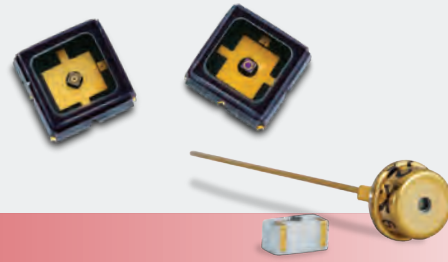


Avalanche Photodiodes

AVALANCHE PHOTODIODES ■

Avalanche Photodiodes
Silicon InGaAs APDs



Avalanche Photodiodes – InGaAs APDs

Applications

- LiDAR / ToF measurements
 - Eye-safe Laser range finding
 - High volume consumer applications
 - Optical time-domain reflectometer (OTDR)
 - Optical communication systems
 - Laser scanning
- Confocal microscope
- Free space communication
- Spectrophotometers
- Fluorescence detection
- DNA sequencer
- Particle sizing

Features and Benefits

- Low noise
- High gain
- High quantum efficiency
- Built-in TE-cooler option
- Various optical input options
- Customization available upon request

Product Description

The C30644, C30645 and C30662 Series APDs are high speed InGaAs/InP avalanche photodiodes. These devices provide large quantum efficiency, (QE), high responsivity and low noise in the spectral range between 1100 nm and 1700 nm, with standard active areas up to 200 μm in diameter. They are optimized for use at a wavelength of 1550 nm, ideally suitable for use in eye-safe laser range finding systems.

These APDs are supplied in a hermetically-sealed TO-18 package, with the chip mounted close to the window to allow easy interfacing with the optical system, or on a ceramic carrier and SMD package. The C30645 and C30662 series APD are offered in the C30659 series of APD receivers with low noise transimpedance amplifier, as well as built-in thermo-electric cooler (the LLAM series). For these modules, please refer to the respective sections in this catalog. Other custom package are also available on request.

Product Table

InGaAs APD

Unit	Active Diameter μm	Capacitance pF	Typical Bw MHz	Dark Current nA	Breakdown Voltage min V	Breakdown Voltage max V	Temperature Coefficient V/ $^{\circ}\text{C}$	Typical Gain	Responsivity 1550 nm A/W	NEP $\text{fW}/\sqrt{\text{Hz}}$	Package
C30644EH	50	0.6	2000	25	45	70	0.14	10	9.3	15	TO-18
C30644ECERH	50	0.6	2000	25	45	70	0.14	10	9.3	15	Ceramic carrier
C30645EH	80	1.25	> 1000	3	45	70	0.14	10	9.3	25	TO-18
C30645EH-1	80	1.25	> 1000	3	45	70	0.14	10	9.3	25	TO-18, Small aperture, Silicon
C30645ECERH	80	1.25	> 1000	3	45	70	0.14	10	9.3	25	Ceramic carrier
C30645L	80	1.25	> 1000	3	45	70	0.14	10	9.3	25	SMD LLC
C30662EH	200	2.5	850	45	45	70	0.14	10	9.3	75	TO-18, Large aperture, Glass
C30662EH-1	200	2.5	850	45	45	70	0.14	10	9.3	75	TO-18, Large aperture, Glass
C30662ECERH	200	2.5	850	45	45	70	0.14	10	9.3	75	Ceramic carrier
C30662ECERH-1	200	2.5	850	45	45	70	0.14	10	9.3	75	Ceramic carrier
C30662EH-3	200	2.5	850	45	45	70	0.14	10	9.3	75	TO-18, Small aperture, Glass
C30662L	200	2.5	850	45	45	70	0.14	10	9.3	75	SMD LLC

NOTE: The "-1" version of the C30662 series have a $V_{\text{br-Vop}}$ of >4V.