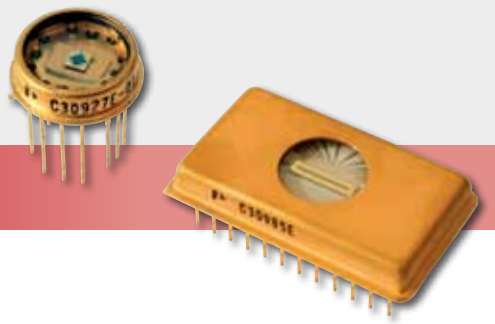
AVALANCHE PHOTODIODES FOR ANALYTICAL APPLICATIONS



Avalanche Photodiodes – Si APD Arrays

Applications

- Spectroscopy
- Particle detection
- Spot tracking and alignment systems
- Adaptive optics
- Lidar

Features and Benefits

- High quantum efficiency
- Hermetically sealed packages
- Monolithic chip with minimal dead space between elements
- Specific tailored wavelength response
- RoHS compliant

Product Description

C30927 series of quadrant Si Avalanche Photodiode and the C30985E multi-element APD array utilize the double-diffused "reach-through"structure. This structure provides ultra high sensitivity at 400-1000 nm.

The C30927 quadrant structure has a common avalanche junction, with separation of the quadrants achieved by segmentation of the light entry p+ surface opposite the junction. With this design, there is no dead space between the elements and therefore no loss of response at boresight.

The C30927EH-01, -02 and -03 are optimized for use at wavelengths of 1060, 900, and 800 nm respectively. Each device type will provide high responsivity and excellent performance when operated within about 50 nm of the specified wavelength.

The C30985E is a 25 element monolithic linear APD array having a high inter-electrode resistance with a 75 µm dead space between the elements. Packages have a common ground and bias with a separate lead for each element output.

Product Table

Avalanche Photodiodes – Si APD Arrays

Part Number	Number of Elements	Photo Sensitive Diameter	Responsivity	Dark Current per Element	Spectral Noise Current	Capacitance @100 KHz	Response Time	NEP	NEP
Unit	mm	mm	A/W	nA	pA/√Hz	pF	ns	fW/√Hz)	V
C30927EH-01	4	1.5	15(@ 1060 nm)	25	0.5	1	3	33(@ 1060 nm)	275 - 425
C30927EH-02	4	1.5	62(@ 900 nm)	25	0.5	1	3	16(@ 900 nm)	275 - 425
C30927EH-03	4	1.5	55(@ 800 nm)	25	0.5	1	3	9(@ 800 nm)	275 - 425
C30985E	25	0.3	31(@ 900 nm)	1	0.1	0.5	2	3(@ 900 nm)	250 - 425

Figure 1

Package Drawing – C30927 Series

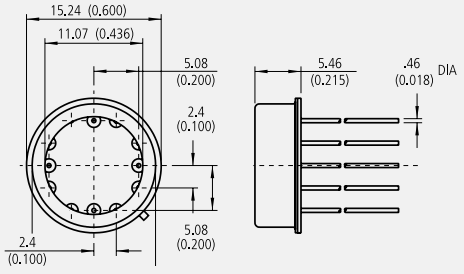


Figure 2

Package Drawing – C30985E