



Y.LIN ELECTRONICS CO.,LTD.

## Data Sheet

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Customer: \_\_\_\_\_  
Part No: YL5ATST16K22S24-C  
Sample No: \_\_\_\_\_  
Description: 5mm Phototransistor  
Item No: \_\_\_\_\_

| Customer |            |          |      |
|----------|------------|----------|------|
| Check    | Inspection | Approval | Date |
|          |            |          |      |

| Y.LIN |       |          |          |
|-------|-------|----------|----------|
| Drawn | Check | Approval | Date     |
|       |       |          | 2015-7-3 |

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## YL5ATST16K22S24-C

### Features:

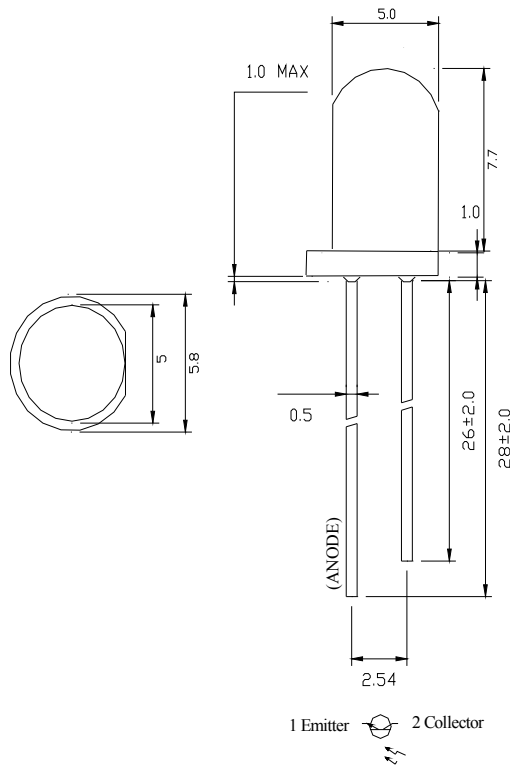
- . Mechanically and spectrally matched to the phototransistor.
- . Rohs compliant.



### Description

- . This devices are made with PIN GaAs.

### Package Dimensions:



### NOTES

- 1.All dimensions are in millimeters .
- 2.Tolerance is  $\pm 0.25\text{mm}$  unless otherwise noted.

| Part No                    | Material           |      |      |     | Lens Color |  |
|----------------------------|--------------------|------|------|-----|------------|--|
| PT                         | Silicon            |      |      |     | Black      |  |
| Parameter                  | Symbol             | Min. | Typ. | Max | Unit       | Test Condition                                 |
| Collector Dark Current     | I <sub>ceo</sub>   |      |      | 100 | nA         | VR=5V  |
| On Strte Collector Current | I <sub>C(on)</sub> | 3    | 5    |     | mA         | E <sub>e</sub> =1mw/cm <sup>2</sup><br>/VCE=5v |
| Controlled Angle           | 2θ <sub>1/2</sub>  |      | 45   |     | deg        |  |

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## Electrical / Optical Characteristics at Ta=25°C

| Parameter                            | Symbol          | Min. | Typ.  | Max  | Units | test conditions                    |
|--------------------------------------|-----------------|------|-------|------|-------|------------------------------------|
| Rang of Spectral Bandwidth           | $\lambda_{0.5}$ | 800  |       | 1200 | nm    | Vs=5v Ev=0                         |
| Peak Wavelength                      | $\lambda_p$     |      | 940   |      | nm    |                                    |
| Collector-Emitter Breackdown Voltage | Bvceo           | 30   |       | 100  | V     | IC=100uA<br>Ee=0mw/cm <sup>2</sup> |
| Emitter-Collector Breackdown Voltage | Bveco           |      | 0.6   |      | V     |                                    |
| Collector-Emitted Saturation Voltage | VCE(sat)        |      |       | 0.4  |       | IC=2mA<br>Ee=1mw/cm <sup>2</sup>   |
| collector Dark Current               | Iceo            |      |       | 100  | nA    | VR=5V                              |
| Switch time                          | tr/tf           |      | 15/15 |      | us    | VCE=5v<br>IC=1mA                   |

Note:

- 1.1/2 is the angle from optical centerline where the luminous intensity is 1/2 the optical centerline value.
- 2.the above luminous intensity measurement allowance tolerance  $\pm 15\%$

## Absolute Maximum Ratings at Ta=25°C

| Parameter  | Symbol | Rating              | Units |
|--|--------|---------------------|-------|
| Collector-Emitter Voltage                              | Vceo   | 30                  | V     |
| Emitter-Collector Voltage                              | Veco   | 5                   | V     |
| Collector Current                                      | IC     | 20                  | mA    |
| Power Dissipation                                      | PD     | 75                  | mW    |
| Operating Temperature                                  | Topr   | -20~+80             | °C    |
| Storage Temperature                                    | Tstg   | -40~+100            | °C    |
| Lead Soldering Temperature<br>[1.6mm(.063") From Body] |        | 260°C for 5 seconds |       |

Note:

1. 1/10 Dut cycle,0.1ms pulse width.
2. The above forward voltage measure ment allowance tolerance  $\pm 0.1V$ .

### Typical optical characteristics curves

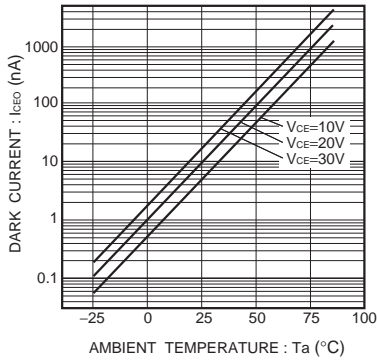


Fig.1 Dark current vs. ambient temperature

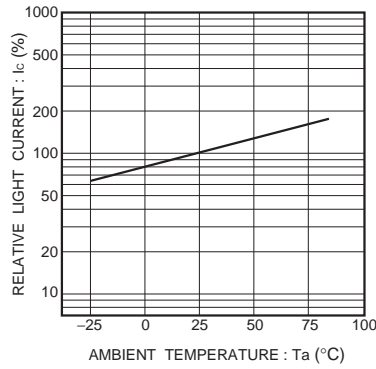


Fig.2 Relative output vs. ambient temperature

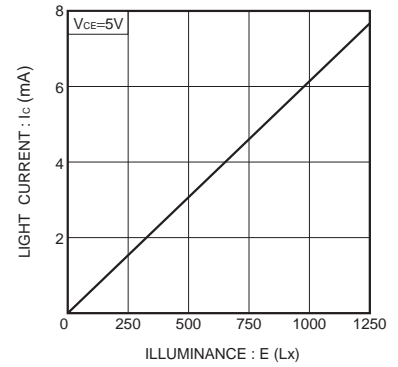


Fig.3 Light current vs. irradiance

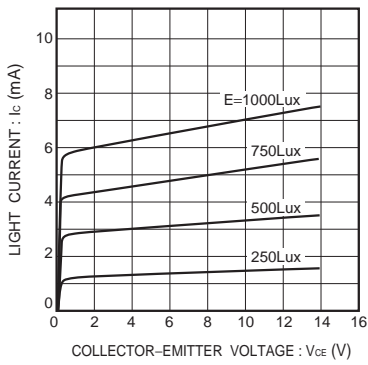


Fig.4 Output characteristics

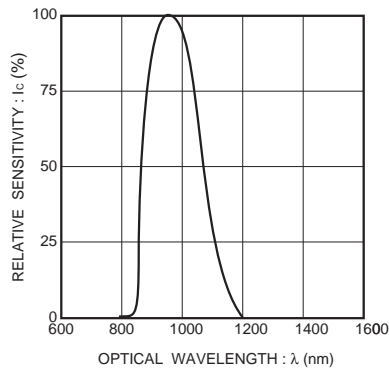


Fig.5 Spectral sensitivity

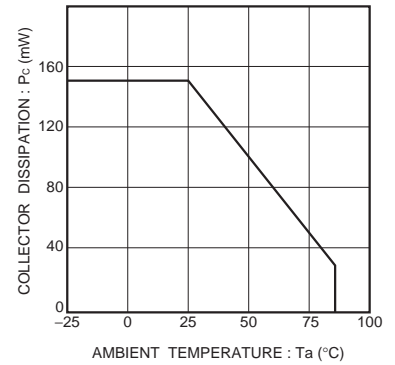


Fig.6 Collector dissipation vs. ambient temperature

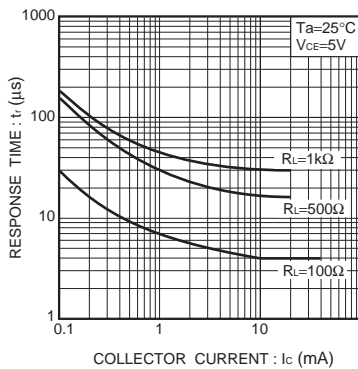
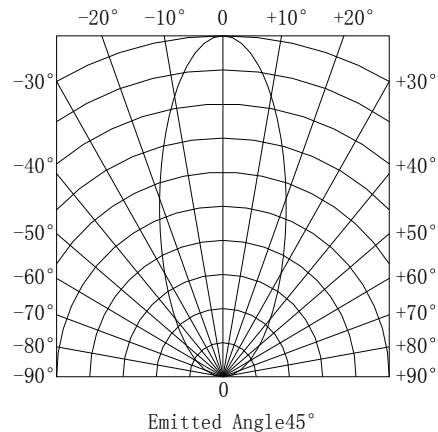


Fig.7 Response time vs. collector current



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## 1.Application:

Infrared applied system

Camera

Printer

Optoelectronic switch

Cockroach catcher

## 2. Cleaning

Use alcohol-based cleaning solvent such as isopropyl alcohol to clean the LEDs if necessary.

## 3.Soldering

When soldering leave a minimum of 2mm clearance from the base of the lens to the soldering point.

Dipping the lens into the solder must be avoided.

Do not apply any external stress to the lead frame during soldering while the LED is at high temperature.

Recommended soldering conditions:

| Soldering iron |                              | Wave soldering                |                         |
|----------------|------------------------------|-------------------------------|-------------------------|
| Temperature    | 320°C Max                    | Pre-heat<br>Pre-heat time     | 100°C Max<br>60 sec.Max |
| Soldering time | 3 sec.Max<br>(one time only) | Solder wave<br>Soldering time | 260°C Max<br>5 sec.Max  |

Note: Excessive soldering temperature and/or time might result in deformation of the LED lens or catastrophic failure of the LED.

## 4.Lead Forming & Assembly

During lead forming, the leads should be bent at point at least 3mm from the base of PIN lens.

Do not use the base of the lead frame as a fulcrum during forming.

Lead forming must be done before soldering, at normal temperature.

During assembly on PCB, use minimum clinch force possible to avoid excessive mechanical stress.

## 5.Protece Of ESD

Since the device is static sensitive, it is requested that anti-static measures should be taken on human body, all devices (including soldering iron) and equipment, machinery, desk and ground.