

## SIDE- LOOK PACKAGE PHOTOTRANSISTOR

### ● Features

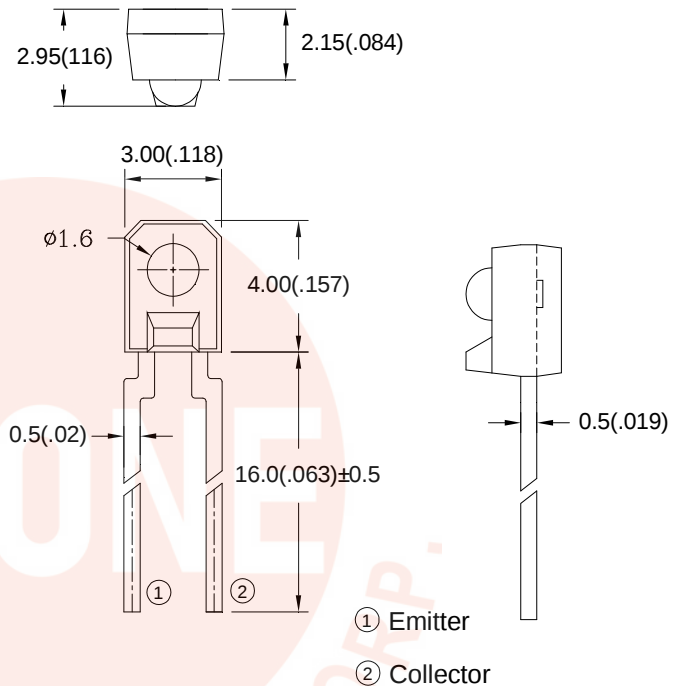
1. Wide range of collector current.
2. high sensitivity.
3. Low cost plastic package.
4. Lens Appearance: Black
5. This product doesn't contain restriction Substance, comply RoHS standard

### ● Description

The BPT-NPGAC3-IAG is a NPN silicon Phototransistor mounted in a lensed , water clear plastic package .

The lensing effect of the package allows an acceptance half view angle of 25° that is measured from the optical axis to the half power point .

### ● Package Dimensions:



#### NOTES:

1. All dimensions are in millimeters (inches).
2. Tolerance is  $\pm 0.25\text{mm}$  (0.01") unless otherwise specified.
3. Lead spacing is measured where the leads emerge from the package
4. Specifications are subject to change without notice

### ● Absolute Maximum Ratings(Ta=25°C)

| Parameter                  | Maximum Rating | Unit |
|----------------------------|----------------|------|
| Collector- Emitter Voltage | 30             | V    |
| Emitter- Collector Voltage | 5              | V    |
| Operating Temperature      | -40°C ~+85°C   |      |
| Storage Temperature Range  | -45°C ~+85°C   |      |

● Electrical Characteristics (Ta=25°C unless otherwise noted)

| PARAMETER                             | SYMBOL          | MIN | TYP | MAX | UNITS         | TEST CONDITIONS                                               |
|---------------------------------------|-----------------|-----|-----|-----|---------------|---------------------------------------------------------------|
| Collector- Emitter Breakdown Voltage  | $V_{(BR)CEO}$   | 30  | -   | -   | V             | $I_C=1\text{ mA}$ , $E_e=0\text{mW/cm}^2$                     |
| Emitter-Collector Breakdown Voltage   | $V_{(BR)ECO}$   | 5   | -   | -   | V             | $I_R=0.1\text{mA}$ , $E_e=0\text{ mW/cm}^2$                   |
| Collector- Emitter Saturation Voltage | $V_{CE(SAT)}$   | -   | -   | 0.5 | V             | $I_C=0.1\text{ mA}$ , $E_e=1.0\text{mW/cm}^2$                 |
| Rise Time                             | $T_r$           | -   | 25  | -   | $\mu\text{S}$ | $V_{CE}=5\text{V}$ , $R_L=1\text{K}\Omega$ , $F=100\text{HZ}$ |
| Fall Time                             | $T_f$           | -   | 25  | -   |               |                                                               |
| Collector Dark Current                | $I_d$           | -   | -   | 0.5 | $\mu\text{A}$ | $V_{CE}=10\text{V}$ , $E_e=0\text{ mW/cm}^2$                  |
| Light Current                         | $I_C(ON)$       | -   | 3.0 | -   | mA            | $V_{CE}=5\text{V}$ , $E_e=1.0\text{mW/cm}^2$                  |
| Angle of sensitivity                  | $2\theta_{1/2}$ | -   | 25  | -   | deg           |                                                               |

● Typical Optical-Electrical Characteristic Curves

FIG.1 Transmittance vs.Wavelength

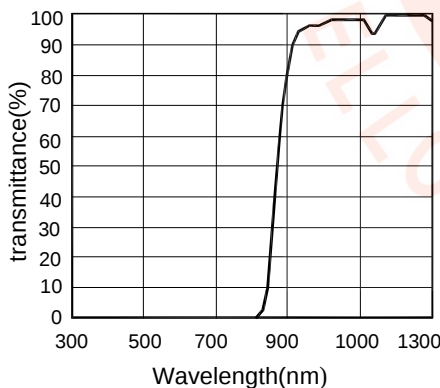


FIG.2 Dark Current Vs. Ambient Temperature

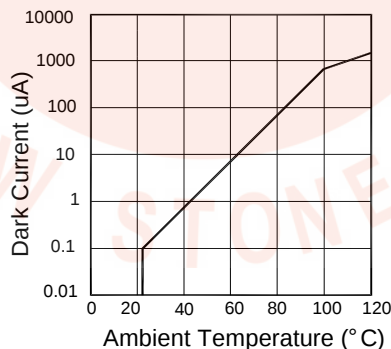


FIG.3 Power Dissipation Vs. Ambient Temperature

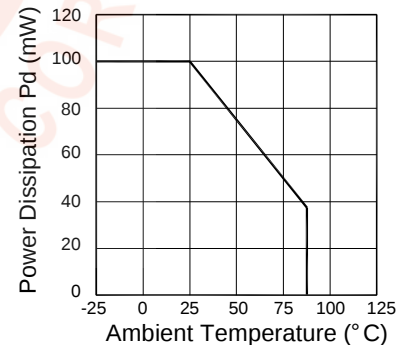


FIG.4 Rise And Fall Time Vs. Load Resistance

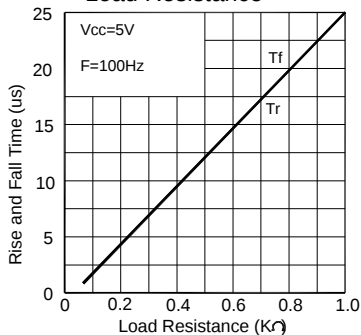


FIG.5 Relative Collector Current Vs. Irradiance

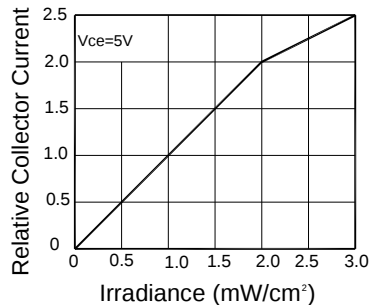
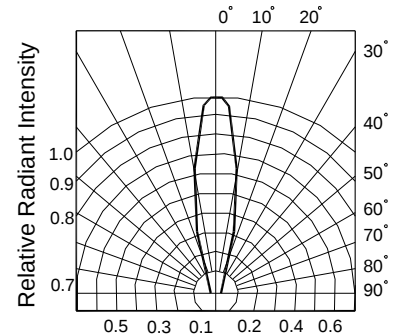
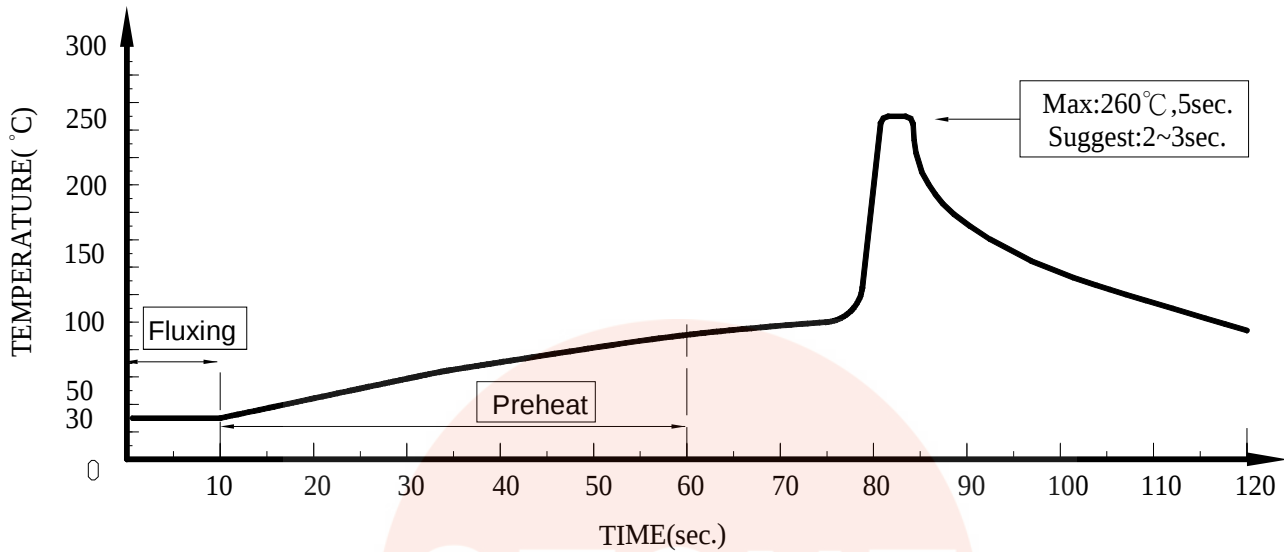


FIG.6 Radiant Diagram



## ● Dip Soldering

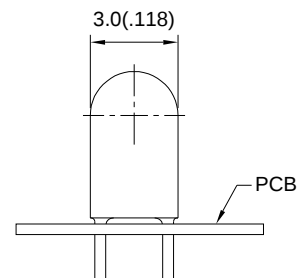


1. Please avoid any external stress applied to the lead-frames and epoxy while the LEDs are at high temperature, especially during soldering
2. DIP soldering and hand soldering should not be done more than one time.
3. After soldering, avoid the epoxy lens from mechanical shock or vibration until the LEDs are back to room temperature.
4. Avoid rapid cooling during temperature ramp-down process
5. Although the soldering condition is recommended above, soldering at the lowest possible temperature is feasible for the LEDs

## ● IRON Soldering

**A: Max: 350°C Within 3 sec. One time only.**

**B: The products of 3mm without flange, welding condition of flat plate PCB Max: 350°C Within 2 sec. One time only**





## Phototransistors Specification

2 Commodity: Phototransistors

2 Collector Current Bin Limits (At  $V_{CE}=5V$   $E_e=1.0mW/cm^2$ )

| BIN CODE | Min.(mA) | Max.(mA) |
|----------|----------|----------|
| P10      | 1.60     | 1.85     |
| P11      | 1.85     | 2.05     |
| P12      | 2.05     | 2.30     |
| P13      | 2.30     | 2.55     |
| P14      | 2.55     | 2.80     |
| P15      | 2.80     | 3.05     |
| P16      | 3.05     | 3.30     |
| P17      | 3.30     | 3.60     |
| P18      | 3.60     | 3.90     |

NOTES: Tolerance of measurement of Radiant Intensity :±15%