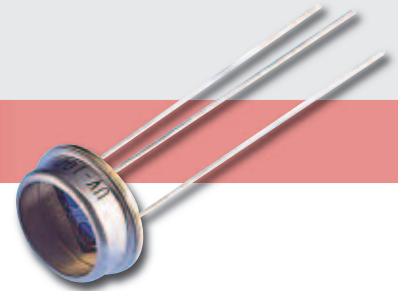


# PIN PHOTO- DIODES FOR INDUSTRIAL APPLICATIONS

## InGaAs and Si PIN Diodes – Quadrant Detectors – UV-Enhanced



### Applications

- Telecom
- Instrumentation
- Photometry
- Laser power monitoring
- Fiber optic test equipment
- High speed switching
- Spot tracking
- Laser range finders
- Missile guidance
- Laser warning system

### Features and Benefits

- High speed
- High responsivity
- Hermetically sealed
- Large area available
- High shunt resistance, low dark current

### Product Description

Silicon PIN photodiodes are available in a wide variety of active area to accommodate a large variety of applications. The PIN structure allows high quantum efficiency and fast response for detection of photon in the 400 nm to 1100 nm range.

The YAG series offers an exceptional 0.4 A/W at 1060 nm by using a thick silicon material. Designed with a guard ring to collect current generated outside of the active area, they are the detectors of choice when the entire chip is illuminated by reducing unwanted carriers responsible for noise. Precise beam positioning can be achieved by using our quadrant detectors. They are designed with 4 pie-shaped quadrant sections from doping process thus reducing to almost zero the “dead” space between each quadrant. Each quadrant is connected to an isolated lead.

The C30741 provide fast response and good quantum efficiency in the spectral range between 300 nm to 1100 nm. Designed for high-speed, high-volume production and cost sensitive applications, these photodiodes are offered in plastic package, either TO style or SMD packages with a visible blocking filter option.

Our UV series are high quality Si PIN photodiode in hermetically sealed TO package designed for the 220 nm to 1100 nm wavelength region with enhanced operation in the UV range. Low noise detection is achieved by operating the UV series in photovoltaic mode (0V bias).

The InGaAs PIN detectors provide high quantum efficiency from 800 nm to 1700 nm. They feature low capacitance for extended bandwidth, high resistance for high sensitivity, high linearity, and uniformity within 2 % across the detector active area.

Product Table

### InGaAs PIN, High Speed, Peak Wavelength at 1550 nm

Unit	Active Diameter µm	Responsivity Peak A/W	Capacitance pF	B <sub>w</sub> GHz	Dark Current nA	Breakdown Voltage V	Operating Voltage V	Package
C30616ECERH	50	0.95	0.35	3.5	<1	100	5	Ceramic carrier
C30617BH	100	0.95	0.8	3.5	<1	100	5	TO-18, ball lens
C30617BFCH	100	0.95	0.8	3.5	<1	100	5	TO-18, FC receptacle
C30617BSCH	100	0.95	0.8	3.5	<1	100	5	TO-18, SC receptacle
C30617BSTH	100	0.95	0.8	3.5	<1	100	5	TO-18 ST receptacle
C30617ECERH	100	0.95	0.6	3.5	<1	100	5	Ceramic carrier
C30618BFCH	350	0.95	4	0.75	1	100	5	TO-18, FC receptacle
C30618GH	350	0.95	4	0.75	1	100	5	TO-18
C30618ECERH	350	0.95	4	0.75	1	100	5	Ceramic carrier
C30637ECERH	75	0.95	0.4	3.5	<1	100	5	Ceramic carrier

## Product Table

## InGaAs PIN, Large Area, Peak Wavelength at 1550 nm

Unit	Active Diameter	Responsivity Peak	Capacitance	Shunt Resistance	B <sub>w</sub>	Dark Current	Breakdown Voltage	Operating Voltage	Package
	mm	A/W	pF	Mega Ohm	GHz	nA	V	V	
C30641EH-TC	1	0.95	40	50	75	5	80	0-5	TO-8, flange, TE-cooled
C30641EH-DTC	1	0.95	40	50	75	5	80	0-5	TO-8, flange, dual TE
C30641GH	1	0.95	40	50	75	5	80	0-5	TO-18
C30642GH	2	0.95	150	25	20	10	50	0-5	TO-5
C30665GH	3	0.95	200	10	3	25	50	0-5	TO-5
C30723GH	5	0.95	950	5	3	-	50	0-5	TO-5
C30619GH	0.5	0.95	8	250	350	1	80	0-10	TO-18

## Product Table

## Silicon PIN

Unit	Active Diameter	Active Area	Responsivity Peak	Peak Wavelength	Capacitance	Rise/Fall Time	Dark Current	Shunt Resistance	Breakdown Voltage	Operating Voltage	Package
	um	mm <sup>2</sup>	A/W	nm	pF	ns	nA	MΩ	V	V	
C30741PH-15S	1.5x1.5	2.25	800	800	11	2	0.05	-	300	10	Plastic T 1-¾ throughole
C30741PFH-15S	1.5x1.5	2.25	800	800	11	2	0.05	-	300	10	T 1-¾ visible blocking
C30807EH	1	0.8	0.6	900	2.5	5	10	-	>100	45	TO-18
C30808EH	2.5	5	0.6	900	6	8	30	-	>100	45	TO-5
C30822EH	5	20	0.6	900	17	10	50	-	>100	45	TO-8
C30809EH	8	50	0.6	900	35	15	70	-	>100	45	TO-8
C30810EH	11	100	0.6	900	70	20	300	-	>100	45	TO-36
C30971EH	0.5	0.2	0.5	830	1.6	0.5	10	-	>200	100	TO-18
FFD-100H	2.5	5.1	0.6	850	8.5	3.5	5	-	>125	15	TO-5
FFD-200H	5.0	20	0.6	850	30	5	10	-	>125	15	3 pin, 0.6 inch dia.
FND-100QH	2.5	5.1	0.64	920	8.5	<1n	10	-	150	100	TO-5
UV-040BQH	1.0	0.81	0.62	900	25	-	-	>500	-	0	TO-5, response down to 200 nm
UV-100BQH	2.5	5.1	0.62	900	150	-	-	>100	-	0	TO-5, response down to 200 nm
UV-215BGH/340	0.0					-	-	-	-	0	TO-5, response down to 250 nm
UV-215BQH	5.5	23.4	0.62	900	700	-	-	>50	-	0	TO-5, response down to 200 nm
UV-245BGH	5	18.5	0.62	900	630	-	-	>75	-	0	TO-5, response down to 250 nm
UV-245BQH	5	18.5	0.62	900	630	-	-	>75	-	0	TO-5, response down to 200 nm
YAG-100AH	2.5	5.1	0.7	1000	2.5	5	<20	-	>200	180	TO-5
YAG-200H	5.0	20	0.7	1000	6	5	<100	-	>200	180	TO-8
YAG-444AH	16.0	200	0.7	1000	35	5	<200	-	>200	180	TO-36
SR10BP		0.65		900	10	10	10		170		SMT
SR10BP-B		0.65		900	10	10	10		170		SMT
SR10DE		0.56 x 0.56			4	150	10		170		SMT
SR10DE-B		6.71			4	150	10		170		SMT
PF10		0.31	0.6	880	25	200	5		170		SMT
CR50DE			0.5	880	2.5	3000	0.5		50		

## Product Table

## Specialty Silicon Detectors

Unit	Description	Active Diameter	Active Area	Capacitance	Rise/Fall Time	Dark Current	Breakdown Voltage min	Responsivity 900 nm	Responsivity 1060 nm	Noise Current	Package
		mm	mm <sup>2</sup>	pF	ns	nA	V	A/W	A/W	pA/sqrt(Hz)	
C30845EH	Quadrant PIN	8	50	8/q	6	70 nA	100	0.6	0.17	0.26/q	TO-8
YAG-444-4AH	Quadrant PIN	11.3	100	9/q	8	<75 nA	100	0.6	0.5	0.2/q	Custom
DTC-140H	Dual wavelength detector Si-Si (Top/Bottom)	3.5	9.9	300/300	-	50/50 MΩ	-	0.6/0	0.25/0.15	0.033/0.133	Custom