



P8-0002

### ■ Description

The GR5-H15 is a low cost photo transistor, with a current output which is directly proportional to the light level. It is sensitive to visible and near infrared radiation..

The output current can be converted to a voltage by connecting it in series with a resistor. The dynamic range is determined by the external resistor and power supply (10K and 5V gives a range of 0 to over 200 Lux, but it can be over 1000 Lux with a 1K resistor). The internal dark current cancellation enables high accuracy over the full temperature range, even at low light levels.

### ■ Features

- RoHS compliant and complete CdS replaceable
- Current output highly linear V.S. light level
- Dark-current cancellation
- Temperature stable
- Compliant RoHS Directine 2002/95/EC



### ■ Applications

- Dawn/dusk sensing
- Surveillance Camera
- Display backlighting in LCD monitors
- Street light

### ■ Product Summary

Usable Light Range	Typ $I_{PSS}$ ( $\mu$ A)	$\Phi$ (deg)	$\lambda 0.5$ (nm)
0 ~ 1000 Lux	250 (R <sub>ss</sub> =10K)	120	300 to 1100

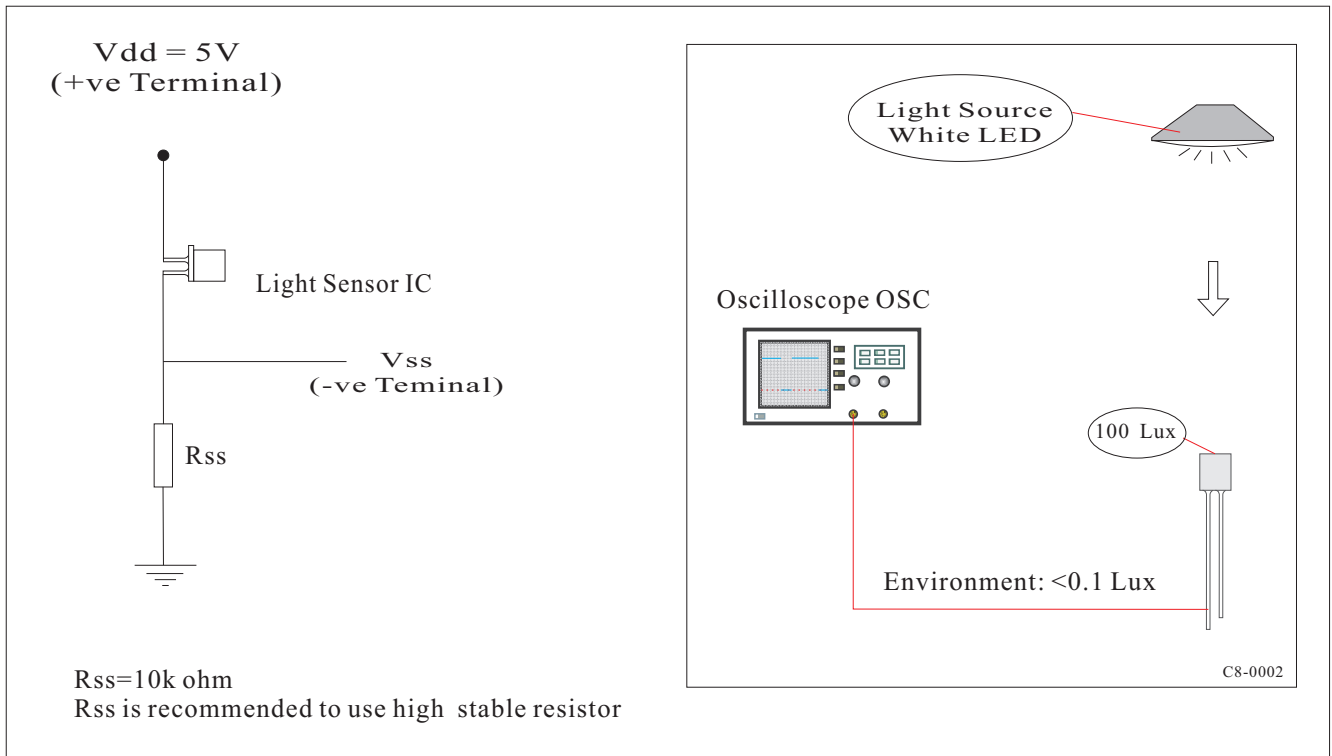
### ■ Ordering Information

Packaging	Each Bulk	MOQ	Package Form
Bulk	1000 PCS	1000 PCS	5mm (T1 $\frac{3}{4}$ )

### ■ Absolute Maximum Ratings(T<sub>a</sub>=25°C)

Parameter	Symbol	Rating	Unit
Permissible Power Dissipation	p	70	mW
Operating Temperature	T <sub>o</sub>	-30 to +85	°C
Storage Temperature	T <sub>stg</sub>	-40 to +100	°C

### ■ Test Circuit

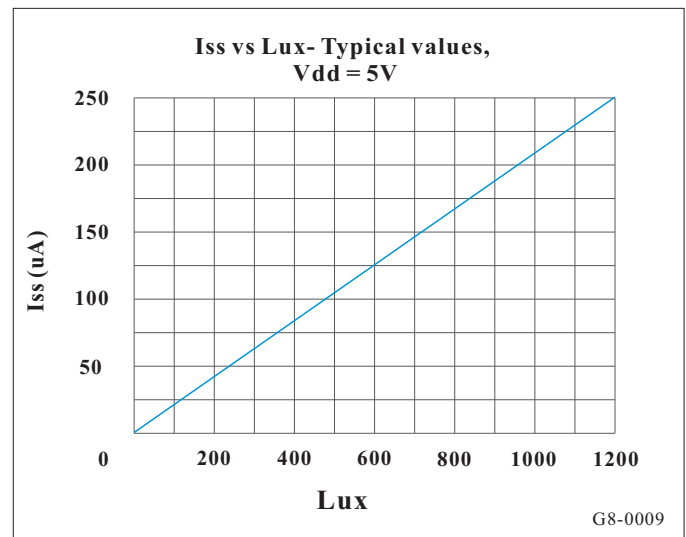
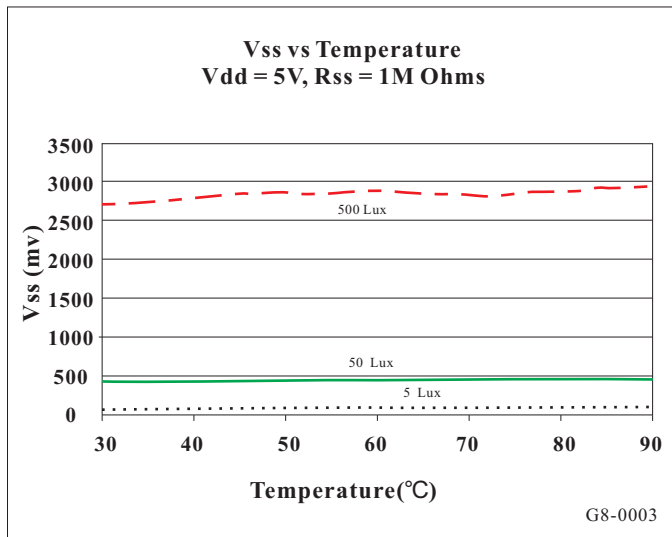
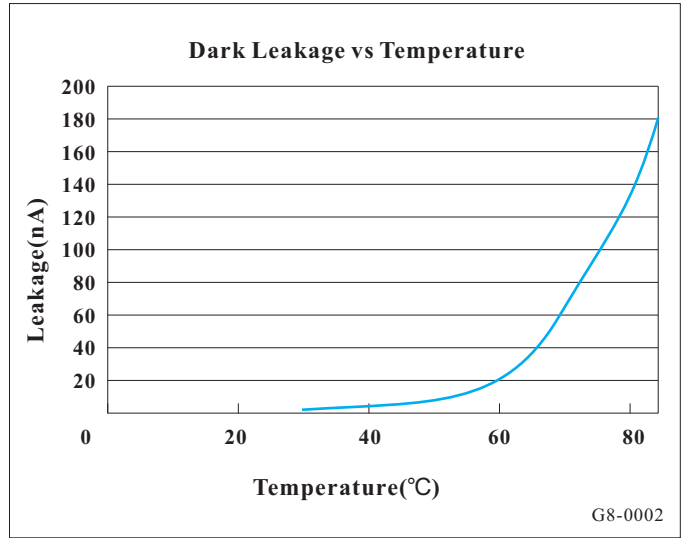
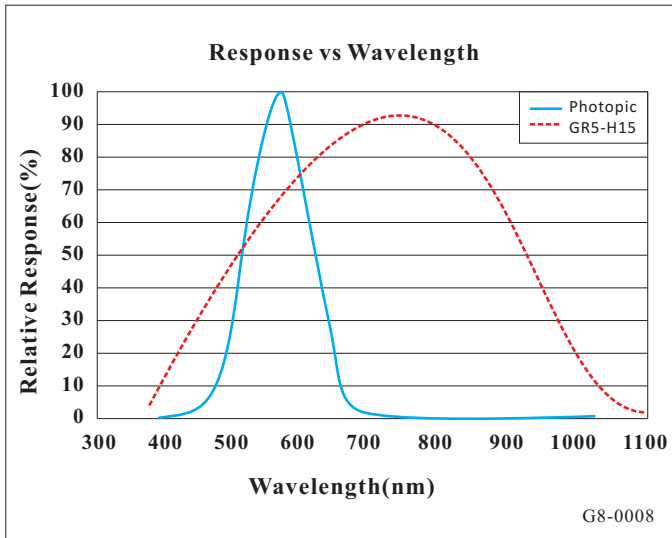


### ■ Electrical Specification

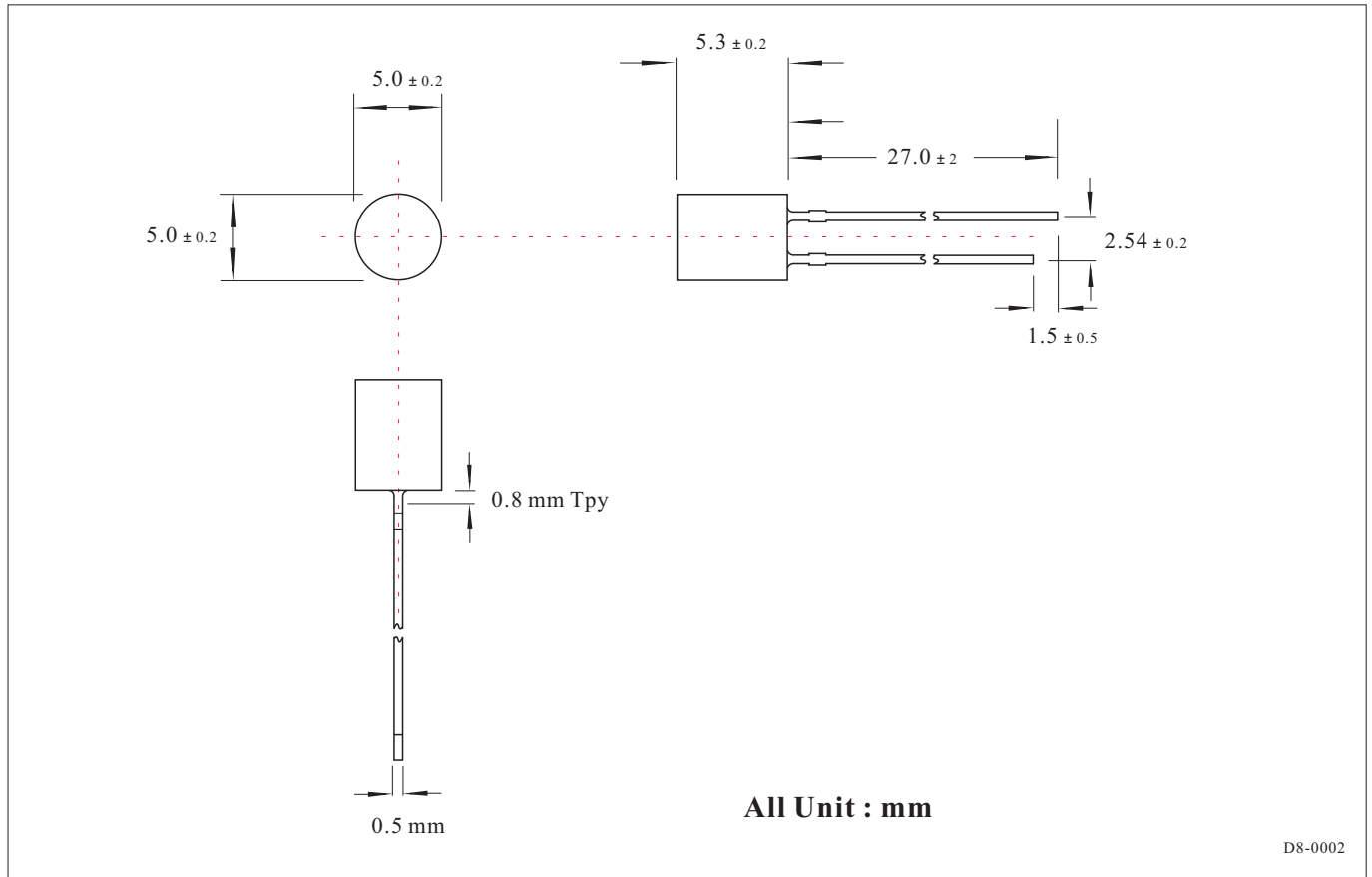
The following parameters apply over the operating temperature  $-40^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$ , and with  $R_{ss}=10\text{K Ohms}$ ,  $V_{dd}=5\text{V}$ , as per C8-0001

Parameter	Symbol	Test Conditions	Type	Unit
Minimum Operational Voltage	vdd	$I_{ss}=250\mu\text{A}$	2.4	v
Peak Spetral Response	$\lambda_{PR}$	$v_{dd}=5\text{v}, E_v=5\text{Lux}$	550	nm
Light Current +/-50%	$I_{ss}$	$v_{dd}=5\text{v}, E_v=100\text{Lux}$	30	$\mu\text{A}$
Collector Dark Current	$I_{ceo}(\text{dark})$	$0\text{Lux}, T_a=85^{\circ}\text{C}$	70	nA
Linear Response Range	$E_v$		0~200	Lux
Switching Time	Rise Time	$V_{ce}=2\text{v},$ $I_c=2\text{mA}$ $R_{ss}=100\text{k}\Omega$	2.5	us
	Fall Time		5.5	

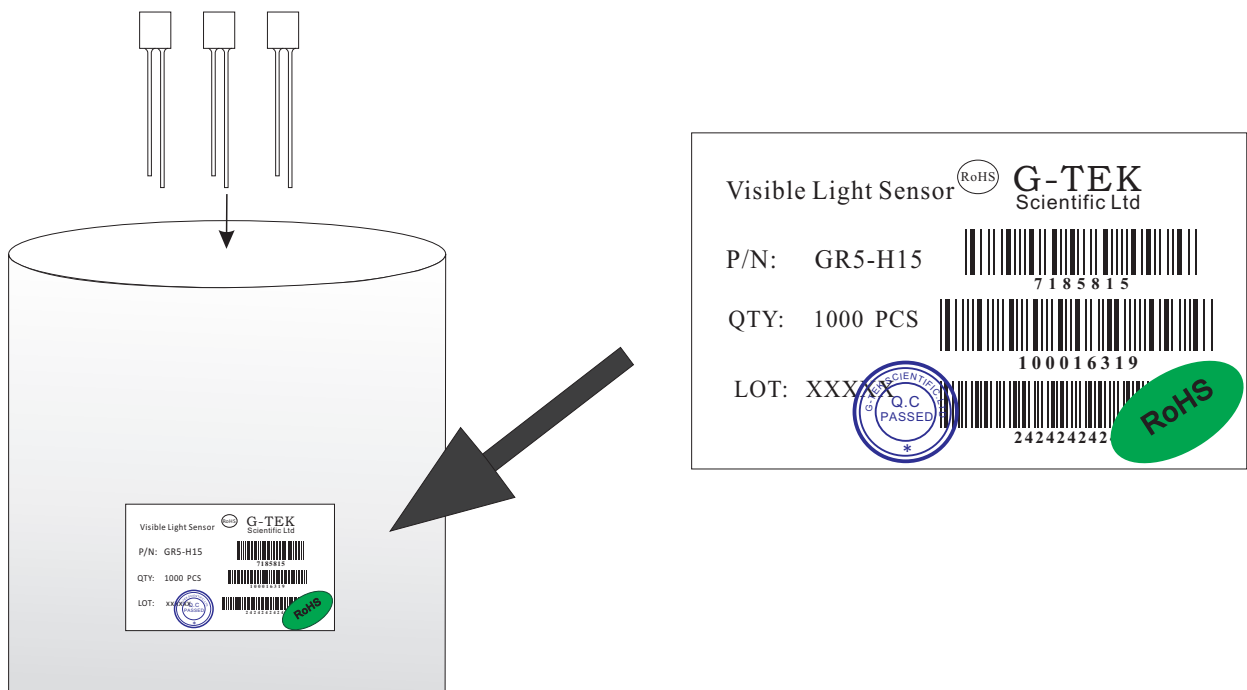
▪ **Charts**



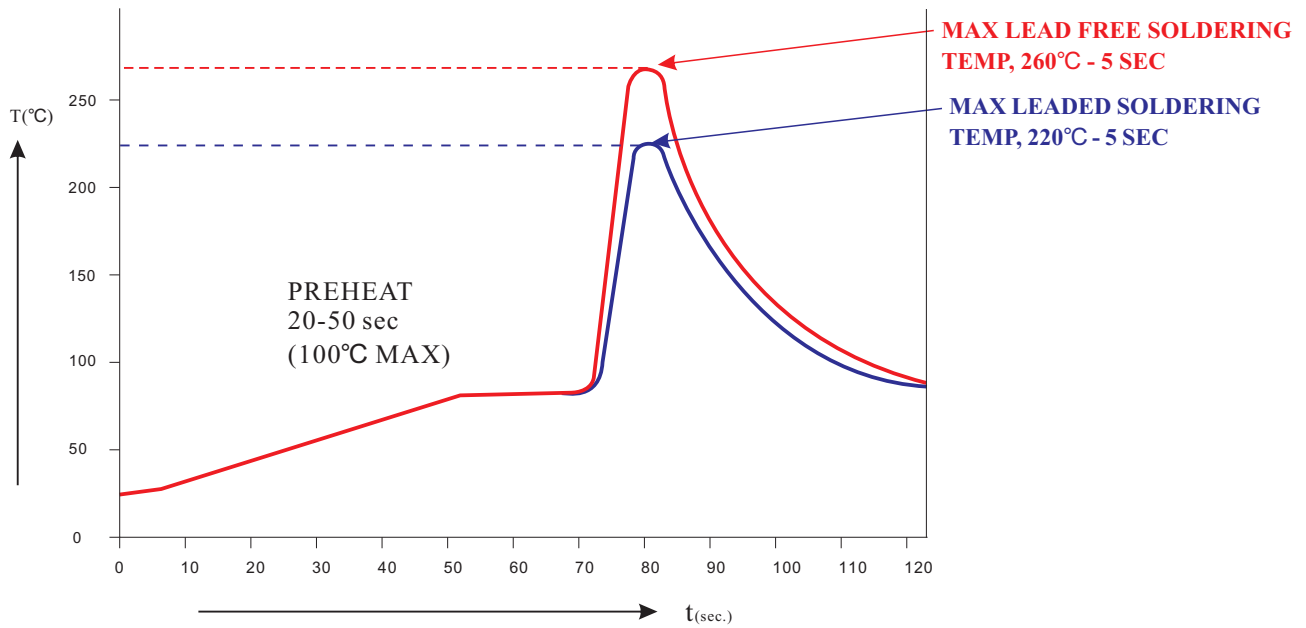
▪ **Dimensions**



▪ **Packaging and Labeling Plan**



■ Wave Solder Profile



G8-0007

Recommended Lead Free Wave Soldering Profile	
Preheat Temperature: 100°C Max	Peak Temperature: 260°C Max.
Preheat Time: 20~50 Seconds	Solder Time Above 217°C: 5 Seconds Max.
Note: Turn Off top heater at preheat to prevent the lamp body directly exposed to the heat source.	

■ Disclaimer

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

■ Material Category Policy

We declare that this part is ROHS 2002/95/EC compliant, based on our understanding of the directive.

This part is manufactured where the banned substances would not be used during processing.

G-Tek Scientific Ltd will perform periodic screening based on the determined risks, and are developing procedures as part of our management system to ensure compliance.