

# General Purpose Silicon Sensors (Series 5T)



The Centronic **Series 5T** detectors offer high blue sensitivity coupled with high shunt resistance and low dark leakage current. They are particularly suited to low light level applications from 430-900 nm where the highest signal to noise ratio is important. They may be operated photovoltaically or with a reverse bias of up to 12V where lower capacitance is needed. The 5T range provides the most economic solution for all applications where high speed of response above 800 nm is not critical.

## Electrical / Optical Specifications

Characteristics measured at 22°C (±2) ambient, and a reverse bias of 12 volts, unless otherwise stated. Shunt Resistance measured at ± 10mV.

For rise time on Quadrants, Linear and Matrix Arrays take figures for single element diodes having equivalent active area

### Single Elements

Type No.	Active Area		Responsivity A/W $\lambda = 436 \text{ nm}$		Dark Current (nA)		NEP $\text{WHz}^{-1/2}$ $\lambda = 436 \text{ nm}$ Typ.	Capacitance pF		Shunt Resistance Meg. ohms		Risetime ns $\lambda = 820 \text{ nm}$ RL = 50 $\Omega$ Typ.	Package
	mm <sup>2</sup>	mm	Min.	Typ.	Max.	Typ.		Vr=0 V Max.	Vr=12V Max.	Min.	Typ.		
OSD1-5T	1	1.13 dia	0.18	0.21	1	0.2	2.5e-14	35	7	250	1000	7	1
OSD3-5T	3	2.16 x 1.4	0.18	0.21	2	0.5	3.0e-14	80	20	100	700	9	1
OSD5-5T	5	2.52 dia	0.18	0.21	2	0.5	3.3e-14	130	35	100	600	9	3
OSD7.5-5T	7.5	2.75 x 2.75	0.18	0.21	3	1	4.6e-14	180	40	60	300	10	3
OSD15-5T	15	3.8 x 3.8	0.18	0.21	5	1	5.5e-14	390	80	50	200	12	3
OSD35-5T	35	5.9 x 5.9	0.18	0.21	10	2	7.5e-14	950	200	20	100	20	8 / 23
OSD50-5T	50	7.98 dia	0.18	0.21	15	5	1.6e-13	1300	270	5	25	26	9
OSD60-5T	62	7.9 x 7.9	0.18	0.21	25	6	2.3e-13	1800	310	3	12	30	9
OSD100-5T	100	11.3 dia	0.18	0.21	30	8	2.1e-13	2500	520	2	15	45	13
OSD300-5T	300	19.54 dia	0.18	0.21	200	30	3.5e-13	7500	1500	1	5	125	15

### Quadrants (Values given are per element unless otherwise stated)

Type No.	Active Area (Total)			Responsivity A/W $\lambda = 436 \text{ nm}$		Dark Current (nA)		NEP $\text{WHz}^{-1/2}$ $\lambda = 436 \text{ nm}$ Typ.	Capacitance pF		Shunt Resistance Meg. ohms		Crosstalk% $\lambda = 900 \text{ nm}$		Package
	mm <sup>2</sup>	mm	Sep. mm	Min.	Typ.	Max.	Typ.		Vr=0 V Max.	Vr=12V Max.	Min.	Typ.	Max.	Typ.	
QD7-5T	7	2.99 dia	0.2	0.18	0.21	6	2	2.3e-14	50	15	80	1200	5	1	7
QD50-5T	50	7.98 dia	0.2	0.18	0.21	30	3	4.6e-14	330	80	10	300	5	1	10
QD100-5T	100	11.3 dia	0.2	0.15	0.18	50	5	7.0e-14	650	130	5	100	5	1	11

### Linear Arrays (Values given are per element unless otherwise stated)

Type No.	No. of Elements	Array Dimensions				Responsivity A/W $\lambda = 436 \text{ nm}$		Shunt Resistance Megohms		NEP $\text{WHz}^{-1/2}$ $\lambda = 436 \text{ nm}$	Capacitance pF		Dark Current nA		Package
		Area mm <sup>2</sup>	Width mm	Lgth. mm	Sep. mm	Min.	Typ.	Min.	Typ.		Vr=0V Min.	Vr=12V Typ.	Max.	Typ.	
LD2A-5T	2	1.00	2.0	0.5	0.05	0.18	0.21	100	1000	2.5e-14	30	6	2	0.7	4
LD2B-5T	2	2.02	1.422	1.422	0.45	0.18	0.21	50	1000	2.5e-14	60	12	5	1	4
LD2C-5T	2	0.483	1.27	0.38	0.05	0.15	0.18	100	1000	2.9e-14	15	4	2	0.5	2
LD4C-5T	4	0.64	0.8	0.8	0.3	0.15	0.18	40	500	4.0e-14	38	10	10	1	6
LD12A-5T	12	0.25	0.5	0.5	0.05	0.15	0.18	100	2000	2.0e-14	10	3	5	0.5	21
LD16C-5T	16	0.035	0.2	0.175	0.025	0.15	0.18	100	2000	2.0e-14	10	2	5	0.5	20
LD16(1.8)-5T	16	1.8	2.1	0.9	0.1	0.18	0.21	100	1500	2.0e-14	60	11	5	0.5	16
LD16(2.5)-5T	16	2.5	2.5	1	0.5	0.18	0.21	100	1500	2.0e-14	80	14	5	0.5	16
LD20-5T	20	3.60	4.0	0.90	0.05	0.18	0.21	100	1000	2.5e-14	130	20	5	0.5	16
LD20(0.36)-5T	20	0.36	0.6	0.6	0.1	0.18	0.21	100	2000	1.7e-14	15	5	5	0.5	16
LD35-5T	35	4.42	4.6	0.96	0.03	0.18	0.21	40	2000	1.7e-14	130	25	5	0.5	17

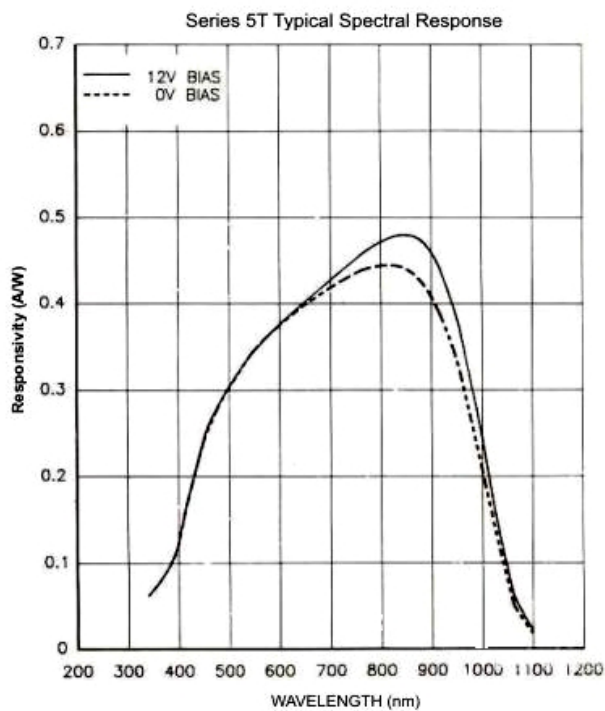
### Matrix Arrays (Values given are per element unless otherwise stated)

MD25-5T	5 x 5	7.99	2.7	2.7	0.1	0.15	0.18	5	200	6.4e-14	240	47	50	5	18
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Note: Recommended operating voltage range 0 to 12 volts, for all Series 5T Detectors.

Highlighted items are Centronic standard products generally available from stock

## Series 5T Spectral Response Graph



## Capacitance versus Bias Voltage

