Product Data

IPL10531

UV Integrated Photodiode Amplifiers

IPL 10531 Integrated Photodiode Amplifiers are a family of light-sensitive detectors with an enhanced response in the Blue / UV spectrum, providing a voltage output proportional to the incident light level. The device will operate from single or dual rail power sources, allowing simple interfacing with logic circuits or voltage comparators.

IPL UV Integrated Photodiode Amplifiers consist of blue / UV enhanced silicon photodiodes close-coupled to amplifiers. Theses are mounted on ceramic substrates and hermetically sealed within TO5 type metal packages to give exceptional rejection of electrical noise in arduous environments. This family provides various gain / bandwidth options to suit a wide range of applications.

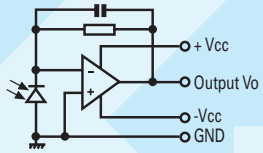
Applications

The IPL 10531 range of UV Photodiode Amplifiers provide positive output voltage for increased light levels. These devices are especially suited to low light level applications, or those where high sensitivity or high interference rejection is required.

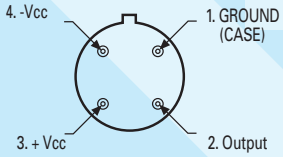
Amplifier Options

Standard feedback configurations are available to provide high sensitivity and high speed in various combinations. Undercompensated versions are available for sensitive pulse detection. Where feasible, IPL will manufacture to custom requirements.

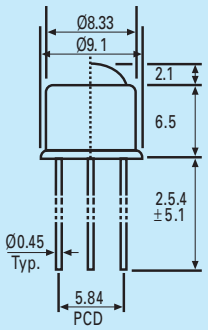
Basic Circuit



Pinout



Dimensions (mm)

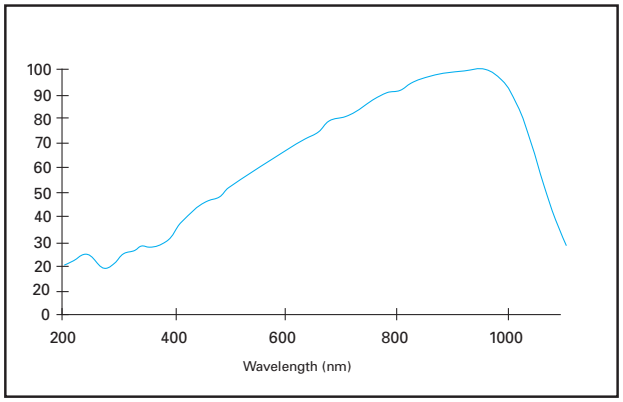


Product Data

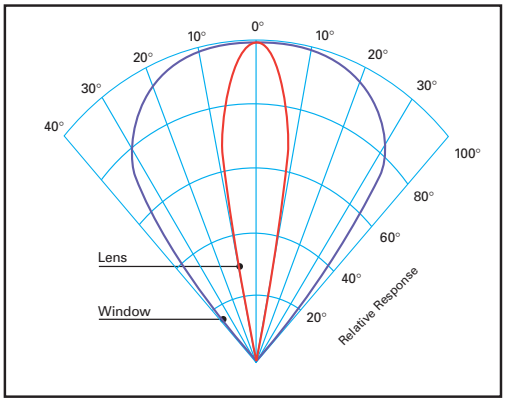
Typical Characteristics @ 25˚C

PARAMETER		UNITS	10531 AAV (with lens)	10531 AAU (flat window)	10531 CAV (with lens)	1053 CAU (flat window)	10531 DAV (with lens)	10531 DAU (flat window)	10531 EAV (with lens)	10531 EAU (flat window)
DC Supply Voltage (Dual Rail)		V	±2 to ±18	±2 to ±18	±2 to ±18	±2 to ±18	±2 to ±18	±2 to ±18	±2 to ±18	±2 to ±18
DC Supply Voltage (Single Rail)		V	+4 to +36	+4 to +36	+4 to +36	+4 to +36	+4 to +36	+4 to +36	+4 to +36	+4 to +36
Quiescent Current mA		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Dissipation (up to 55°C) above 55°C derate linearly 6.67 mW/°C		mW	630	630	630	630	630	630	630	630
Dark Level Noise (RMS)		mV	0.5	0.5	0.5	0.5	0.5	0.5	1.5	1.5
Detector Output Offset (MAX)		mV	±5	±5	±5	±5	±6	±6	±7	±7
Detector Output Voltage Vo (LED - Wavelength 430nm)		$V\mu W^{-1} mm^{-2}$	2.8	0.28	5	0.5	6.5	0.65	67	6.7
Detector Output Voltage Vo (LED - Wavelength 880nm)		$V\mu W^{-1} mm^{-2}$	7	0.7	13.5	1.35	17	1.7	175	17.5
Detector Frequency Response (-3db)		KHz	170	170	120	120	85	85	37	37
Detector Output	Sink	mA	10	10	10	10	10	10	10	10
Current	Source	mA	1	1	1	1	1	1	1	1
Short Circuit Output Duration		s	∞	∞	∞	∞	∞	∞	∞	∞
Temperature	Operating	°C	-20 to +80	-20 to +80	-20 to +80	-20 to +80	-20 to +80	-20 to +80	-20 to +80	-20 to +80
Range	Storage	°C	-30 to +100	-30 to +100	-30 to +100	-30 to +100	-30 to +100	-30 to +100	-30 to +100	-30 to +100
Step Response	Rise Time	µS	2.5	2.5	3.5	3.5	5.5	5.5	9.0	9.0
10% to 90%	Fall Time	µS	2.0	2.0	2.5	2.5	4.0	4.0	8.0	8.0
Saturation @ Peak wavelength		V	Vcc -2	Vcc -2	Vcc -2	Vcc -2	Vcc -2	Vcc –2	Vcc -2	Vcc -2
Photodiode Active Area		(mm^2)	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2

Silicon Relative Spectral Response



Polar Response



Integrated Photomatrix Limited
Paceycombe Way, Poundbury, Dorchester DT1 3SY UK
Tel: **+44 (0) 1305 263673** Fax: **+44 (0) 1305 263679**
E-mail: **sales@ipl-uk.com** Website: **http://www.ipl-uk.com**

Integrated Photomatrix Inc.
4282 Reynolds Drive, Hilliard Ohio 43026, USA
Tel: **+614 771 2775** Fax: **+614 529 7242**
E-mail: **ipi@photoinc.com** Website **http://www.photoinc.com**