

Silicon Photodetectors

T-41-45
T-41-47

Series 4T

Lower Cost Version of Series 4

The Series 4T photodetectors are a lower cost series offering good responsivity out to 1150 nm and low capacitance. They are restricted to a maximum of 100 volts operation and hence exhibit a slower pulsed response at longer wavelengths.

ABSOLUTE MAXIMUM RATINGS

	Max. Rating	Unit
DC Reverse Voltage	120	V
Peak Pulse Current (1 μ S, 1% duty cycle)	200	mA
Peak DC Current	10	mA
Storage Temperature Range Except for: LD20-4T, MD25-4T, MD100-4T	-45 to +100 -25 to +80	degree C
Operating Temperature Range Except for: LD20-4T, MD25-4T, MD100-4T	-25 to +75 0 to +75	degree C
Soldering Temperature for 5 seconds max.	200	degree C

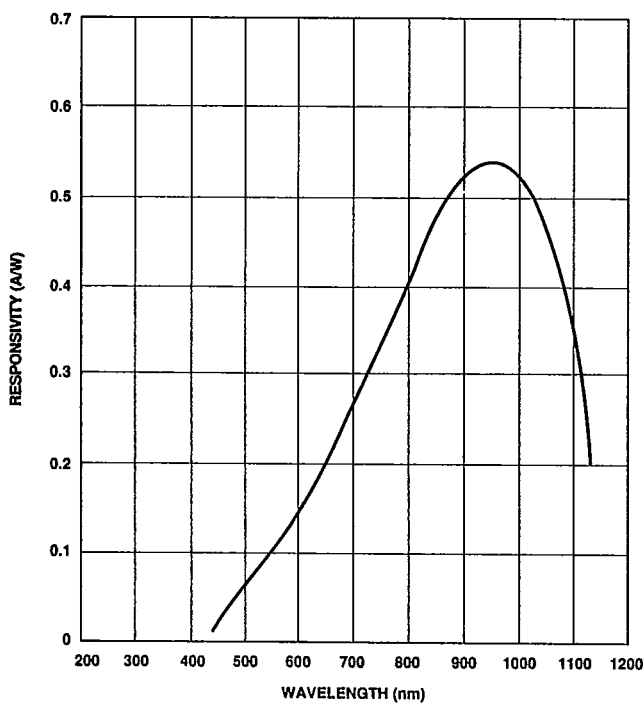


Fig.23 SERIES 4T - TYPICAL SPECTRAL RESPONSE

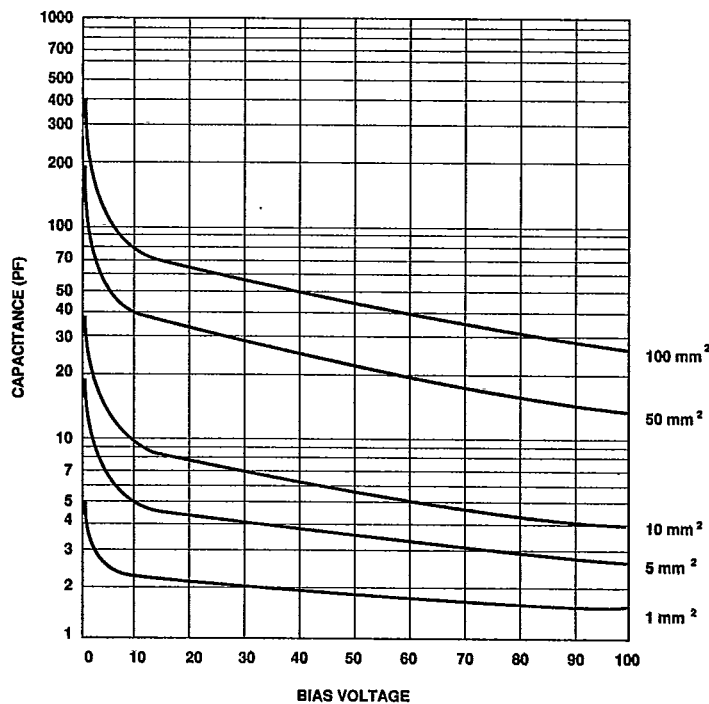


Fig.24 SERIES 4T - TYPICAL CAPACITANCE VERSUS BIAS VOLTAGE FOR A GIVEN DETECTOR AREA

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Electrical / Optical Specifications

Characteristics measured at 22° C (±2) ambient, and a reverse bias of 100 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 Typ.	Capacitance pF		Rise time ns L = 900 nm R _L = 50 Ω Typ.	Package
	mm ²	mm	Min.	Typ.	Max.	Typ.		V _r = 0V Max.	V _r = 100V Max.		
OSD1-4T	1	1.13 dia	0.39	0.47	0.25	0.01	2.4 x 10 ⁻¹³	7	2	44	1
OSD5-4T*	5	2.52 dia	0.39	0.47	0.5	0.05	5.4 x 10 ⁻¹³	27	4	17	4
OSD50-4T	50	7.98 dia	0.39	0.47	2	0.15	9.3 x 10 ⁻¹³	250	17	18	9
OSD100-4T*	100	11.3 dia	0.39	0.47	8	0.3	1.3 x 10 ⁻¹²	500	32	19	13
OSD200-4T*	200	15.96 dia	0.39	0.47	12	0.5	1.7 x 10 ⁻¹²	1000	62	20	13
OSD300-4T*	300	19.54 dia	0.39	0.47	15	0.8	2.2 x 10 ⁻¹²	1500	92	22	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 Typ.	Capacitance pF		Rise time ns L = 900 nm R _L = 50 Ω Typ.	Crosstalk % L = 1064 nm		Package
	mm ²	mm	Sep. mm	Min.	Typ.	Max.	Typ.		V _r = 0V Max.	V _r = 100V Max.		Max.	Typ.	
QD50-4T	50	7.98 dia	0.2	0.39	0.47	2	0.1	7.6 x 10 ⁻¹³	64	6	17	5	1	10
QD100-4T*	100	11.3 dia	0.2	0.39	0.47	4	0.2	1.1 x 10 ⁻¹²	127	9	18	5	1	12
QD320-4T*	320	20.2 dia	0.3	0.39	0.47	6	1.0	2.4 x 10 ⁻¹²	400	26	18	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 Typ.	Capacitance pF		Rise time ns L = 900 nm R _L = 50 Ω Typ.	Package
		Area mm ²	Width mm	Lgth. mm	Sep. mm	Min.	Typ.	Max.	Typ.		V _r = 0V Max.	V _r = 100V Max.		
LD20-4T*	20	3.6	4.0	0.9	0.05	0.39	0.47	0.7	0.06	5.9 x 10 ⁻¹³	20	2.7	22	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 Typ.	Capacitance pF		Rise time ns L = 900 nm R _L = 50 Ω Typ.	Package
		Area mm ²	Width mm	Lgth. mm	Sep. mm	Min.	Typ.	Max.	Typ.		V _r = 0V Max.	V _r = 100V Max.		
MD25-4T*	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	5	17	18
MD100-4T*	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	2.2	32	19

* Supplied with optional guard ring connected.

Note: Recommended operating voltage range 0 to 100 volts, for all Series 4T Detectors.