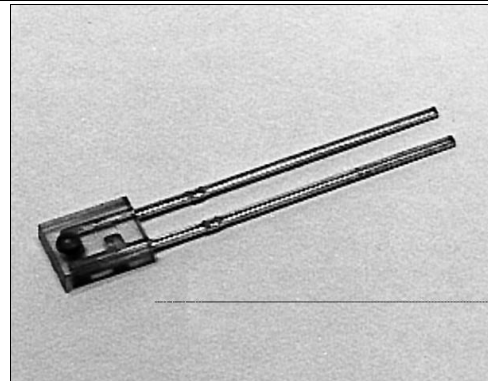


SDP8406

Silicon Phototransistor

FEATURES

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



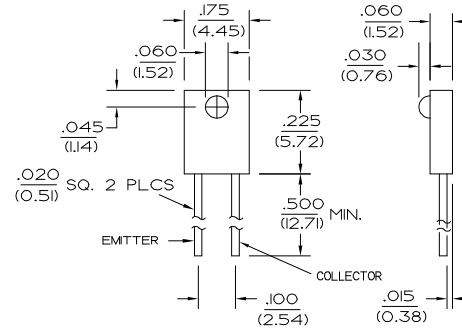
INFRA-21.TIF

DESCRIPTION

The SDP8406 is an NPN silicon phototransistor molded in a side-looking clear plastic package. 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_017.ds4

SDP8406

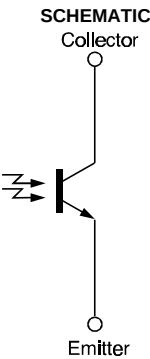
Silicon Phototransistor

ELECTRICAL CHARACTERISTICS (25°C unless otherwise noted)						
PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Light Current	I _L				mA	V _{CE} =5 V H=1 mW/cm ² (1)
SDP8406-001		0.15		1.90		
SDP8406-002		1.80		3.60		
SDP8406-003		3.40		6.50		
SDP8406-004		6.40		12.0		
Collector Dark Current	I _{CEO}			100	nA	V _{CE} =15 V, H=0
Collector-Emitter Breakdown Voltage	V _{(BR)CEO}	30			V	I _C =100 µA
Emitter-Collector Breakdown Voltage	V _{(BR)ECO}	5.0			V	I _E =100 µA
Collector-Emitter Saturation Voltage	V _{CE(SAT)}			0.4	V	I _C =I _L /8 H=1 mW/cm ²
Angular Response (2)	Ø		50		degr.	I _F =Constant
Rise And Fall Time	t _r , t _f		15		µs	V _{CC} =5 V, I _L =1 mA R _L =1000 Ω

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	30 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.



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

Honeywell

SDP8406

Silicon Phototransistor

SWITCHING TIME TEST CIRCUIT

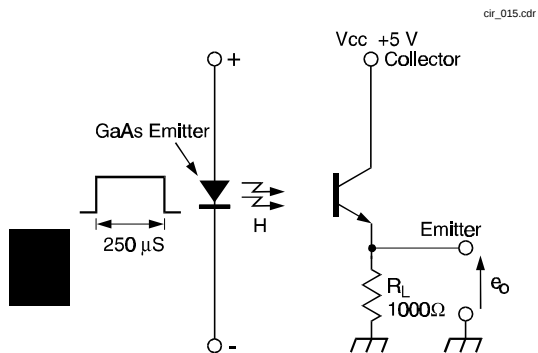


Fig. 1 Responsivity vs Angular Displacement

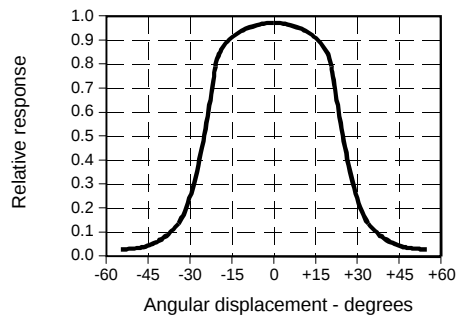
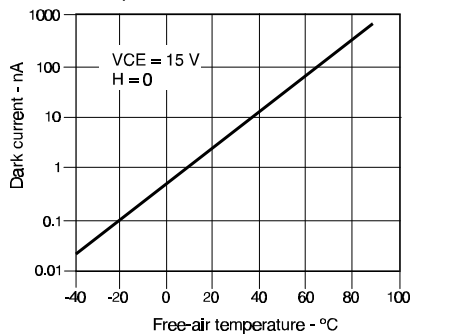


Fig. 3 Dark Current vs Temperature



SWITCHING WAVEFORM

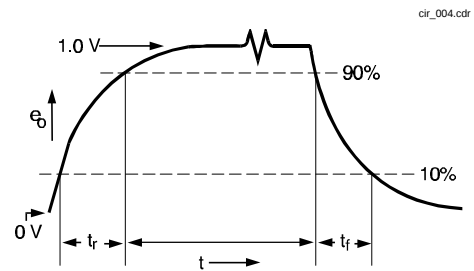


Fig. 2 Collector Current vs Ambient Temperature

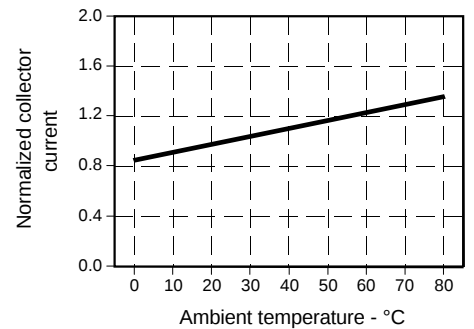
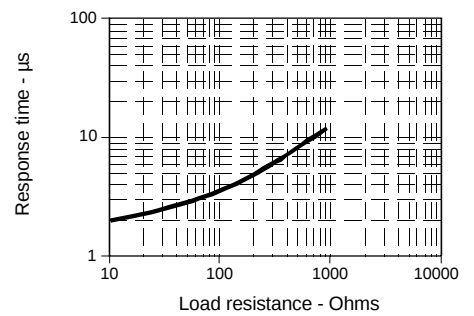


Fig. 4 Non-Saturated Switching Time vs Load Resistance



SDP8406

Silicon Phototransistor

Fig. 5 Spectral Responsivity

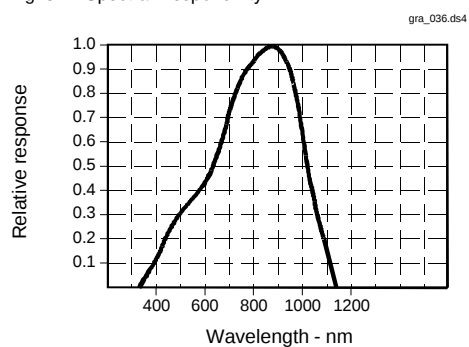
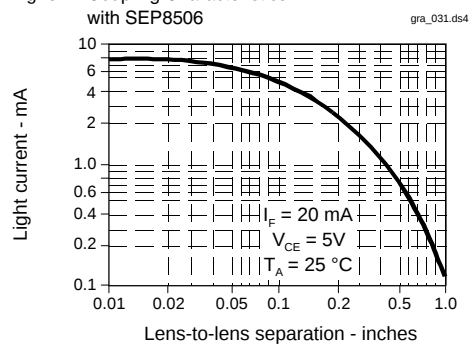


Fig. 6 Coupling Characteristics with SEP8506



All Performance Curves Show Typical Values