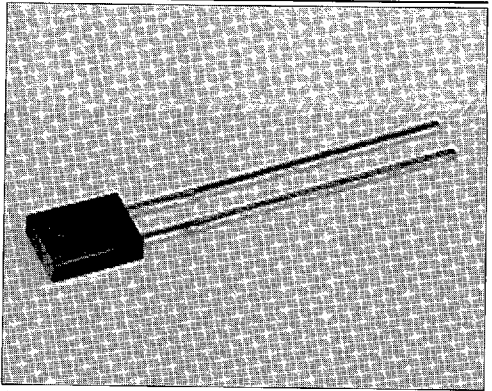


SDP8106

Silicon Photodarlington

FEATURES

- Side-looking plastic package
- 50° (nominal) acceptance angle
- Mechanically and spectrally matched to SEP8506 and SEP8706 infrared emitting diodes



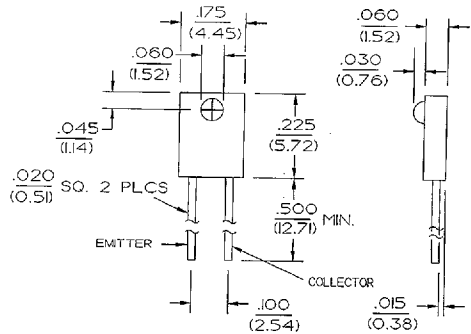
INFRA-79.TIF

DESCRIPTION

The SDP8106 is an NPN silicon photodarlington molded in a side-looking black plastic package to minimize effect of visible ambient light. The chip is positioned to accept radiation through a plastic lens from the side of the package.

OUTLINE DIMENSIONS in inches (mm)

Tolerance	3 plc decimals	$\pm 0.005(0.12)$
	2 plc decimals	$\pm 0.020(0.51)$



DIM_023.cdr

4551830 0022582 TT8

Honeywell

SDP8106

Silicon Photodarlington

ELECTRICAL CHARACTERISTIC (25°C unless otherwise noted)

PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Light Current SDP8106-001	I_L	1.0			mA	$V_{CE}=5\text{ V}$ $H=1\text{ mW/cm}^2$ (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	$I_C=1\text{ mA}$ $H=5\text{ mW/cm}^2$
Angular Response (2)	\emptyset		50		degr.	$I_F=\text{Constant}$
Rise And Fall Time	t_r, t_f		75		μs	$V_{CC}=5\text{ V}$, $I_L=1\text{ mA}$ $R_L=100\text{ }\Omega$

Notes

- 1. The radiation source is an IRED with a peak wavelength of 935 nm.
- 2. Angular response is defined as the total included angle between the half sensitivity points.

ABSOLUTE MAXIMUM RATINGS

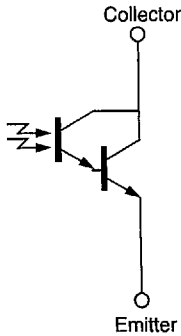
(25°C Free-Air Temperature unless otherwise noted)

Collector-Emitter Voltage	15 V
Emitter-Collector Voltage	5 V
Power Dissipation	100 mW (1)
Operating Temperature Range	-40°C to 85°C
Storage Temperature Range	-40°C to 85°C
Soldering Temperature (5 sec)	240°C

Notes

- 1. Derate linearly from 25°C free-air temperature at the rate of 0.78 mW/°C.

SCHEMATIC



4551830 0022583 934

Honeywell

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

SDP8106

Silicon Photodarlington

SWITCHING TIME TEST CIRCUIT

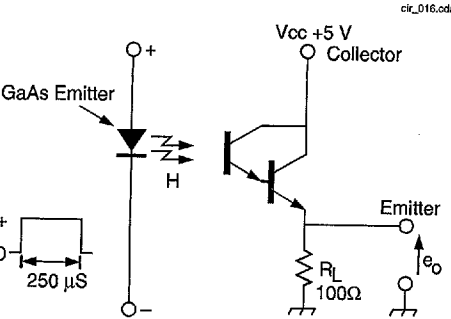


Fig. 1 Responsivity vs Angular Displacement

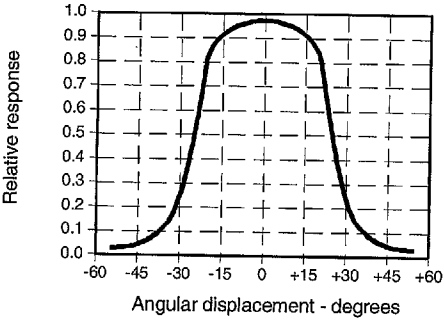
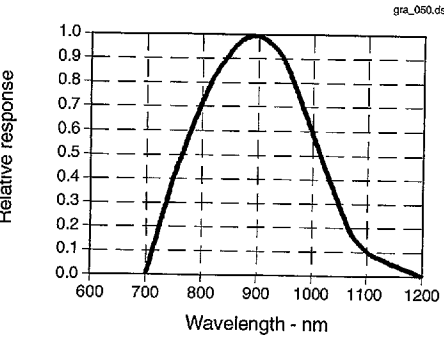


Fig. 3 Spectral Responsivity



SWITCHING WAVEFORM

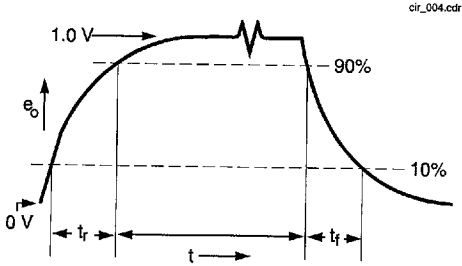
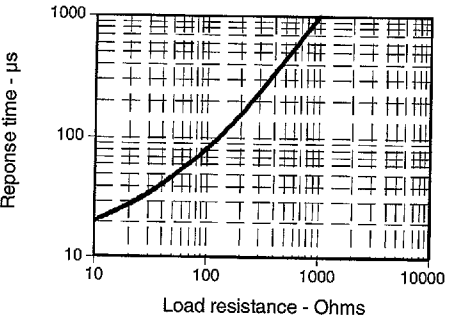


Fig. 2 Non-Saturated Switching Time vs Load Resistance



All Performance Curves Show Typical Values

4551830 0022584 870

Honeywell

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

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[Honeywell:](#)

[SDP8106-001](#)