



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

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.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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

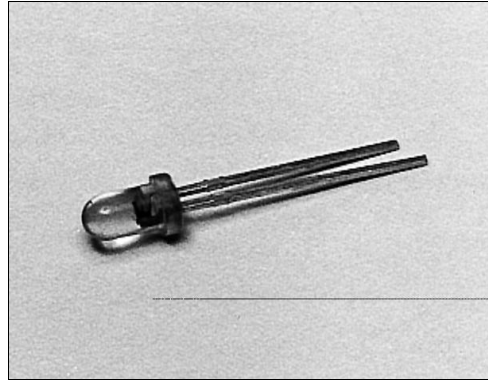


SDP8405

Silicon Phototransistor

FEATURES

- T-1 plastic package
- 20° (nominal) acceptance angle
- Consistent optical properties
- Wide sensitivity ranges
- Mechanically and spectrally matched to SEP8505 and SEP8705 infrared emitting diodes



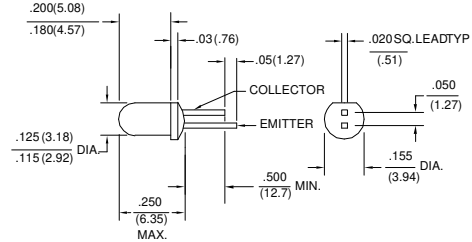
INFRA-22.TIF

DESCRIPTION

The SDP8405 is an NPN silicon phototransistor transfer molded in a T-1 clear plastic package. Transfer molding of this device assures superior optical centerline performance compared to other molding processes. Lead lengths are staggered to provide a simple method of polarity identification.

OUTLINE DIMENSIONS in inches (mm)

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



DIM_100.dwg

SDP8405

Silicon Phototransistor

ELECTRICAL CHARACTERISTICS (25°C unless otherwise noted)

PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Light Current SDP8405-001 SDP8405-002 SDP8405-003	I_L	1.00 7.00 12.0		14.0 24.0	mA	$V_{CE}=5\text{ V}$ $H=5\text{ mW/cm}^2$ ⁽¹⁾
Light Current SDP8405-011 SDP8405-012 SDP8405-013 SDP8405-014 SDP8405-015	I_L	0.16 0.16 0.32 0.64 1.25		0.46 0.92 1.85	mA	$V_{CE}=5\text{ V}$ $H=0.25\text{ mW/cm}^2$ ⁽²⁾
Collector Dark Current	I_{CEO}			100	nA	$V_{CE}=15\text{ V}, H=0$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	30			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 SDP8405-001 to -003 SDP8405-011 to -015	$V_{CE(SAT)}$			0.4	V	$I_C=I_L/8$ $H=5\text{ mW/cm}^2$ $H=0.25\text{ mW/cm}^2$
Angular Response ⁽³⁾	\emptyset		20		degr.	$I_F=\text{Constant}$
Rise And Fall Time	t_r, t_f		15		μs	$V_{CC}=5\text{ V}, I_L=1\text{ mA}$ $R_L=1000\text{ }\Omega$

Notes

1. The radiation source is a tungsten lamp operating at a color temperature of 2870°K.
2. The radiation source is an IRED with a peak wavelength of 935 nm.
3. Angular response is defined as the total included angle between the half sensitivity points.

ABSOLUTE MAXIMUM RATINGS

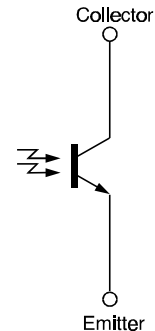
(25°C Free-Air Temperature unless otherwise noted)

Collector-Emitter Voltage	30 V
Emitter-Collector Voltage	5 V
Power Dissipation	70 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 0.18 mW/°C.

SCHEMATIC



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

Honeywell

SDP8405

Silicon Phototransistor

SWITCHING TIME TEST CIRCUIT

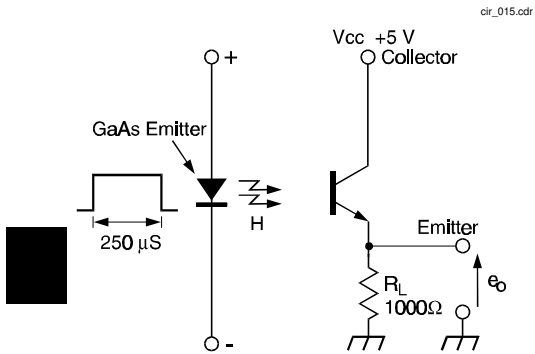


Fig. 1 Responsivity vs Angular Displacement

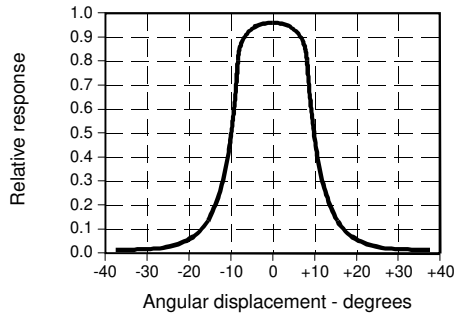
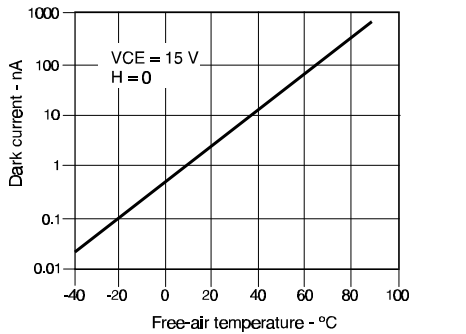


Fig. 3 Dark Current vs Temperature



SWITCHING WAVEFORM

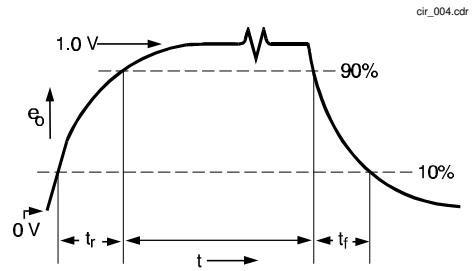


Fig. 2 Collector Current vs Ambient Temperature

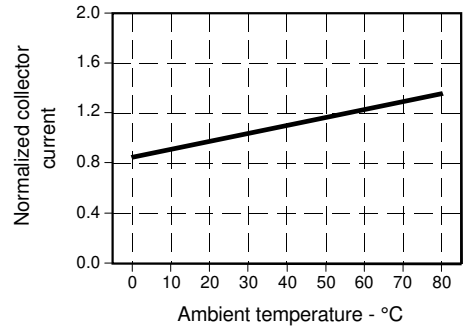
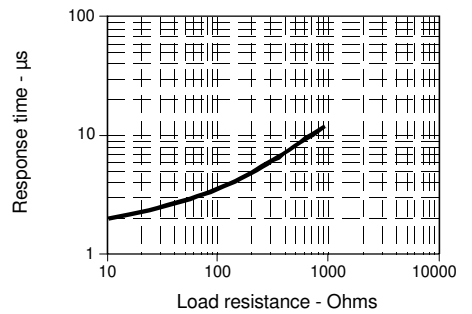


Fig. 4 Non-Saturated Switching Time vs Load Resistance

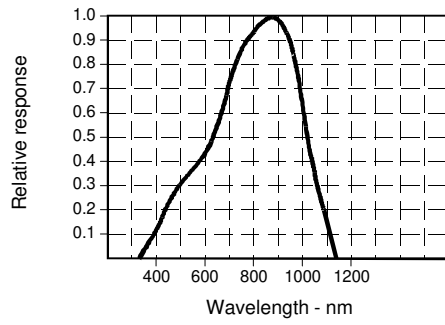


SDP8405

Silicon Phototransistor

Fig. 5 Spectral Responsivity

gra_036.ds4



All Performance Curves Show Typical Values

Fig. 6 Coupling Characteristics with SEP8505

gra_029.ds4

