

# General Semiconductor Industries Ltd

## GSI10530 Series of Hybrid Detectors

The GSI10530 series is a range of integrated photodiode amplifiers incorporating a 1.75mm<sup>2</sup> silicon PIN photodiode, operational amplifier and transimpedance circuitry. The devices provide a voltage output proportional to incident light. Made exclusively for General Semiconductor Industries Ltd.

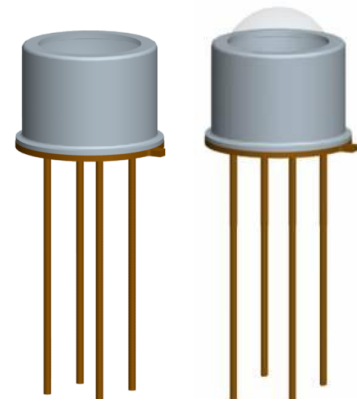
### Features

Incorporation of the photodiode and amplifier into a welded metal can minimises noise pickup, leakage current errors and stray capacitance normally associated with discrete designs. Gain and bandwidth options are available to suit a wide range of applications and the devices can be operated from single or dual rail supplies. Lens or Flat window can versions are available to suit the application, as well as optical filters to minimise unwanted signals.

### Applications

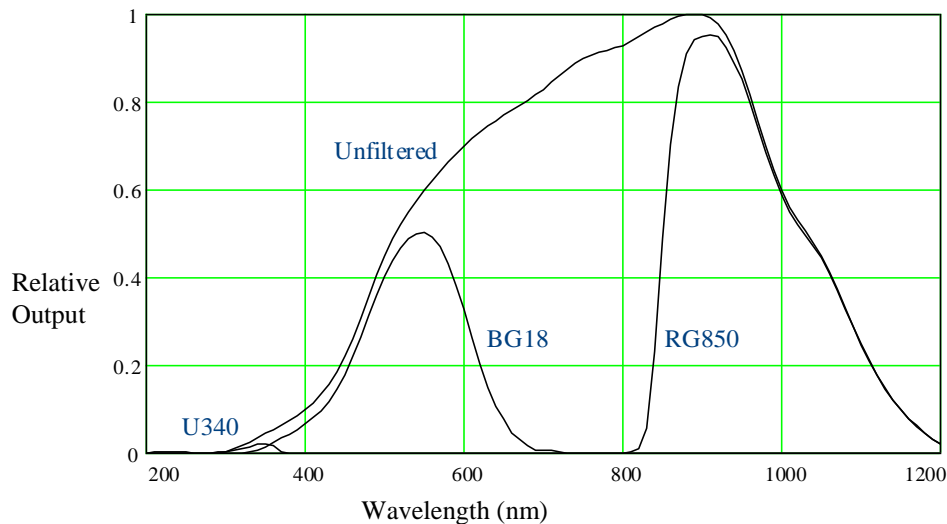
These devices are especially suited to low-light level or applications where high sensitivity is required:

- Medical instruments
- Document verification
- Laboratory instrumentation
- Position and proximity detectors
- Pollution/environmental monitoring
- Smoke/Gas detectors
- Complements GSI10630 range of Self-Monitoring Emitters



### Spectral Response

Custom filters available on request



General Semiconductor Industries Ltd, UNIT 3, Nine Mile Water Business Park,  
Stockbridge, Hampshire SO20 8DR

Document No: Preliminary

Tel (+44) 01794 301527

Fax (+44) 01794 301702

Email [sales@gsi.uk.com](mailto:sales@gsi.uk.com) [www.gsi.uk.com](http://www.gsi.uk.com)

# General Semiconductor Industries Ltd

## GSI10530 Series of Hybrid Detectors

### Typical Characteristics @22°C

Detectors/Application		Units	General Purpose		High Gain		Pulse		High Speed
			GSI10530DAW	GSI10530DAL	GSI10530EAW	GSI10530EAL	GSI10530CAL	GSI10530CAL	GSI10530HAL
<b>Parameter</b>		<b>Units</b>							
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
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
Quiescent Current		mA	4	4	4	4	4	4	4
Dark Level Noise	Typical	mV	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
	Maximum	mV	5	5	5	5	5	5	5
Amplifier Output Offset	Typical	mV	<5	<5	<5	<5	<5	<5	<5
	Maximum	mV	10	10	10	10	10	10	10
Frequency Response (-3dB)		KHz	10	10	35	35	65	65	90
Transimpedance Gain		MΩ	10	10	20	20	8.2	8.2	1
Optical Gain (approx.)		n/a	1	10	1	10	1	10	10
Detector Output Current	Sink	mA	10	10	10	10	10	10	10
	Source	mA	1	1	1	1	1	1	1
Temperature Limits	Operating	°C	-20 to +80	-20 to +80	-20 to +80	-20 to +80	-20 to +80	-20 to +80	-20 to +80
	Storage	°C	-30 to +100	-30 to +100	-30 to +100	-30 to +100	-30 to +100	-30 to +100	-30 to +100
Photodiode Active Area		mm <sup>2</sup>	1.75	1.75	1.75	1.75	1.75	1.75	1.75
Window / Lens		n/a	Window	Lens	Window	Lens	Window	Lens	Lens

General Semiconductor Industries Ltd, UNIT 3, Nine Mile Water Business Park,  
Stockbridge, Hampshire SO20 8DR

Document No: Preliminary

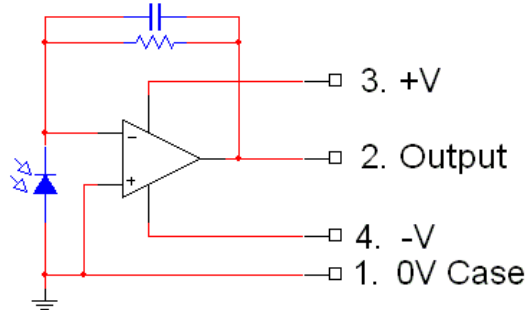
Tel (+44) 01794 301527  
Fax (+44) 01794 301702  
Email [sales@gsi.uk.com](mailto:sales@gsi.uk.com) www.gsi.uk.com

# General Semiconductor Industries Ltd

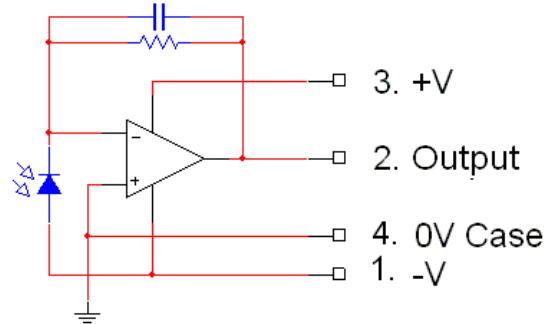
## GSI10530 Series of Hybrid Detectors

### Circuit Diagram

All part numbers *except* GSI10530HAL:

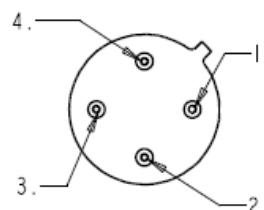
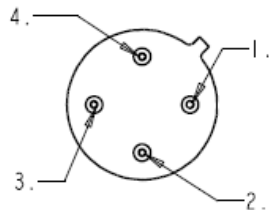
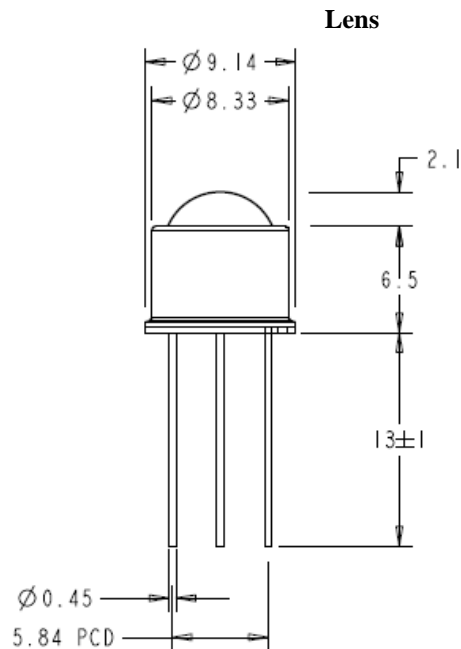
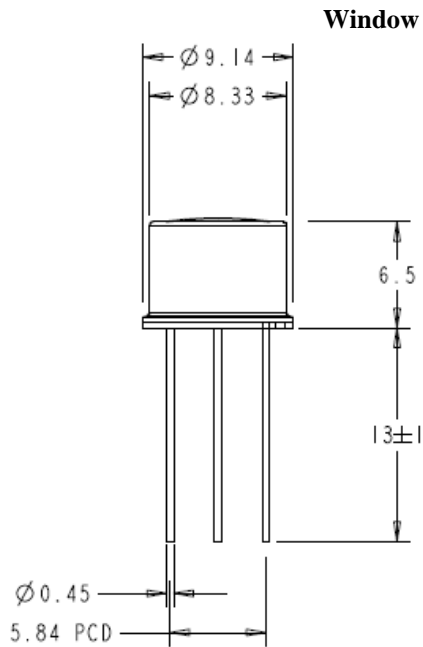


GSI10530HAL:



### Mechanical

All dimensions in mm.



Bottom View

General Semiconductor Industries Ltd, UNIT 3, Nine Mile Water Business Park,  
Stockbridge, Hampshire SO20 8DR

Document No: Preliminary

Tel (+44) 01794 301527

Fax (+44) 01794 301702

Email [sales@gsi.uk.com](mailto:sales@gsi.uk.com)

[www.gsi.uk.com](http://www.gsi.uk.com)