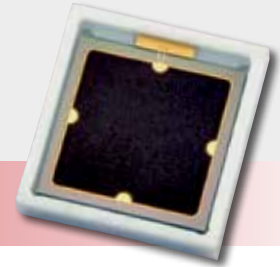


Avalanche Photodiode

For High Energy Radiation Detection Applications, Molecular Imaging



Large Area Si-APDs – UV-Enhanced APDs

Applications

- Nuclear medicine
- Fluorescence detection
- High energy physics
- Medical imaging
- Radiation detection
- Particle physics
- Instrumentation
- Environmental monitoring

Features and Benefits

- High quantum efficiency
- Low dark currents
- Easy coupling to scintillator crystals
- Immunity to electromagnetic fields
- Custom packaging available
- Excellent timing resolution
- RoHS compliant
- Customization available upon request

Product Description

The C30739ECERH Silicon Avalanche Photodiode (APD) is intended for use in a wide variety of broadband low light level applications covering the spectral range from below 400 to over 700 nanometers. It has low noise, low capacitance and high gain. It is designed to have an enhanced short wavelength sensitivity, with quantum efficiency of 60 % at 430 nm.

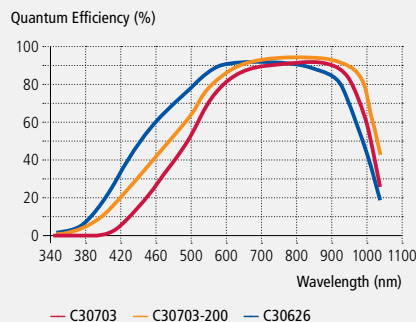
The standard ceramic carrier package allows for easy handling and coupling to scintillating crystals such as LSO and BGO. Combined with the superior short wavelength responsivity, it makes this APD ideal in demanding applications such as Positron Emission Tomography (PET).

The C30626FH and C30703FH series are large area Si APDs in flat pack packages for either direct detection or easy coupling to scintillator crystals.

The C30626 uses a standard reach through structure and has peak detection at about 900 nm. The C30703 is enhanced for blue wavelength response and has peak quantum efficiency at ~ 530 nm. These APDs are packaged in a square flat pack with or without windows or on ceramics. The no-window devices can detect direct radiation of X-rays and electrons at the energies listed, and the windowed packages are best for easy scintillator coupling.

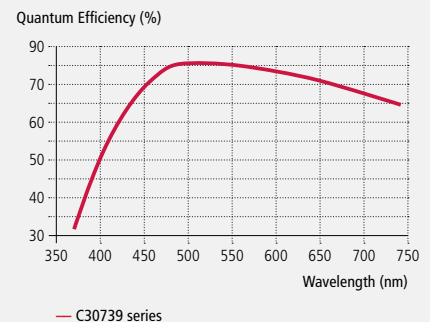
Graph 1

Quantum Efficiency vs. Wavelength



Graph 2

Quantum Efficiency vs. Wavelength



Product Table

Large Area Si-APDs – UV-Enhanced APDs

| Part Number | Photo Sensitive Diameter | Responsivity | Dark Current | Spectral Noise Current | Capacitance @ 100 KHz | Response Time | NEP | Vop Range |
|----------------------|--------------------------|--------------|--------------|------------------------|-----------------------|---------------|-------------|-----------|
| Unit | mm | A/W | nA | pA/√Hz | pF | ns | fW/√Hz | V |
| C30626FH | 5 x 5 | 22 (@900 nm) | 250 | 0.5 | 30 | 5 | 23(@900 nm) | 275 - 425 |
| C30703FH | 10 x 10 | 16 (@530 nm) | 250 | 0.5 | 100 | 5 | 40(@530 nm) | 275 - 425 |
| C30703FH-200 | 10 x 10 | 16 (@530 nm) | 250 | 0.7 | 60 | 5 | 40(@530 nm) | 275 - 425 |
| C30739ECERH | 5.6 x 5.6 | 20 (@430 nm) | 10 | 1.4 | 60 | 2 | - | 275 - 425 |
| C30739ECERH-2 | 5.6 x 5.6 | 52(@430 nm) | 10 | 2 | 60 | 2 | - | 275 - 425 |