

P8-0001

### ■ Description

The GB5-A2C is a low cost visible light sensor, with a current output which is directly proportional to the light level. It has a built in optical filter to provide a response which is close to the human eye, or “photopic”.

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 2500 Lux, but it can be over 6000 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
- High IR rejection
- Current output highly linear V.S. light level
- Near human eye photopic response
- Dark-current cancellation
- Temperature stable



### ■ Applications

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

### ■ Product Summary

Usable Light Range	Typ I <sub>SS</sub> (uA)	Φ(deg)	λ0.5(nm)
0 ~ 6000 Lux	250 (R <sub>SS</sub> =10K)	120	400 to 700

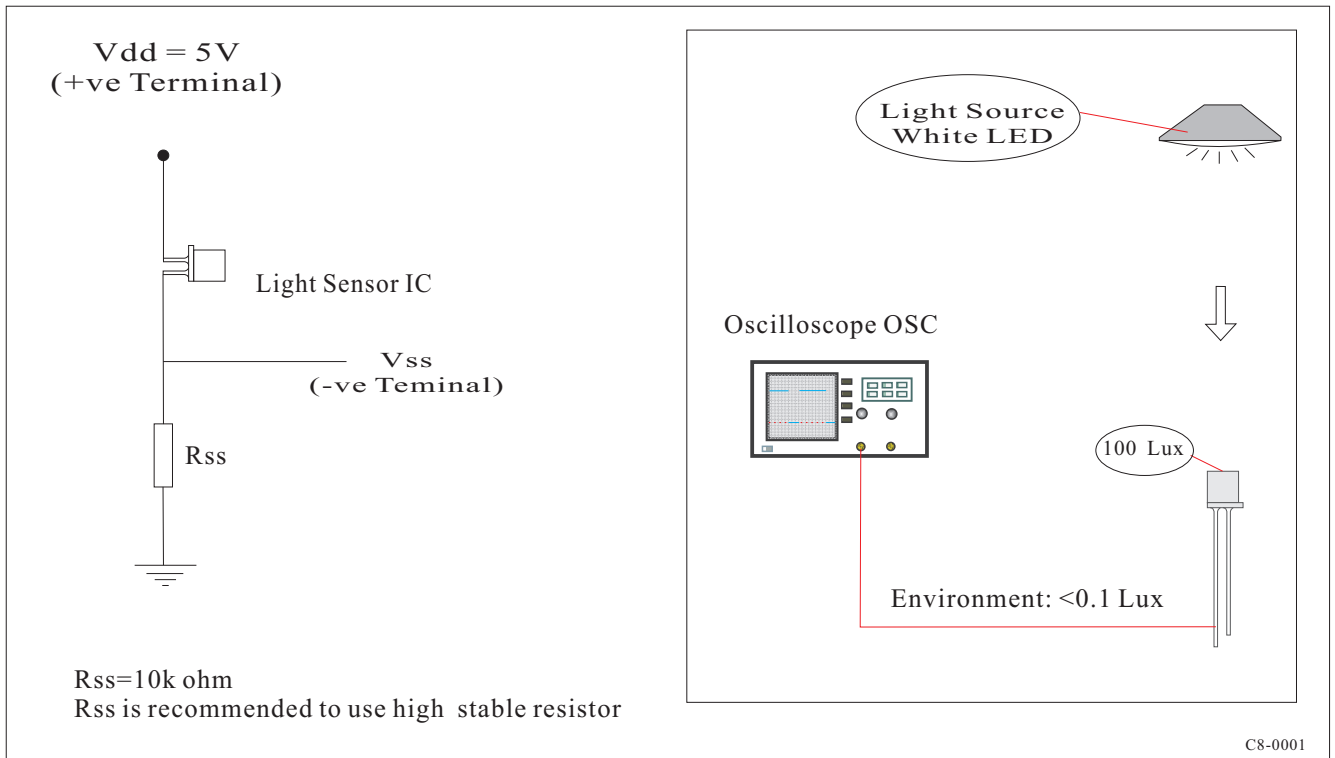
### ■ Ordering Information

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	Test Condition	Symbol	Rating	Unit
Supply Input Voltage		V <sub>dd</sub>	-0.3 to 10	V
Supply Current	Visible Light	I <sub>SS</sub>	Internally Limited	mA
Operating Temperature		T <sub>amb</sub>	-40 to +85	°C
Storage Temperature		T <sub>stg</sub>	-40 to +100	°C

### ■ Test Circuit

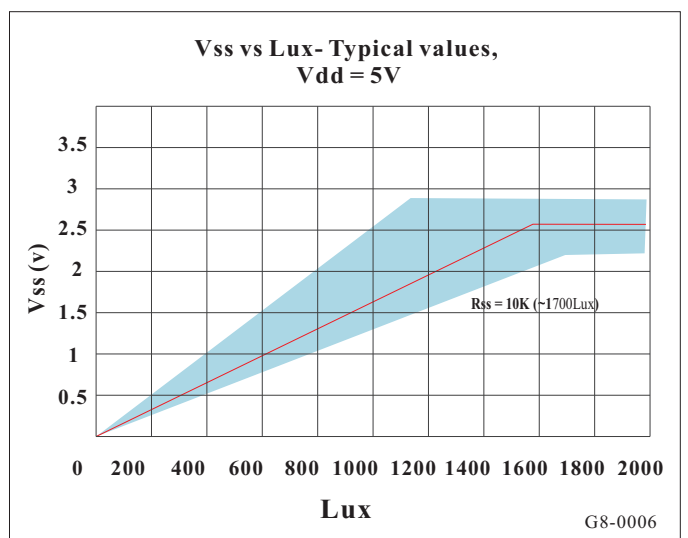
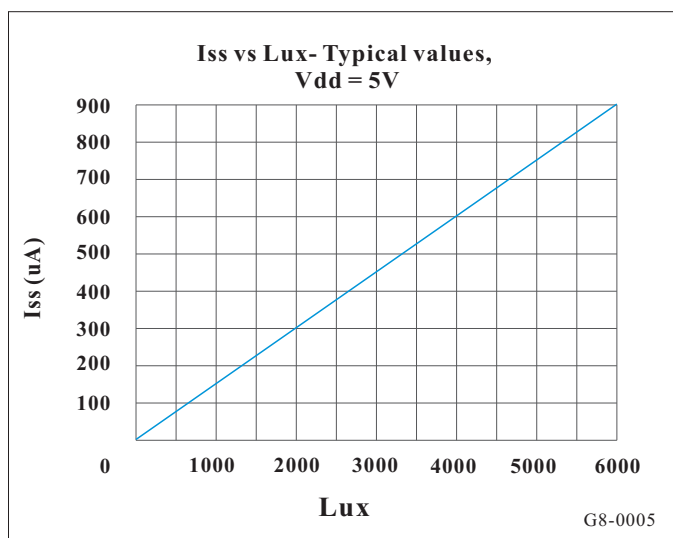
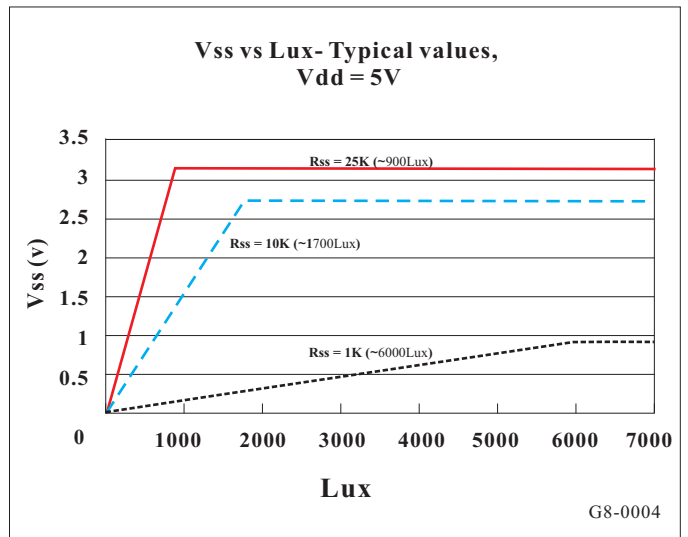
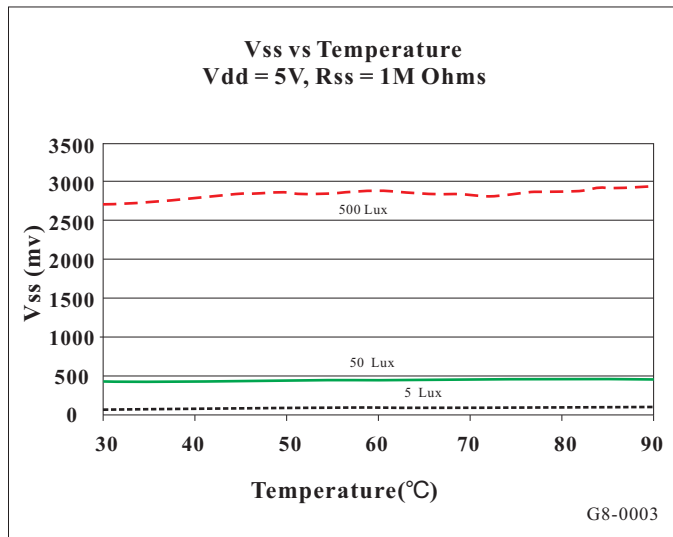
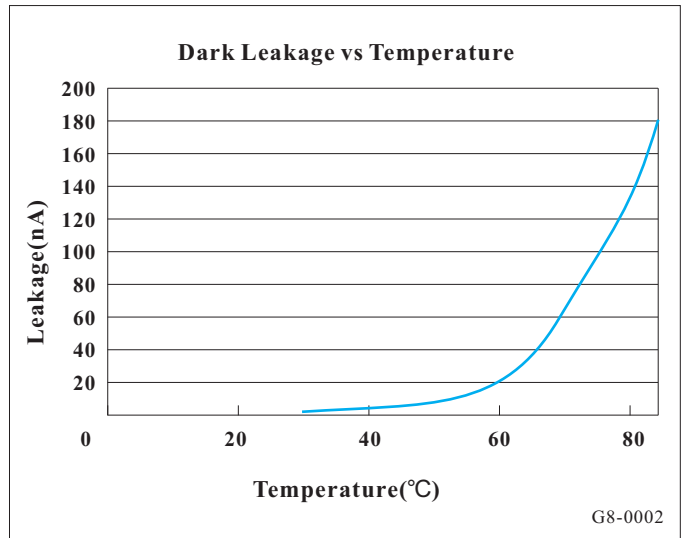
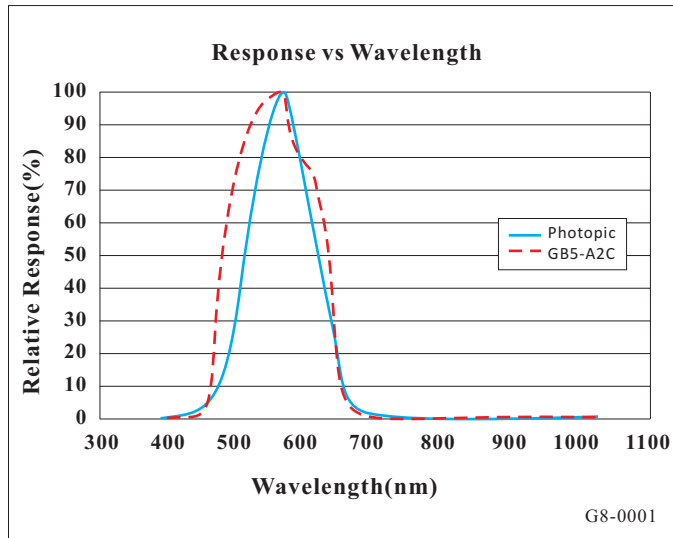


### ■ Electrical Specification

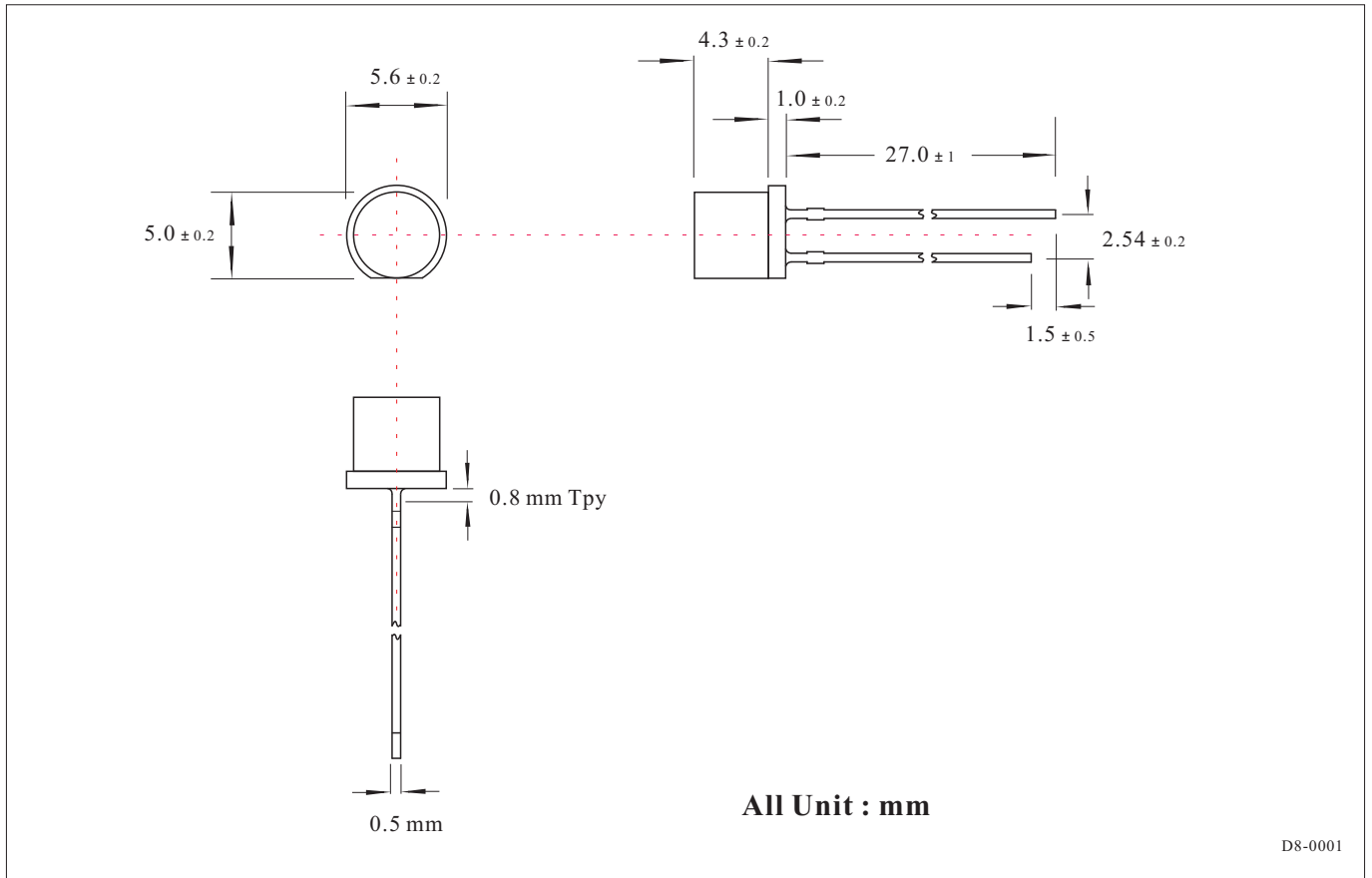
The following parameters apply over the operating temperature -40°C to +85°C, and with Rss=10K Ohms, Vdd=5V, as per C8-0001

Parameter	Symbol	Min	Typ	Max	Units	Test Conditions
Infra Red Response			1	5	% of peak	900 nm
Minimum operational voltage	Vdd-Vss		2.5		v	I <sub>ss</sub> = 250 uA
			1.5		v	I <sub>ss</sub> = 50 uA
Light Current +/-50%	I <sub>ss</sub>	150	300	450	uA	2000 Lux
		75	150	225	uA	1000 Lux
		7.5	15	22.5	uA	100 Lux
Dark Current	I <sub>(dark)</sub>		<1		nA	0 Lux, Ta = 25°C
			150		nA	0 Lux, Ta = 85°C
Gain linearity		-10		10	%	
Peak Spectral Response			520		nm	
Sensitive Area			0.054		mm <sup>2</sup>	

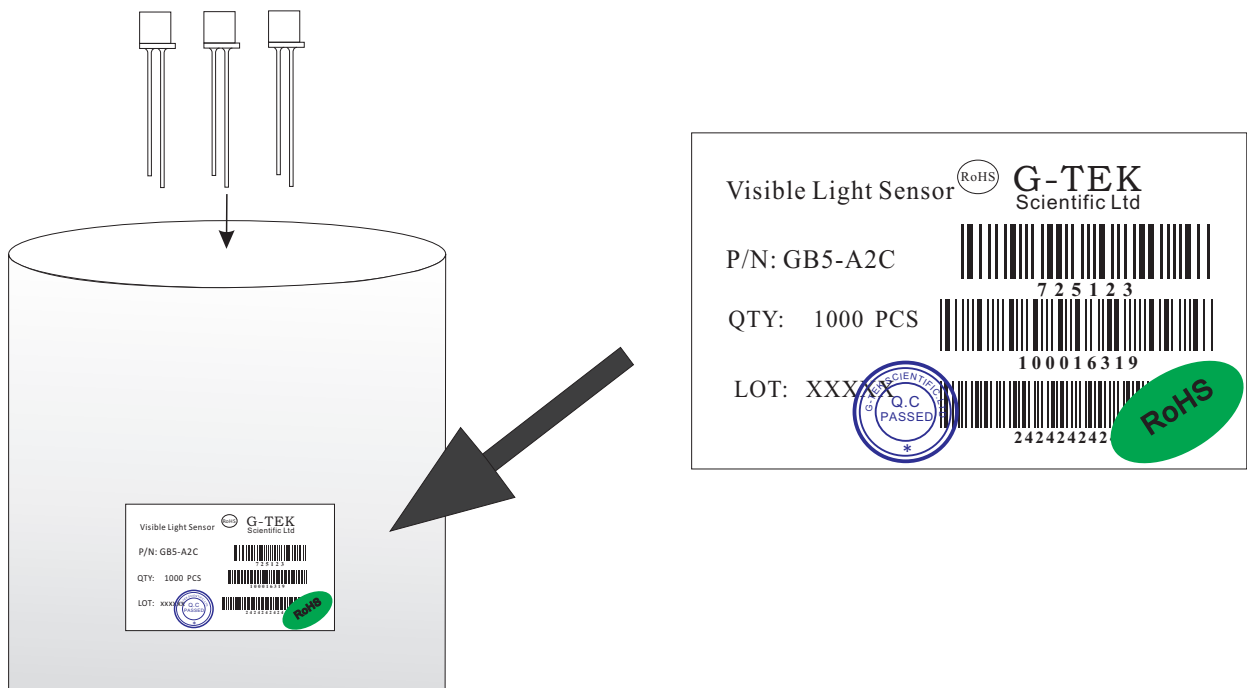
### Charts



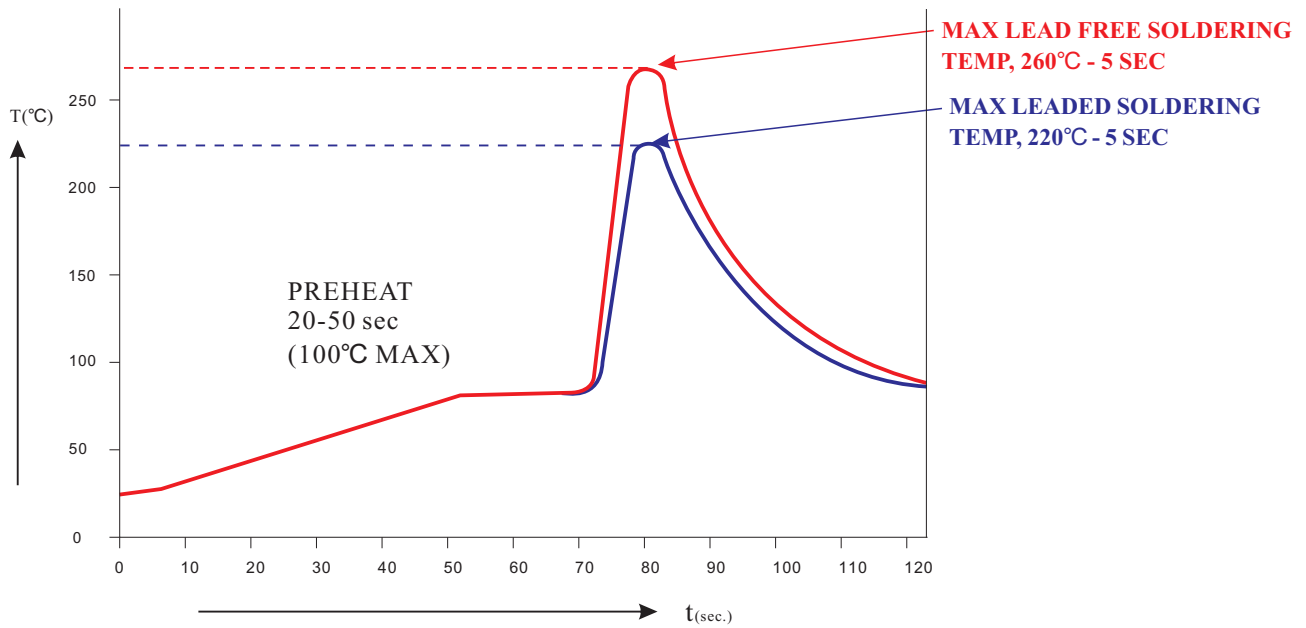
▪ **Dimensions**



▪ **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.