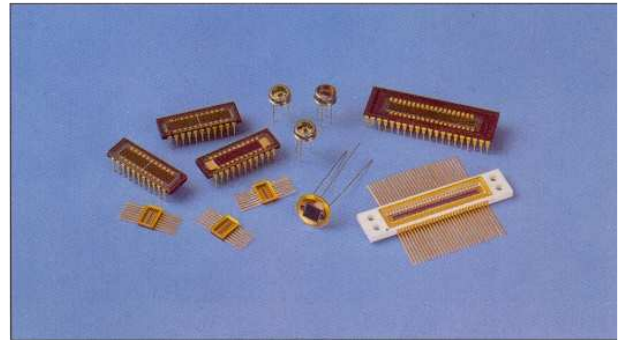


# Silicon Photodetector

# Series 5T

## BLUE SENSITIVE FOR BIASED OR UNBIASED OPERATION

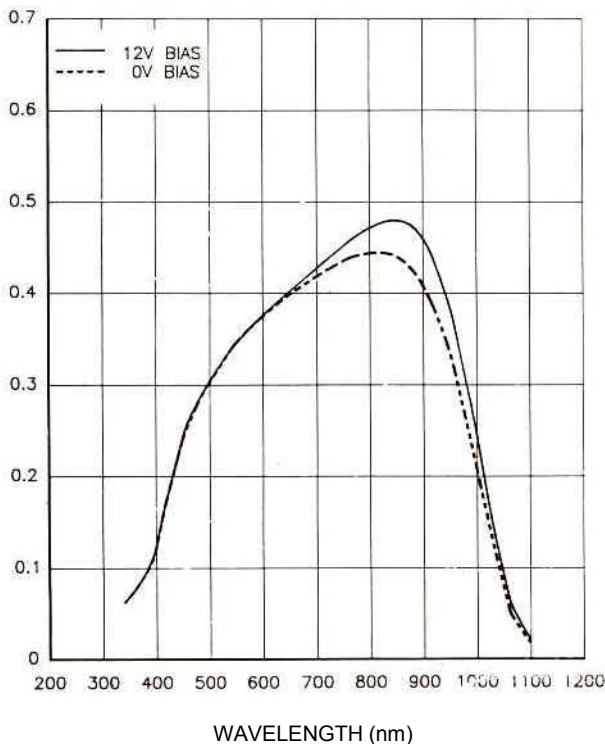
The Centronic Series 5T detectors offer high blue sensitivity coupled with high shunt resistance and low dark leakage current. They are particularly suited to low light level applications from 430-900 nm where the highest signal to noise ratio is important. They may be operated photovoltaically or with 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.



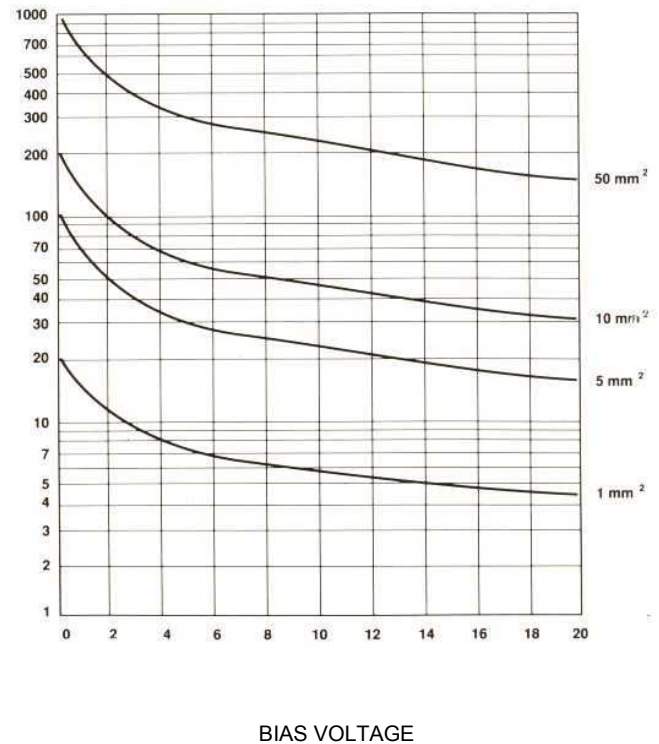
## ABSOLUTE MAXIMUM RATINGS

	Max. Rating
DC Reverse Voltage	15V
Peak Pulse Current (1 $\mu$ s, 1% duty cycle)	200mA
Peak DC Current	10mA
Storage Temperature Range Except for those listed below:	-45°C to + 100°C -25°C to + 80°C
Operating Temperature Range Except for: LD12, LD16, LD20, LD35, MD25, MD100 and MD144-5T	-25°C to + 75°C 0°C to + 75°C
Soldering Temperature for 5 seconds max.	200°C

Series 5T – Typical Spectral Response



Series 5T – 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 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 λ = 436nm		Dark Current (nA)		NEP WHz <sup>-1/2</sup> λ = 436 nm V <sub>r</sub> = 0V Typ.	Capacitance pF		Shunt Resistance Megohms		Risetime ns λ = 820 nm R <sub>L</sub> = 50 Ω Typ.	Package
	mm <sup>2</sup>	mm	Min.	Typ.	Max.	Typ.		V <sub>r</sub> = 0V Max.	V <sub>r</sub> = 12V Max.	Min.	Typ.		
OSD1-5T	1	1.13 dia	0.18	0.21	1	0.2	2.5 x 10 <sup>-14</sup>	35	7	250	1000	7	TO18
OSD3-5T	3	2.16 x 1.4	0.18	0.21	2	0.5	3.0 x 10 <sup>-14</sup>	80	20	100	700	9	TO18
OSD5-5T	5	2.52 dia	0.18	0.21	2	0.5	3.3 x 10 <sup>-14</sup>	130	35	100	600	9	TO5
OSD7.5-5T	7.5	2.75 x 2.75	0.18	0.21	3	1	4.6 x 10 <sup>-14</sup>	180	40	60	300	10	TO5
OSD15-5T	15	3.8 x 3.8	0.18	0.21	5	1	5.5 x 10 <sup>-14</sup>	390	80	50	200	12	TO5
OSD35-5T	35	5.9 x 5.9	0.18	0.21	10	2	7.5 x 10 <sup>-14</sup>	950	200	20	100	20	TO8
OSD50-5T	50	7.98 dia	0.18	0.21	15	5	1.6 x 10 <sup>-13</sup>	1300	270	5	25	26	TO8
OSD60-5T	62	7.9 x 7.9	0.18	0.21	25	6	2.3 x 10 <sup>-13</sup>	1800	310	3	12	30	TO8
OSD100-5T	100	11.3 dia	0.18	0.21	30	8	2.1 x 10 <sup>-13</sup>	2500	520	2	15	45	13
OSD300-5T	300	19.54 dia	0.18	0.21	200	30	3.5 x 10 <sup>-13</sup>	7500	1500	1	5	125	15

### Quadrants

(Values given are per element unless otherwise stated)

Type No.	Active Area (Total)			Responsivity A/W λ = 436 nm		Dark Current nA		NEP WHz <sup>-1/2</sup> λ = 436 nm V <sub>r</sub> = 0V Typ.	Capacitance pF		Shunt Resistance Megohms		Crosstalk% λ = 900 nm		Package
	mm <sup>2</sup>	mm	Sep. mm	Min.	Typ.	Max.	Typ.		V <sub>r</sub> = 0V Max.	V <sub>r</sub> = 12V Max.	Min.	Typ.	Max.	Typ.	
QD7-5T	7	2.99 dia	0.2	0.18	0.21	6	2	2.3 x 10 <sup>-14</sup>	50	15	80	1200	5	1	TO5
QD50-5T	50	7.98 dia	0.2	0.18	0.21	30	3	4.6 x 10 <sup>-14</sup>	330	80	10	300	5	1	10
QD100-5T	100	11.3 dia	0.2	0.15	0.18	50	5	7.0 x 10 <sup>-14</sup>	650	130	5	100	5	1	11

# Silicon Photodetector

# Series 5T

## Linear Arrays

(Values given are per element unless otherwise stated)

Type No.	No. of Elements	Array Dimensions				Responsivity A/W $\lambda = 436 \text{ nm}$ $V_r = 0V$		Shunt Resistance Megohms		NEP $\text{WHz}^{-1/2}$ $\lambda = 436 \text{ nm}$ Typ.	Capacitance pF		Dark Current nA		Package
		Area $\text{mm}^2$	Width mm	Lgth. mm	Sep. mm	Min.	Typ.	Min.	Typ.		$V_r = 0V$ Min.	$V_r = 12V$ Typ.	Max.	Typ.	
LD2A-5T	2	1.00	2.0	0.5	0.05	0.18	0.21	100	1000	$2.5 \times 10^{-14}$	30	6	2	0.7	TO5
LD2B-5T	2	2.02	1.422	1.422	0.45	0.18	0.21	50	1000	$2.5 \times 10^{-14}$	60	12	5	1	TO5
LD2C-5T	2	0.483	1.27	0.38	0.05	0.15	0.18	100	1000	$2.9 \times 10^{-14}$	15	4	2	0.5	TO18
LD4B-5T	4	15.0	3.0	5.0	0.05	0.15	0.18	15	400	$4.5 \times 10^{-14}$	380	80	25	3	16
LD4C-5T	4	0.64	0.8	0.8	0.3	0.15	0.18	40	500	$4.0 \times 10^{-14}$	38	10	10	1	TO5
LD5A-5T	5	0.10	0.125	0.8	0.05	0.15	0.18	100	1000	$2.9 \times 10^{-14}$	4	2	5	0.5	TO5
LD12A-5T	12	0.25	0.5	0.5	0.05	0.15	0.18	100	2000	$2.0 \times 10^{-14}$	10	3	5	0.5	21
LD16C-5T	16	0.035	0.2	0.175	0.025	0.15	0.18	100	2000	$2.0 \times 10^{-14}$	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	$2.0 \times 10^{-14}$	60	11	5	0.5	16
LD16(2.5)-5T	16	2.5	2.5	1	0.5	0.18	0.21	100	1500	$2.0 \times 10^{-14}$	80	14	5	0.5	16
LD20-5T	20	3.60	4.0	0.90	0.05	0.18	0.21	100	1000	$2.5 \times 10^{-14}$	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	$1.7 \times 10^{-14}$	15	5	5	0.5	16
LD35-5T	35	4.42	4.6	0.96	0.03	0.18	0.21	40	2000	$1.7 \times 10^{-14}$	130	25	5	0.5	17

## Matrix Arrays

(Values given are per element unless otherwise stated)

Type No.	No. of Elements	Array Dimensions				Responsivity A/W $\lambda = 436 \text{ nm}$ $V_r = 0V$		Shunt Resistance Megohms		NEP $\text{WHz}^{-1/2}$ $\lambda = 436 \text{ nm}$ Typ.	Capacitance pF		Dark Current nA		Package
		Area $\text{mm}^2$	Width mm	Lgth. mm	Sep. mm	Min.	Typ.	Min.	Typ.		$V_r = 0V$ Min.	$V_r = 12V$ Typ.	Max.	Typ.	
MD25-5T	5 x 5	7.99	2.7	2.7	0.1	0.15	0.18	5	200	$6.4 \times 10^{-14}$	240	47	50	5	18
MD100-5T	10 x 10	1.96	1.4	1.4	0.1	0.15	0.18	1	400	$4.5 \times 10^{-14}$	55	12	200	1	19
MD144-5T	12 x 12	1.96	1.4	1.4	0.1	0.15	0.18	1	400	$4.5 \times 10^{-14}$	55	12	200	1	19

**Note: Recommended operating voltage range 0 to 12 volts, for all Series 5T Detectors**

Highlighted items are Centronic standard products generally available from stock

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