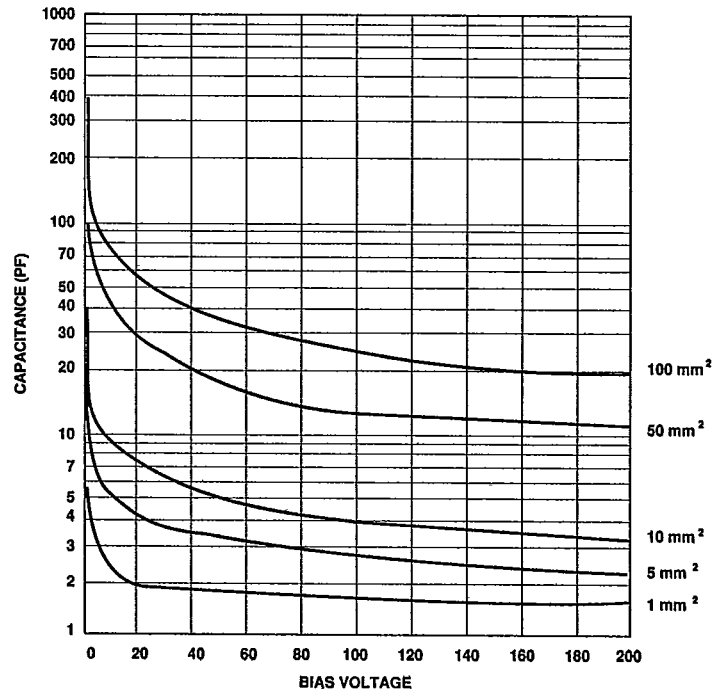


Fig.22 SERIES 4 - TYPICAL CAPACITANCE VERSUS BIAS VOLTAGE FOR A GIVEN DETECTOR AREA

Electrical / Optical Specifications

Characteristics measured at 22° C (±2) ambient, and a reverse bias of 180 volts, unless otherwise stated.

Single Elements

Type No.	Active Area		Responsivity A/W L = 1064 nm		Dark Current μA		NEP WHz ^{-1/2} L = 1064 nm	Capacitance pF		Risetime ns L = 1064 nm RL = 50 Ω	Package
	mm ²	mm	Min.	Typ.	Max.	Typ.	Typ.	V _r = 0V Max.	V _r = 180V Max.	Typ.	
OSD1-4	1	1.13 dia	0.39	0.47	0.25	0.05	5.4 x 10 ⁻¹³	7	2	42	1
OSD5-4*	5	2.52 dia	0.39	0.47	0.5	0.06	5.9 x 10 ⁻¹³	27	4	42	4
OSD50-4	50	7.98 dia	0.39	0.47	2	0.2	1.1 x 10 ⁻¹²	250	15	42	9
OSD100-4*	100	11.3 dia	0.39	0.47	8	0.5	1.7 x 10 ⁻¹²	500	30	42	13
OSD200-4*	200	15.96 dia	0.39	0.47	12	1.0	2.4 x 10 ⁻¹²	1000	60	42	13
OSD300-4*	300	19.54 dia	0.39	0.47	15	1.2	2.6 x 10 ⁻¹²	1500	90	43	15

Quadrants

(Values given are per element unless otherwise stated)

Type No.	Active Area (Total)			Responsivity A/W L = 1064 nm		Dark Current μA		NEP WHz ^{-1/2} L = 1064 nm	Capacitance pF		Risetime ns L = 1064 nm RL = 50 Ω	Crosstalk % L = 1064 nm		Package
	mm ²	mm	Sep. mm	Min.	Typ.	Max.	Typ.	Typ.	V _r = 0V Max.	V _r = 180V Max.	Typ.	Max.	Typ.	
QD50-4	50	7.98 dia	0.2	0.39	0.47	2	0.1	7.6 x 10 ⁻¹³	64	5	42	5	1	10
QD100-4*	100	11.3 dia	0.2	0.39	0.47	4	0.2	1.1 x 10 ⁻¹²	127	8	42	5	1	12
QD320-4*	320	20.2 dia	0.3	0.39	0.47	6	1.0	2.4 x 10 ⁻¹²	400	25	42	5	1	14

Linear Arrays

(Values given are per element unless otherwise stated)

Type No.	No. of Elements	Array Dimensions				Responsivity A/W L = 1064 nm		Dark Current μA		NEP WHz ^{-1/2} L = 1064 nm	Capacitance pF		Risetime ns L = 1064 nm RL = 50 Ω	Package
		Area mm ²	Width mm	Lgth. mm	Sep. mm	Min.	Typ.	Max.	Typ.	Typ.	V _r = 0V Max.	V _r = 180V Max.	Typ.	
LD20-4*	20	3.6	4.0	0.9	0.05	0.39	0.47	0.7	0.06	5.9 x 10 ⁻¹³	20	2.5	42	16

Matrix Arrays

(Values given are per element unless otherwise stated)

Type No.	No. of Elements	Array Dimensions				Responsivity A/W L = 1064 nm		Dark Current μA		NEP WHz ^{-1/2} L = 1064 nm	Capacitance pF		Risetime ns L = 1064 nm RL = 50 Ω	Package
		Area mm ²	Width mm	Lgth. mm	Sep. mm	Min.	Typ.	Max.	Typ.	Typ.	V _r = 0V Max.	V _r = 180V Max.	Typ.	
MD25-4*	5 x 5	7.29	2.7	2.7	0.1	0.39	0.47	1.0	0.1	7.6 x 10 ⁻¹³	47	4	42	18
MD100-4*	10 x 10	1.96	1.4	1.4	0.1	0.39	0.47	0.4	0.07	6.0 x 10 ⁻¹³	12	2	42	19

* Supplied with optional guard ring connected.

Note: Recommended operating voltage range 0 to 180 volts, for all Series 4 Detectors.