

# High-Speed Silicon PIN Photodiodes C30741 Series



## Overview

Excelitas' C30741 series of N-type silicon p-i-n photodiodes provide fast response and high quantum efficiency in the spectral range of 400 to 1100 nm. The wavelength of maximum sensitivity is @ 800 nm.

These epitaxial-structure devices are optimized for high-speed, high volume and low-cost applications. Standard size is 1.5 x 1.5 mm and custom sizes can be accommodated depending on volume requirements.

Available in plastic packages that are either T1 ¼ through-hole or gull wing surface mount types, these detectors come in clear or ambient light blocking versions.

As different applications have different performance requirements, Excelitas offers a wide range of customization options for the C30741 series of photodiodes to meet your specific design challenges.

Detector size and package types are among many of the application-specific options available.

## Features and Benefits

- High speed
- High responsivity @ 800 nm
- Low bias voltage
- Low cost in high volume applications
- RoHS-compliant

## Applications

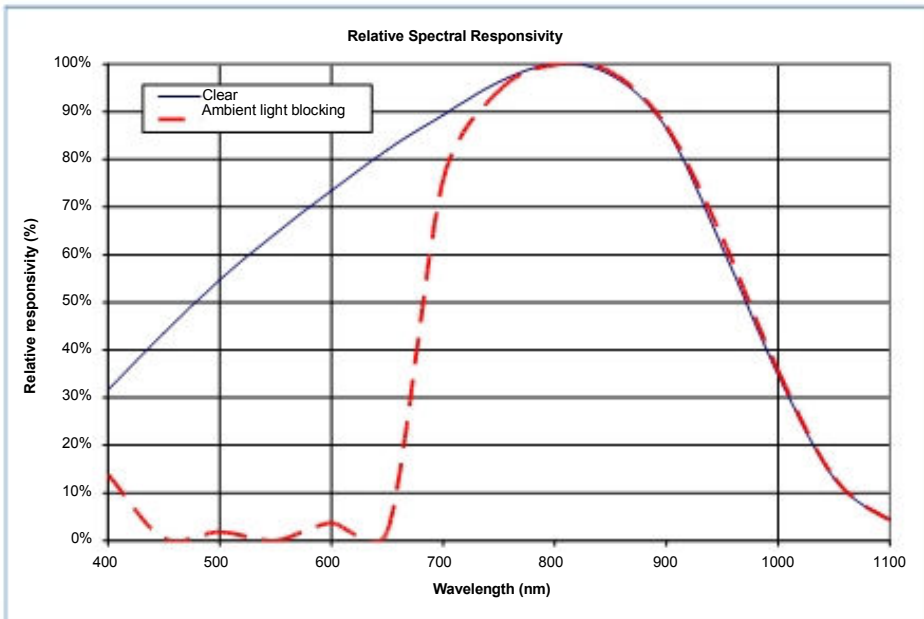
- Range finding
- Instrumentation
- Data transmission
- High speed switching

**Table 1: Mechanical and Optical Characteristics**

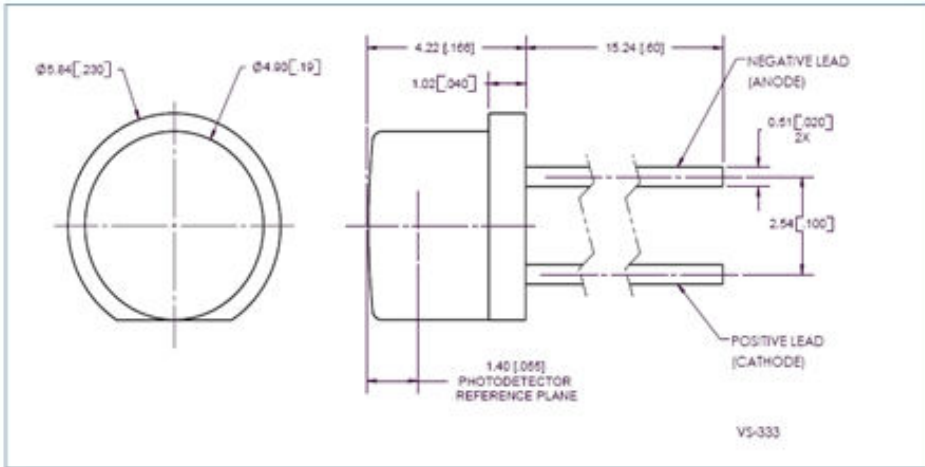
Part number	Optical Characteristics of Package	Package type	Shape/Useful Active Area
C30741PH-15S	Clear	T1 ¼	Square 1.5 mm x 1.5 mm
C30741PFH-15S	Ambient light blocking		
C30741GH-15S	Clear	Gull wing	
C30741GFH-15S	Ambient light blocking		

**Table 2: Typical Electrical Characteristics at T<sub>A</sub> = 22 °C, @ V<sub>op</sub> typical**

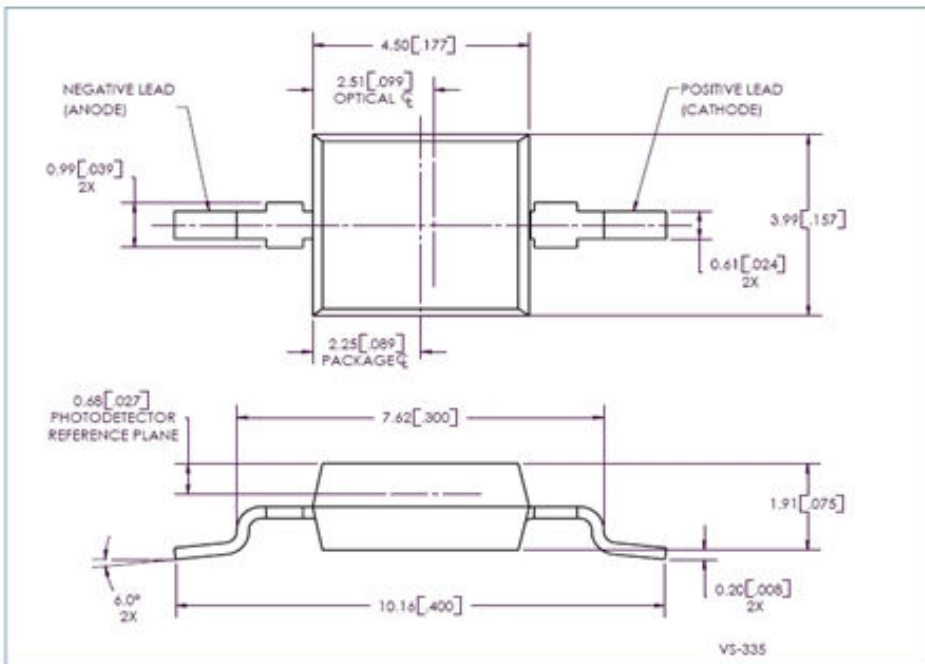
Parameter	C30741PH/GH-15S			C30741PFH/GFH-15S			Units
	Min	Typ	Max	Min	Typ	Max	
Spectral response range	400		1100	650		1100	nm
Operating voltage (V <sub>op</sub> )	-	10	-	-	10	-	V
Breakdown voltage (V <sub>br</sub> )	-	300	-	-	300	-	V
Responsivity @ 800 nm	-	0.47	-	-	0.47	-	A/W
Dark current (I <sub>d</sub> )	-	0.05	0.2	-	0.05	0.2	nA
Spectral noise current (10 KHz, 1.0 Hz)	-	0.02	0.05	-	0.02	0.05	pA/√Hz
Capacitance @ V <sub>OP</sub>	-	11	-	-	11	-	pF
Rise / fall time (10%-90%)	-	-	2	-	-	2	ns
Maximum forward current	-	-	10	-	-	10	mA
Storage temperature	-40		+100	-40		+100	°C
Operating temperature	-20		+60	-20		+60	°C



**Figure 1**  
Relative responsivity vs. wavelength.



**Figure 2**  
T 1 ¼ through-hole package  
dimension, in mm (inches).



**Figure 3**  
Gull-wing package dimension, in  
mm (inches).

**Table 3: Ordering Guide**

<u>C30741</u>	<u>X</u>	<u>ff</u>	<u>H</u>	-	<u>ddd</u>	-	<u>W</u>
							Peak sensitivity wavelength <b>8</b> – 800nm
							Active area dimension <b>15S</b> – 1.5mm x 1.5mm
							RoHS compliance <b>H</b> – RoHS Compliant
							Filtering option <b>F</b> – visible blocking Blank – Clear plastic
							Package type <b>P</b> – Plastic T 1¼ flat end through-hole <b>G</b> – Plastic Gull Wing surface mount

**Example 1: C30741PFH-15S-8**

Si EPI PIN photodiode in Plastic T 1¼ flat end through hole package, visible blocking filter plastic, RoHS compliant, with 1.5 mm x 1.5mm active area, with peak sensitive wavelength of 800nm

**Example 2: C30741GH-15S-8**

Si EPI PIN photodiode in Plastic gull wing package, clear plastic, RoHS compliant, with 1.5 mm x 1.5mm active area, with peak sensitive wavelength of 800nm

### RoHS Compliance

This series of photodiodes is designed and built to be fully compliant with the European Union Directive 2002/95/EEC - Restriction of the use of certain Hazardous Substances in Electrical and Electronic equipment.



### Warranty

A standard 12-month warranty following shipment applies.

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