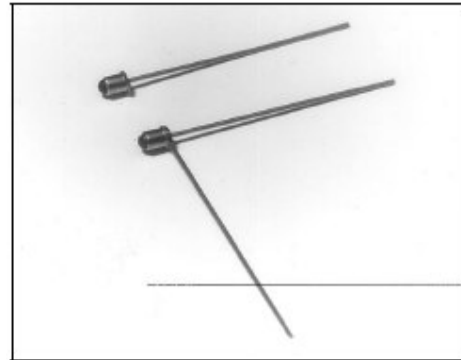


## SD1440

silicon phototransistor

characteristic :

- Compact, coaxial package with metal shell
- 24° (rated) Angle of acceptance
- Wide sensitivity range
- Wide operating temperature range (-55°C to +125°C)
- Mechanical and spectral matching with infrared LEDs from SE1450 and SE1470.



INFRA-63.TIF

description :

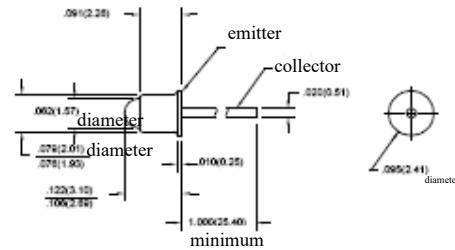
The SD1440 is a silicon phototransistor housed in a coaxial metal package with glass lenses. The package features either a tab or second lead for mounting on the housing, which serves as optional functionality for (SD1440-XXXL). Both leads are flexible and can be shaped to accommodate various installation configurations.

Dimensions: inches (mm)

Tolerance: 3 plc decimals  $\pm 0.005$  (0.12)

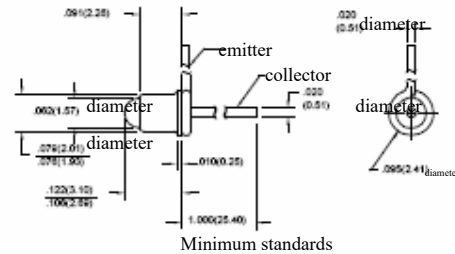
2 plc decimals  $\pm 0.020$  (0.51)

### SD1440-XXX



DIM\_12a.ds4

### SD1440-XXXL



DIM\_12b.ds4

Electrical characteristics (25°C unless otherwise stated)

parameter	symbol	Minimum value	Standard value	Maximum value	unit	test condition
light current SD1440-001, SD1440-001L SD1440-002, SD1440-002L SD1440-003, SD1440-003L SD1440-004, SD1440-004L	$I_L$	0.7			mA	$V_{CE}=5V$ $H=5 \text{ mW/cm}^2$ <sup>(1)</sup>
Collecting electrode dark current	$I_{CEO}$			100	nA	$V_{CE}=10V, H=0$
Electrode-emitter breakdown voltage	$V_{(BR)CEO}$	30			V	$I_C=100\mu A$
Emitter-collector breakdown voltage	$V_{(BR)ECO}$	5.0			V	$I_E=100\mu A$
Electrode collector-emitter saturation voltage	$V_{CE(SAT)}$			0.4	V	$I_C=0.4 \text{ mA}$ $H=5 \text{ mW/cm}^2$
Angle response <sup>(2)</sup>	$\Phi$		24		° ( linear measure )	$I_F = \text{constant}$
Time of rise and fall	$t_r, t_f$		15		$\mu s$	$V_{CC}=5V, I_L=1 \text{ mA}$ $R_L=1000 \text{ k}\Omega$

pour :

1. The radiation source is a tungsten lamp operating at a color temperature of 2870°K.
2. The definition of angular response refers to the total angles included between the semi-sensitivity points.

## Absolute maximum rating

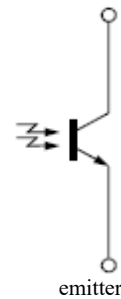
(If no other explanation is given, the atmospheric temperature is 25°C)

Cathode-emitter voltage	30V
Emitter-collector voltage	5V
power dissipation	75 mW <sup>(1)</sup>
operating temperature range	-55°C to 125°C
Storage temperature range	-65°C to 150
Welding temperature (10 seconds)	°C 260°C

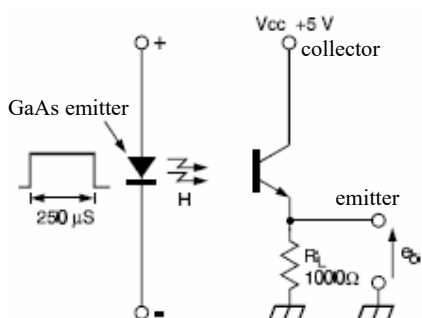
pour :

1. From the atmospheric temperature of 25°C to a linear decrease of 0.71 mW/°C.

schematic  
diagram co-  
llector

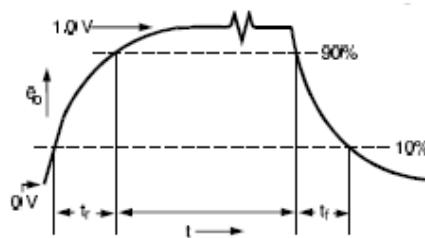


Switch time test circuit



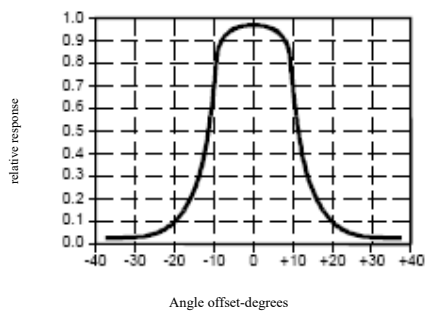
cir\_015.cdr

Switching waveform



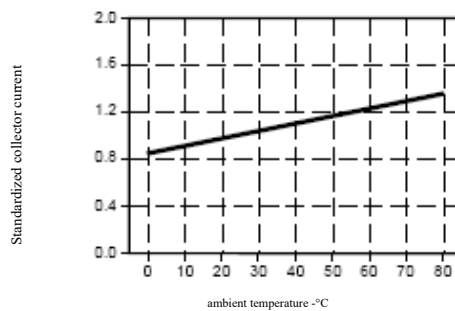
cir\_004.cdr

Figure 1 Response to Angle of Bias



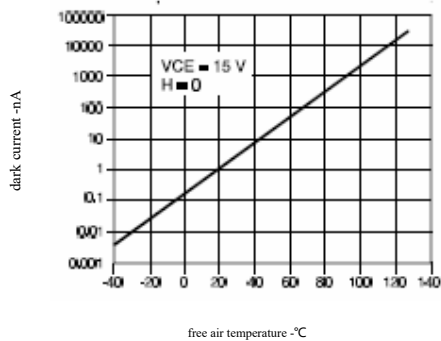
gra\_051.ds4

Figure 2. Relationship Between Collector Current and Ambient Temperature



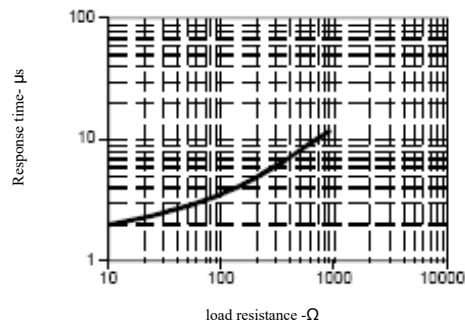
gra\_039.ds4

Figure 3. Relationship Between Dark Current and Temperature



gra\_303.cdr

Figure 4. Relationship Between Unsaturated Switching Time and Load Resistance



gra\_041.ds4

Figure 5. Spectral Responsivity

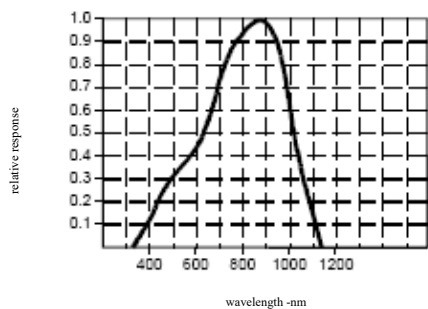
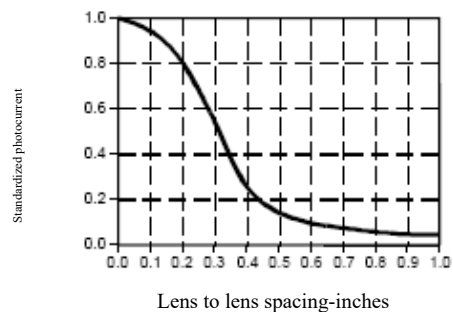


Figure 6. coupling characteristics of SE1450 gra\_036.ds4

gra\_006.ds4



All performance curves are expressed as standard values

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