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With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

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## Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China

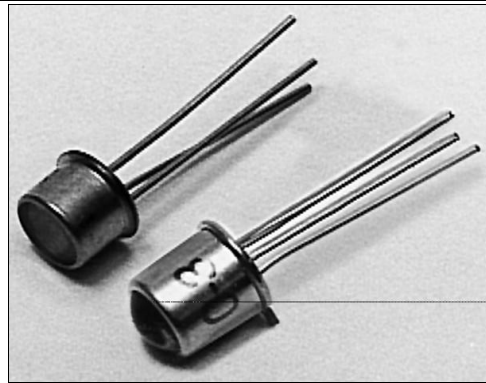


# SD3410/5410

## Silicon Photodarlington

### FEATURES

- TO-46 metal can package
- Choice of flat window or lensed package
- 90° or 12° (nominal) acceptance angle option
- Wide operating temperature range (-55°C to +125°C)
- Wide sensitivity ranges
- Mechanically and spectrally matched to SE3450/5450, SE3455/5455 and SE3470/5470 infrared emitting diodes



INFRA-17.TIF

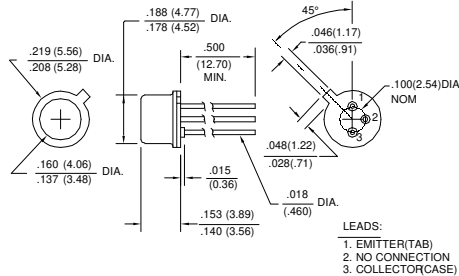
### DESCRIPTION

The SD3410/5410 series consists of an NPN silicon photodarlington mounted in a TO-46 metal can package. The SD3410 has flat window cans providing a wide acceptance angle, while the SD5410 has glass lensed cans providing a narrow acceptance angle. The TO-46 packages are ideally suited for operation in hostile environments.

### OUTLINE DIMENSIONS in inches (mm)

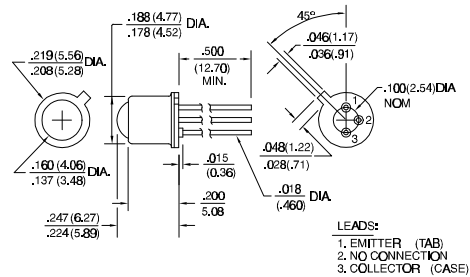
Tolerance	3 plc decimals	±0.005(0.12)
	2 plc decimals	±0.020(0.51)

### SD3410



DIM\_021.ds4

### SD5410



DIM\_21b.ds4

# SD3410/5410

## Silicon Photodarlington

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

PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Light Current SD3410-001 SD3410-002 SD3410-003 SD3410-004	$I_L$	0.6 2.0 4.0 8.0			mA	$V_{CE}=5\text{ V}$ $H=2\text{ mW/cm}^2$ (1)
Light Current SD5410-001 SD5410-002 SD5410-003	$I_L$	2.0 4.0 8.0			mA	$V_{CE}=5\text{ V}$ $H=0.2\text{ mW/cm}^2$ (1)
Collector Dark Current	$I_{CE0}$			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 SD3410 SD5410	$V_{CE(SAT)}$			1.1	V	$I_C=1\text{ mA}$ $H=2\text{ mW/cm}^2$ $H=0.2\text{ mW/cm}^2$
Angular Response (2) SD3410 SD5410	$\emptyset$		90 12		degr.	$I_F=\text{Constant}$
Rise And Fall Time	$t_r, t_f$		75		$\mu\text{s}$	$V_{CC}=5\text{ V}$ , $I_L=1\text{ mA}$ $R_L=100\text{ }\Omega$

#### Notes

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

### ABSOLUTE MAXIMUM RATINGS

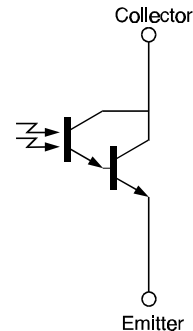
(25°C Free-Air Temperature unless otherwise noted)

Collector-Emitter Voltage	15 V
Emitter-Collector Voltage	5 V
Power Dissipation	150 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

- Derate linearly from 25°C free-air temperature at the rate of 1.43 mW/°C.

### SCHEMATIC



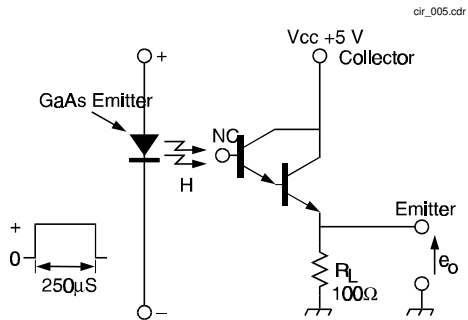
Honeywell reserves the right to make changes in order to improve design and supply the best products possible.

# Honeywell

# SD3410/5410

## Silicon Photodarlington

SWITCHING TIME TEST CIRCUIT



SWITCHING WAVEFORM

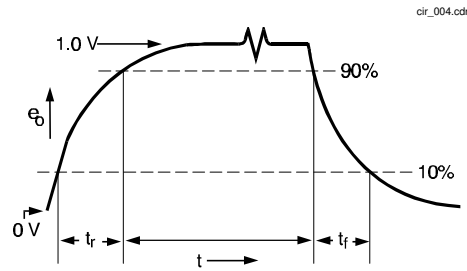


Fig. 1 Responsivity vs Angular Displacement (SD3410)

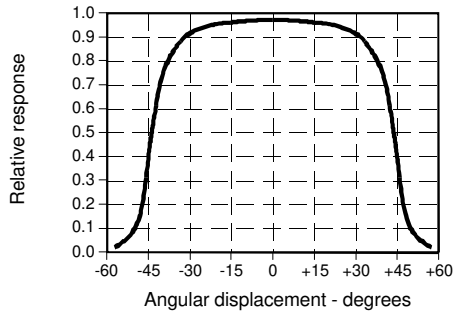


Fig. 2 Responsivity vs Angular Displacement (SD5410)

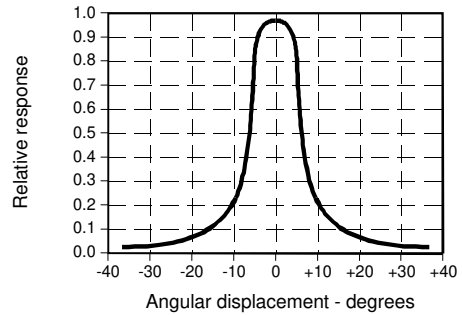


Fig. 3 Non-Saturated Switching Time vs Load Resistance

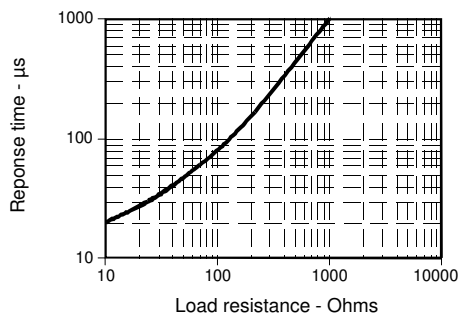
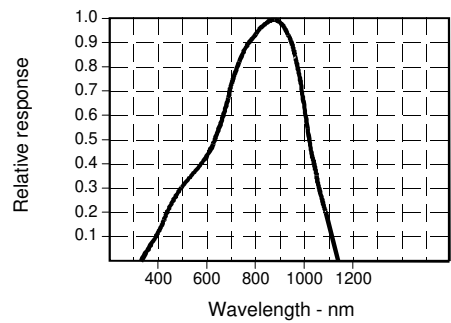


Fig. 4 Spectral Responsivity



All Performance Curves Show Typical Values

**SD3410/5410**  
Silicon Photodarlington

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