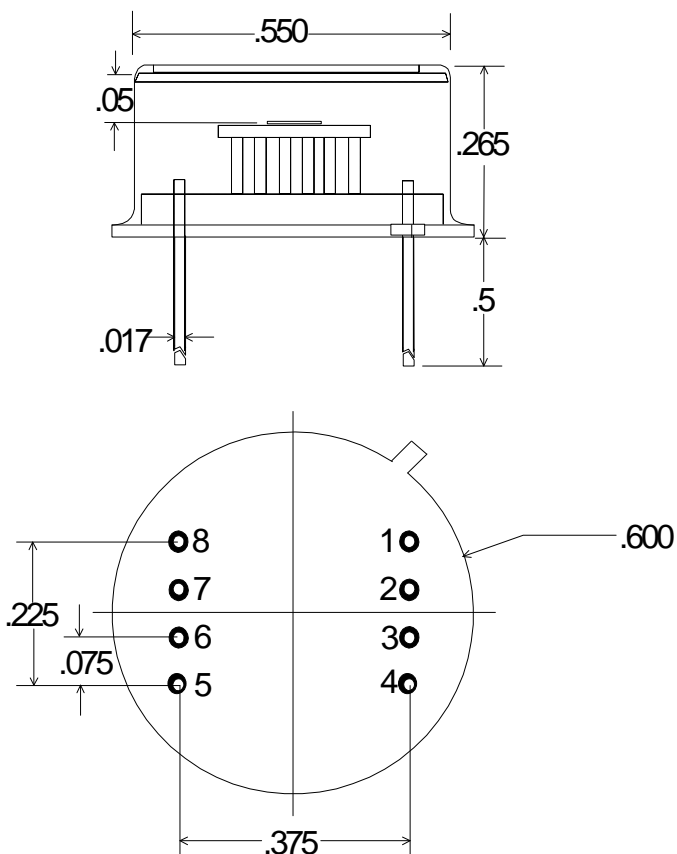


## TO - STYLE PHOTODIODE / AMPLIFIER


**Part no:**
**G - 030 - E8**
**PIN OUT**

- 1 = Offset Adj
- 2 = Inv In / Photodiode Cathode
- 3 = N-Inv In / Photodiode Anode
- 4 = -V
- 5 = Gain Select
- 6 = Output
- 7 = +V
- 8 = Offset Adj

**Note:** Dimensions in Inches

**Operating Note** This unit is a high performance photodiode/transimpedance amplifier unit. The output voltage is equal to the optical signal power multiplied by the photodiode responsivity in A/W and the feedback resistance in ohms. The unit is DC-coupled and should be shielded from stray or room lights to avoid saturation of the amplifier.

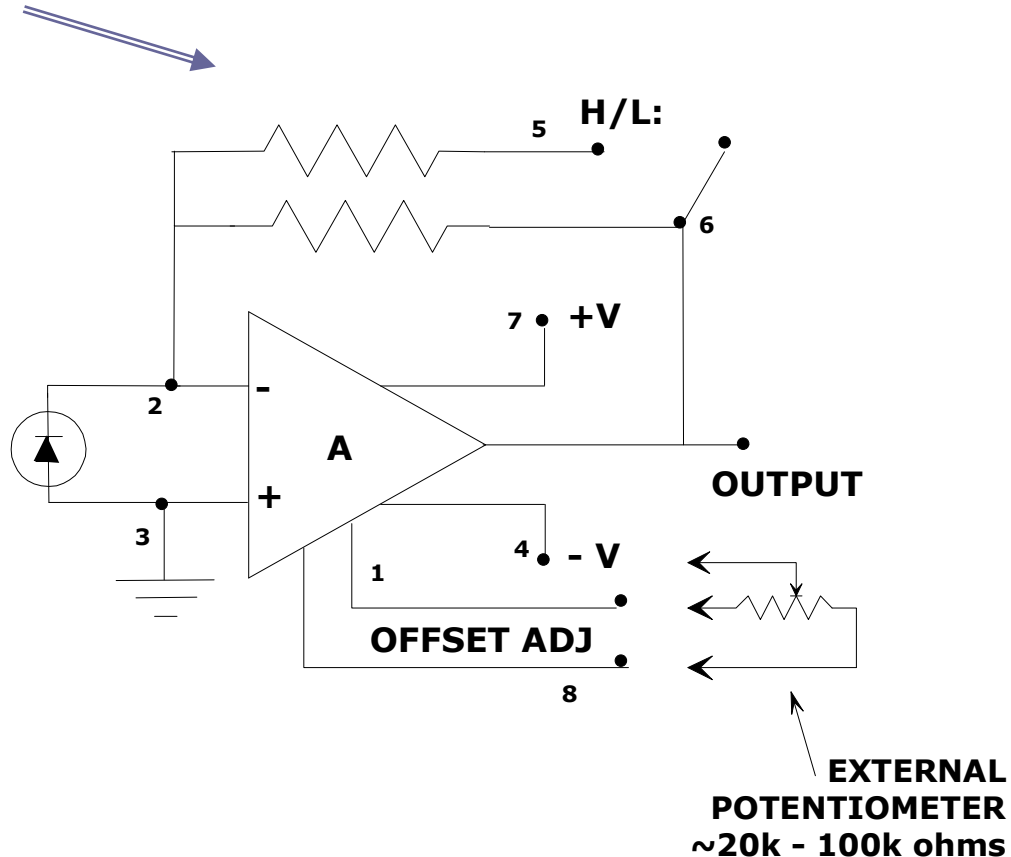
### SPECIFICATIONS [ T=24 °C ]

|  |                         |
|--|-------------------------|
| Active Area  | 3 mm dia                |
| Operating Wavelength Range, $\mu\text{m}$              | 0.8 - 1.8               |
| Photodiode Shunt Resistance (ohms)                     | 40 k                    |
| Photodiode Shunt Capacitance (pF)                      | 13000 nom               |
| Responsivity @ 1.5 $\mu\text{m}$ (V/W)                 | $1 \times 10^6 / 10^5$  |
| NEP (100Hz, 1.5 $\mu\text{m}$ ) (W/Hz <sup>1/2</sup> ) | $< 7.5 \times 10^{-13}$ |
| Bandwidth (Hz)   | DC - 2 kHz              |

*RoHS Compliant*

## TO - STYLE PHOTODIODE / AMPLIFIER

### PHOTODIODE CIRCUIT [Simplified Schematic]



### OPERATING THE E8 PHOTODIODE/AMPLIFIER

**POWER SUPPLY:** A bipolar supply is required, +, - 5VDC to +, - 15VDC, 20mA. The power supply pins should be bypassed physically close to the amplifier module. Double check wiring prior to turning on power. Improper/reverse wiring will damage the unit.



### TO - STYLE PHOTODIODE / AMPLIFIER

**GAIN SELECT:** The unit is supplied with a feedback resistance as per the specific data sheet. For convenience, a set resistor has also been installed inside the module, giving a 10:1 gain decrease by shorting pins 5 & 6. Other gain settings may be obtained by installing external resistance. Note that custom gain/bandwidth selections may be specified at the time of order. Consult the factory for details.

**OFFSET ADJUSTMENT:** Small adjustment to the output voltage may be made by installing an external potentiometer as shown, connected to pins 1 & 8 and 4 (-V). This adjustment is meant for zeroing out amplifier input errors and not for offsetting signals due to light leakage.

**AMBIENT LIGHT:** Because of the high gains involved, the unit must be shielded from ambient background light during operation. Measurement errors and/or saturation can result from improper shielding.

**NOTES ON SOLDERING:** Because of the high impedance values associated with the photodiode and the amplifier circuit it is extremely important to install the unit properly. All residues from the solder and flux must be thoroughly cleaned/removed or leakage will occur resulting in measurement errors and/or saturation of the unit. The photodiode and amplifier are static sensitive and should be handled in a static-controlled workstation. Use only grounded-tip soldering irons. Do not overheat the header pins.