

## NPN EPITAXIAL DARLINGTON PHOTOTRANSISTOR PHOTO DETECTOR

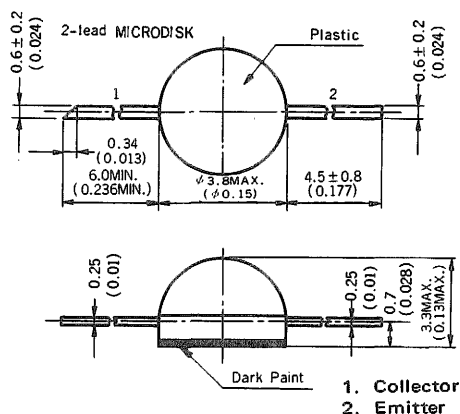
— NEPOC SERIES —

### DESCRIPTION

The PH101 is a miniature NPN silicon phototransistor having exceptionally stable characteristics and high illuminance sensitivity mounted in a two-terminal MICRODISK package. The spectral response, extending from 4,000 to 10,000Å, is compatible with daylight, tungsten, and gallium arsenide sources. The packaging of this unit permits close-spacing in linear arrays. Its low cost and volume producibility opens new areas of use anywhere a photo detector is desirable.

### PACKAGE DIMENSIONS

in millimeters (inches)



\* Soldering conditions are at 260°C or less within 5sec. at 3 mm or farther from the case.

### FEATURES

- Low cost.
- Low Leakage Current.
- Wide Spectral Response.
- Convenient MICRODISK Package.
- Wide Temperature Range.
- Compact, Rugged, Light Weight.
- High Sensitivity.

### APPLICATIONS

- Optical Switching and Encoding.
- Intrusion Alarm.
- Tape and Card Reader Sensor.
- Level Control
- Motor governor.

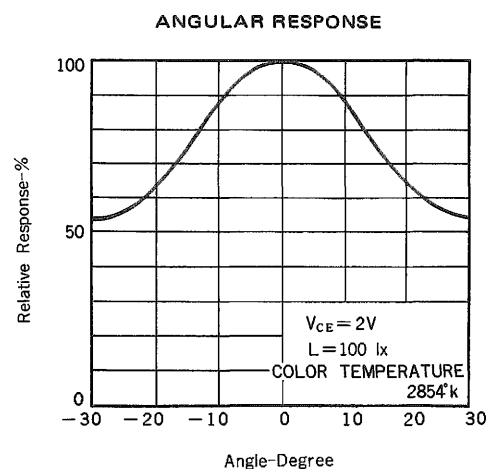
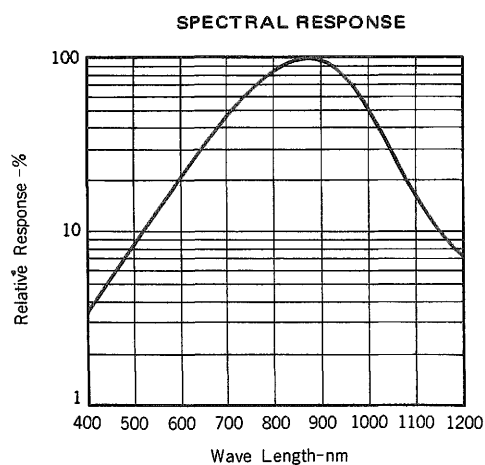
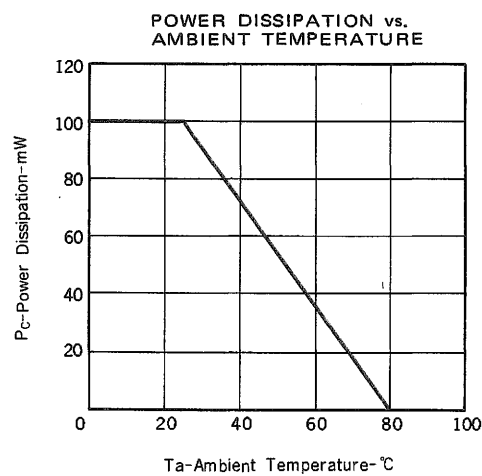
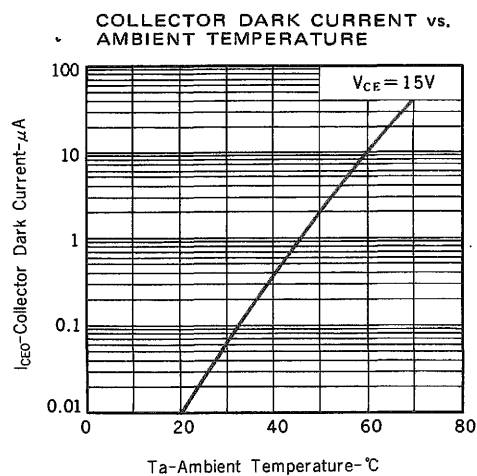
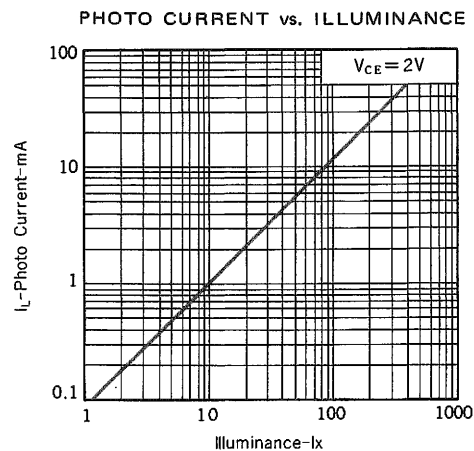
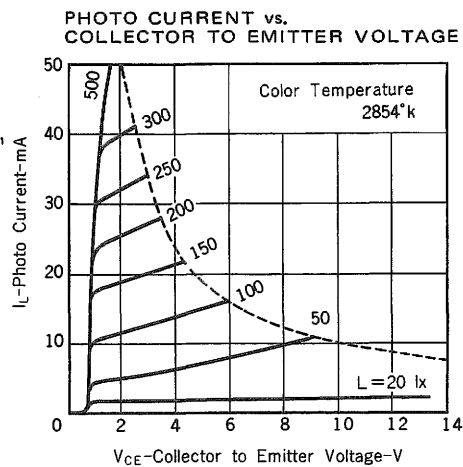
### ABSOLUTE MAXIMUM RATINGS

|                                                |                  |            |    |
|------------------------------------------------|------------------|------------|----|
| Maximum Collector to Emitter Voltage (Ta=25°C) | V <sub>CEO</sub> | 20         | V  |
| Maximum Collector Current (Ta=25°C)            | I <sub>C</sub>   | 50         | mA |
| Maximum Power Dissipation (Ta=25°C)            | P <sub>C</sub>   | 100        | mW |
| Maximum Temperatures (Ta=25°C)                 |                  |            |    |
| Junction Temperature                           | T <sub>j</sub>   | 80         | °C |
| Storage Temperature                            | T <sub>stg</sub> | -30 to +80 | °C |

### ELECTRO-OPTICAL CHARACTERISTICS (Ta = 25°C)

| CHARACTERISTIC                    | SYMBOL                | MIN. | TYP. | MAX. | UNIT | TEST CONDITIONS                         |
|-----------------------------------|-----------------------|------|------|------|------|-----------------------------------------|
| Collector to Emitter Dark Current | I <sub>CE01</sub>     |      |      | 0.5  | μA   | V <sub>CE</sub> = 15V, L = 0            |
| Collector to Emitter Dark Current | I <sub>CE02</sub>     |      |      | 500  | μA   | V <sub>CE</sub> = 15V, L = 0, Ta = 80°C |
| Collector Saturation Voltage      | V <sub>CE (sat)</sub> |      | 0.7  | 1.5  | V    | I <sub>C</sub> = 10 mA, L* = 1,000 lx   |
| Photo Current                     | I <sub>L</sub>        | 4    | 12   |      | mA   | V <sub>CE</sub> = 2.0V, L* = 100 lx     |

\* Measured with a tungsten filament lamp operated at a color temperature of 2854°K.

TYPICAL CHARACTERISTICS ( $T_a = 25^\circ\text{C}$ )

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