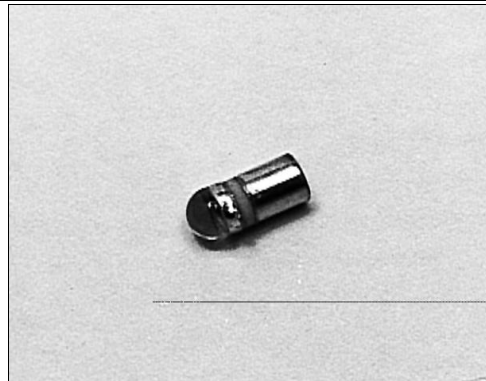


# SD2410

## Silicon Photodarlington

### FEATURES

- Miniature, hermetically sealed, pill style, metal can package
- 48° (nominal) acceptance angle
- Wide operating temperature range (-55°C to +125°C)
- Ideal for direct mounting to printed circuit boards
- Wide sensitivity ranges
- Mechanically and spectrally matched to SE2460 and SE2470 infrared emitting diodes



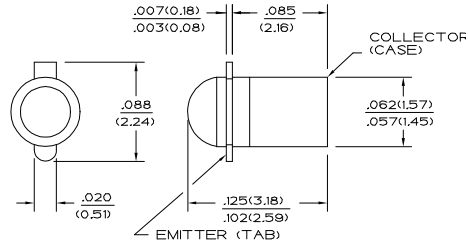
INFRA-1.TIF

### DESCRIPTION

The SD2410 is an NPN silicon photodarlington mounted in a hermetically sealed glass lensed metal can package. This package directly mounts in double sided PC boards.

### OUTLINE DIMENSIONS in inches (mm)

Tolerance 3 plc decimals ±0.005(0.12)  
2 plc decimals ±0.020(0.51)



DIM\_013.cdr

# SD2410

## Silicon Photodarlington

### ELECTRICAL CHARACTERISTICS (25°C unless otherwise noted)

| PARAMETER   | SYMBOL        | MIN               | TYP | MAX | UNITS         | TEST CONDITIONS  |
|---|---------------|-------------------|-----|-----|---------------|--|
| Light Current<br>SD2410-001<br>SD2410-002<br>SD2410-003 | $I_L$         | 1.0<br>3.0<br>6.0 |     |     | mA            | $V_{CE}=5\text{ V}$<br>$H=1\text{ mW/cm}^2$ (1)                    |
| Collector Dark Current                                  | $I_{CEO}$     |                   |     | 250 | nA            | $V_{CE}=10\text{ V}$ , $H=0$                                       |
| Collector-Emitter Breakdown Voltage                     | $V_{(BR)CEO}$ | 15                |     |     | V             | $I_C=100\text{ }\mu\text{A}$                                       |
| Emitter-Collector Breakdown Voltage                     | $V_{(BR)ECO}$ | 5.0               |     |     | V             | $I_E=100\text{ }\mu\text{A}$                                       |
| Collector-Emitter Saturation Voltage                    | $V_{CE(SAT)}$ |                   |     | 1.1 | V             | $I_C=1\text{ mA}$<br>$H=5\text{ mW/cm}^2$                          |
| Angular Response (2)                                    | $\emptyset$   |                   | 48  |     | degr.         | $I_F=\text{Constant}$  |
| Rise And Fall Time                                      | $t_r, t_f$    |                   | 75  |     | $\mu\text{s}$ | $V_{CC}=5\text{ V}$ , $I_L=1\text{ mA}$<br>$R_L=100\text{ }\Omega$ |

#### Notes

1. The radiation source is a tungsten lamp operating at a color temperature of 2870°K.
2. Angular response is defined as the total included angle between the half sensitivity points.

### ABSOLUTE MAXIMUM RATINGS

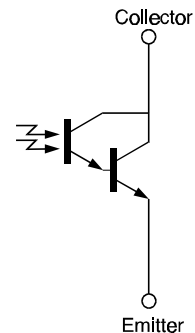
(25°C Free-Air Temperature unless otherwise noted)

|                                |                |
|--------------------------------|----------------|
| Collector-Emitter Voltage      | 15 V           |
| Emitter-Collector Voltage      | 5 V            |
| Power Dissipation              | 125 mW (1)     |
| Operating Temperature Range    | -55°C to 125°C |
| Storage Temperature Range      | -65°C to 150°C |
| Soldering Temperature (10 sec) | 260°C          |

#### Notes

1. Derate linearly from 25°C free-air temperature at the rate of 1.19 mW/°C.

### SCHEMATIC



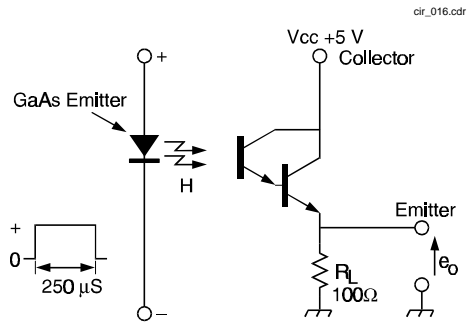
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# SD2410

## Silicon Photodarlington

### SWITCHING TIME TEST CIRCUIT



### SWITCHING WAVEFORM

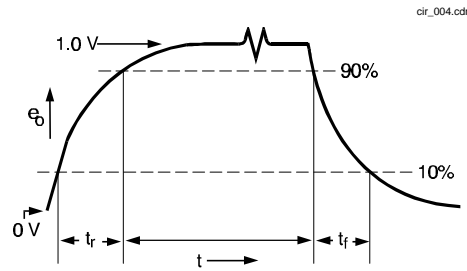


Fig. 1 Responsivity vs Angular Displacement

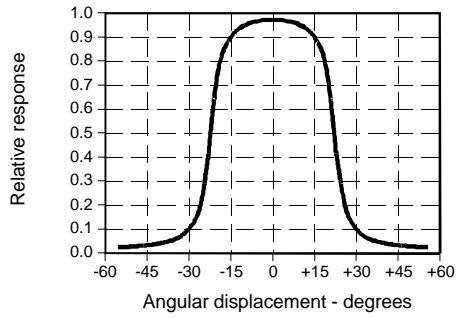


Fig. 2 Non-Saturated Switching Time vs Load Resistance

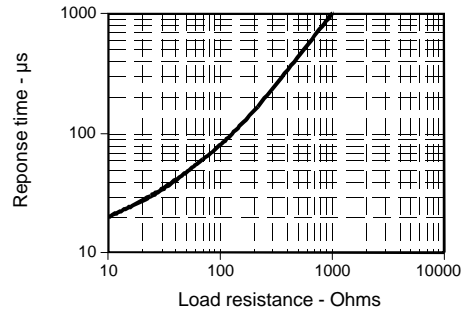
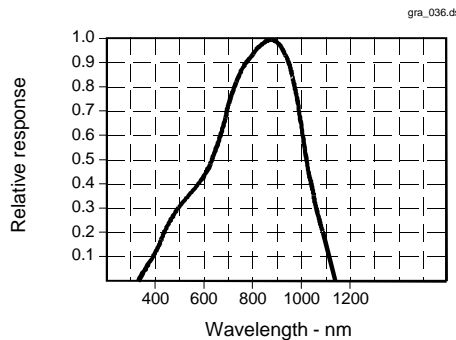


Fig. 3 Spectral Responsivity



All Performance Curves Show Typical Values

**SD2410**  
Silicon Photodarlington

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**Honeywell**

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Elblinger Elektronik GmbH  
Lange Wanne 25  
38259 Salzgitter

Telefon 05341/8212-1  
Fax 05341/821299

e-mail [mail@elblinger-elektronik.de](mailto:mail@elblinger-elektronik.de)  
Internet [www.elblinger-elektronik.de](http://www.elblinger-elektronik.de)