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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.

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!



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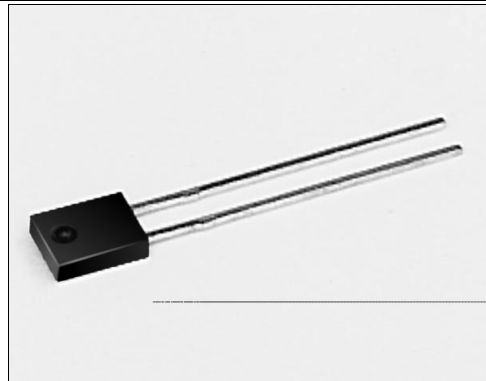


SDP8106

Silicon Photodarlington

FEATURES

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



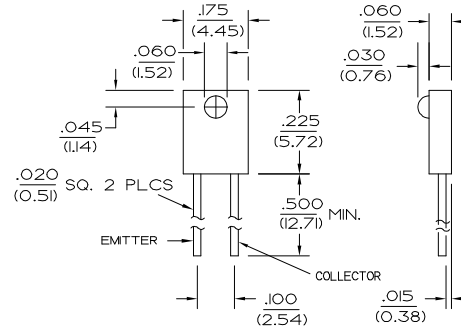
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DESCRIPTION

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



DIM_023.cdr

SDP8106

Silicon Photodarlington

ELECTRICAL CHARACTERISTICS (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

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

ABSOLUTE MAXIMUM RATINGS

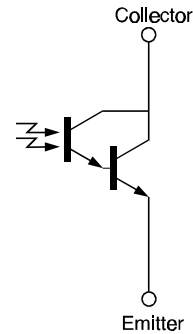
(25°C Free-Air Temperature unless otherwise noted)

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

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

SCHEMATIC



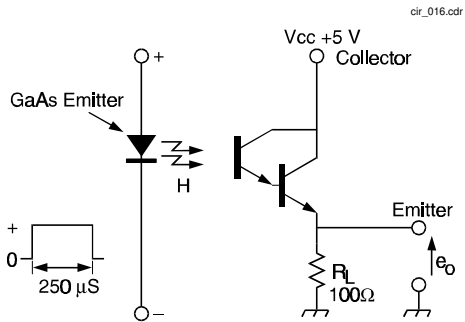
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SDP8106

Silicon Photodarlington

SWITCHING TIME TEST CIRCUIT



SWITCHING WAVEFORM

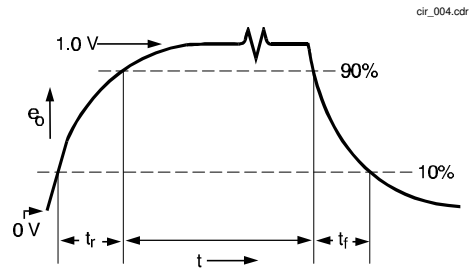


Fig. 1 Responsivity vs Angular Displacement

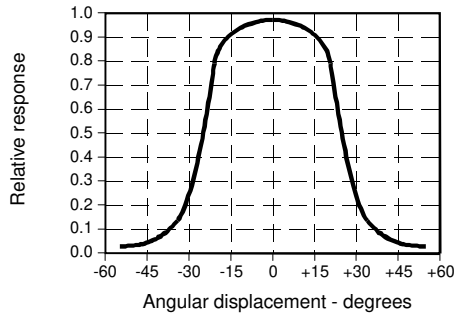


Fig. 2 Non-Saturated Switching Time vs Load Resistance

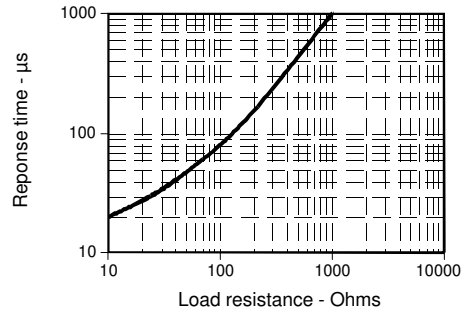
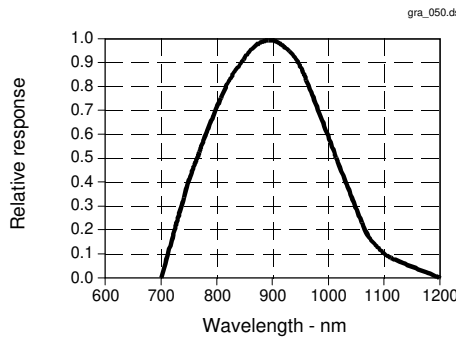


Fig. 3 Spectral Responsivity



All Performance Curves Show Typical Values

SDP8106
Silicon Photodarlington



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