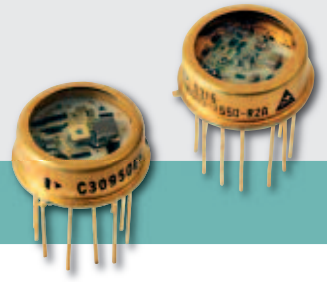
PIN AND APD RECEIVER MODULES
FOR ANALYTICAL AND INDUSTRIAL APPLICATIONS



Si PIN and APD Modules – InGaAs APD Modules

Applications

- Laser range finder
- Confocal microscopy
- Video scanning imager
- High speed analytical instrumentation
- Free space communication
- UV light sensing
- Distributed temperature sensing

Features and Benefits

- Ultra low noise
- High speed
- High transimpedance gain

Product Description

These modules comprise of a photodetector (PIN or APD) and a transimpedance amplifier in the same hermetically sealed package. Having both amplifier and photodetector in the same package allows low noise pickup from the surrounding environment and reduces parasitic capacitances from interconnect allowing lower noise operation.

The hybrid amplifier C30659 series includes an APD connected to a low noise transimpedance amplifier. 4 models are offered with Silicon APD and 2 models with InGaAs APD. Standard bandwidth of 50 MHz and 200 MHz can accommodate a wide range of applications. Two C30659 models are offered with the APD mounted on a Thermo-electric cooler (the LLAM series) to help improving noise or to keep the APD at constant temperature regardless of the ambient temperature.

The C30659 can be customized to meet application specific requirements by using one of the PerkinElmer rear entry APDs, by choosing a custom bandwidth or by qualifying it to your environmental conditions. Pigtailed versions are also available in a 14 pins DIL package allowing nearly 100 % coupling efficiency.

The C30950EH offers a low cost alternative to the C30659. The amplifier is designed to neutralize the input capacitance of a unity voltage gain amplifier. The C30919E uses the same architecture of the C30950EH with the addition of a high voltage temperature compensation circuit which maintain module responsivity constant over a wide temperature range.

Two HUV modules are offered with a PIN detector for low frequency high gain application, covering a broad spectrum range from the UV to the near IR.

All optical receiver products can be qualified to meet the most demanding environmental specification as described in MIL-PRF-38534.

Product Table

Si PIN and APD Modules – InGaAs APD Modules

	Detector	Active Area	Bandwidth	Responsivity, 830 nm	Responsivity, 900 nm	Responsivity, 1060 nm	NEP	Output Voltage Swing, 50 Ohm	Package
Unit		mm^2	MHz	kV/W	kV/W	kV/W	$fW/\sqrt{Hz}$	V	
C30659-900-R5BH	C30902	0.5	200	460	400	-	35	0.9	TO-8
C30659-900-R8AH	C30817	0.8	50	2700	3000	-	14	0.9	TO-8
C30659-1060-R8BH	C30954	0.8	200	-	370	200	55	0.9	TO-8
C30659-1060-3AH	C30956	3	50	-	450	280	55	0.9	TO-8
C30659-1550-R08BH	C30645	80 µm	200	-	90 @ 1550 nm	-	220	0.9	TO-8
C30659-1550-R2AH	C30645	200 µm	50	-	340 @ 1550 nm	-	130	0.9	TO-8
C30919E	C30817	0.8	40	-	1000	250	20	0.7	TO, 1 in
C30950EH	C30817	0.8	50	520	560	140	27	0.7	TO-8
LLAM-1550-R2AH	C30662	0.2	50	-	340 @ 1550 nm	-	130	0.9	TO-8 flange
LLAM-1060-R8BH	C30954	0.8	200	-	370	200	55	0.9	TO-8 flange
HUV-1100BGH	UV-100	2.5	1 kHz	-	130 MV/W	-	30	5 min	Custom
HUV-2000BH	UV-215	5.4	1 kHz	-	130 MV/W	-	70	5 min	Custom