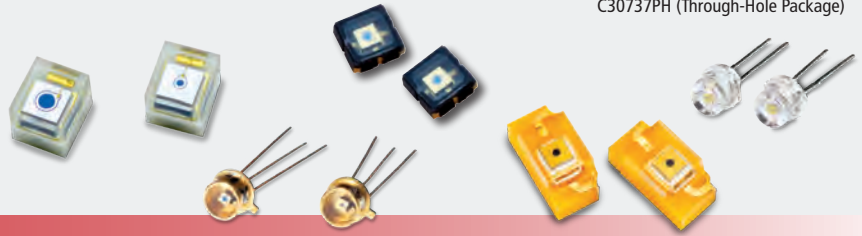


Avalanche Photodiodes

AVALANCHE PHOTODIODES ■

From Left to Right: C30737MH (Compact, top-looking SMD)
C30737EH (Through-Hole Package)
C30737CH (Top/side-looking SMD)
C30737LH (Top-looking SMD)
C30737PH (Through-Hole Package)



C30737 High Speed, Low Voltage APD – C30724 Low Temperature Coefficient APD

Applications

- LiDAR
- Laser range finding
- Optical communication
- Analytical instrumentation
- 3D Laser scanning
- Communication Systems
- Gesture Recognition

Features and Benefits

- Optimized versions for peak responsivity at 900 nm or 800 nm for high bandwidth operation
- Standard versions with 230 μm 500 μm active diameter
- Various package types: hermetic TO, plastic TO, SMD top-and side-looking
- High gain at low bias voltage
- Low breakdown voltage
- Fast response, $t_R \sim 300\text{ps}$
- Low noise, in $\sim 0.1\text{pA}/\sqrt{\text{Hz}}$
- RoHS compliant
- Customization including arrays available upon request

Product Description

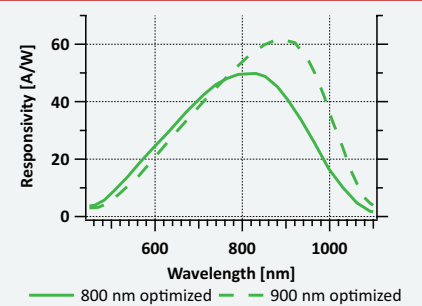
The Excelitas C30737 series silicon APDs provide high responsivity between 500 nm and 1100 nm as well as extremely fast rise times at all wavelengths, with a frequency response above 1 GHz for some versions. The C30724, as a low gain APD, can be operated at a fixed voltage without the need for temperature compensation.

Standard versions of the C30737 are available in two active area sizes: 230 μm and 500 μm diameter. They are offered in the traditional hermetic TO housing ("EH"), in cost-effective plastic through-hole T-1 $\frac{3}{4}$ (TO-like, "PH") packages, in leadless ceramic carrier (LCC, "LH") top-looking package and laminated leadless ceramic (LLC, "CH") side-looking package and in a compact SMD "top-looking" leadless package (C30737MH). All listed varieties are ideally suited for high-volume, cost efficient applications.

Customization of these APDs is offered to meet your design challenges. Operating voltage selection and binning or specific wavelength filtering options are among many of the application-specific solutions available.

Graph 1

Spectral Responsivity Characteristics



Product Table

C30737 Epitaxial Silicon APD – C30724 Low-Gain APD

Part Number	Optical Bandpass Filter	Active Area Diameter μm	Peak Responsivity	Breakdown Voltage Range	Temp. Coefficient	Dark Current	Dark Noise	Capacitance	Rise / Fall time	Responsivity @ M=100	NEP
	Peak nm		typ nm	V	typ $^{\circ}\text{C}$	typ nA	typ pA/ $\sqrt{\text{Hz}}$	typ pF	typ ns	typ A/W	typ fW/ $\sqrt{\text{Hz}}$
C30737XX-230-80	--	230	800	120 ... 210	0.5	0.05	0.1	1	0.3	50	2.00
C30737XX-230-90	--	230	900	180 ... 260	1.3	0.05	0.1	0.6	0.9	60	1.67
C30737XX-500-80	--	500	800	120 ... 210	0.5	0.1	0.1	2	0.3	50	2.00
C30737XX-500-90	--	500	900	180 ... 260	1.3	0.1	0.1	1	0.9	60	1.67
C30737LH-230-81	635	230	635	120 ... 210	0.5	0.05	0.1	1	0.3	35	2.86
C30737LH-230-83	650	230	650	120 ... 210	0.5	0.05	0.1	1	0.3	35	2.86
C30737LH-230-92	905	230	905	180 ... 260	1.3	0.05	0.1	0.6	0.9	60	1.67
C30737EH-230-92	905	230	905	180 ... 260	1.3	0.05	0.1	0.6	0.9	60	1.67
C30737LH-500-81	635	500	635	120 ... 210	0.5	0.1	0.1	2	0.3	35	2.86
C30737LH-500-83	650	500	650	120 ... 210	0.5	0.1	0.1	2	0.3	35	2.86
C30737LH-500-92	905	500	905	180 ... 260	1.3	0.1	0.1	1	0.9	60	1.67
C30737EH-500-92	905	500	905	180 ... 260	1.3	0.1	0.1	1	0.9	60	1.67

Electrical Characteristics at $T_{\text{Ambient}} = 22^{\circ}\text{C}$; at operating voltage, V_{op}