

## ASDL-6270

High Performance Silicon NPN Phototransistor in Dark T-1 $\frac{3}{4}$  Package



## Data Sheet

### Description

ASDL-6270 is a silicon phototransistor in a standard T-1 $\frac{3}{4}$  molded package that optically filters the visible light, hence it is not sensitive to ambient light interference. It has high sensitivity, high speed and low dark current. The collector is denoted by a flat on the packaging diagram and the shorter of the two leads.

### Features

- T-1 $\frac{3}{4}$  package
- Special Dark Lens that Filter Visible Light
- High Sensitivity
- Narrow Viewing Angle
- Low Cost
- Lead-Free & ROHS compliant
- Available in Tape & Reel

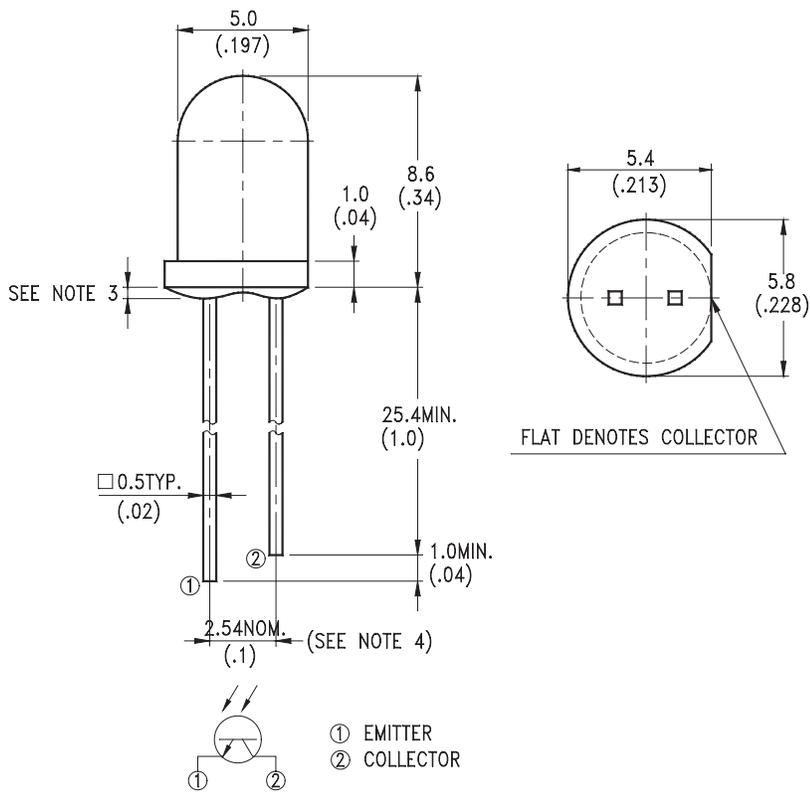
### Applications

- Suitable for detectors of Infrared Applications
- Photo Interrupter
- Industrial Electronics & Equipment
- Consumer Electronics

## Ordering Information

Part Number	Lead Form	Color	Packaging	Shipping Option
ASDL-6270-D22	Straight	Dark	Tape & Reel	4000pcs
ASDL-6270-D31			Bulk	8000pcs / Carton

## Package Dimensions



### Notes:

- All dimensions are in millimeters (inches)
- Tolerance is + 0.25mm (.010") unless otherwise noted
- Protruded resin under flange is 1.5mm (.059") max
- Lead spacing is measured where leads emerge from package
- Specifications are subject to change without notice.

### Absolute Maximum Ratings at TA=25°C

Parameter	Symbol	Min.	Max	Unit
Power Dissipation	P <sub>DISS</sub>		100	mW
Collector Emitter Voltage	V <sub>CEO</sub>		30	V
Emitter Collector Voltage	V <sub>ECO</sub>		5	V
Operating Temperature	T <sub>O</sub>	-40	85	°C
Storage Temperature	T <sub>S</sub>	-55	100	°C
Junction temperature	T <sub>J</sub>		110	°C
Lead Soldering Temperature [ .6mm (0.063") From Body ]		260°C for 5 seconds		

### Electrical Characteristics at 25°C

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Collector-Emitter Breakdown Voltage	V <sub>(BR)CEO</sub>	30			V	I <sub>C</sub> = 1mA E <sub>e</sub> = 0mW/cm <sup>2</sup>
Emitter-Collector Breakdown Voltage	V <sub>(BR)ECO</sub>	5			V	I <sub>e</sub> = 100μA E <sub>e</sub> = 0mW/cm <sup>2</sup>
Collector Emitter Saturation Voltage	V <sub>CE(SAT)</sub>		0.1	0.4	V	I <sub>C</sub> = 100μA E <sub>e</sub> = 1mW/cm <sup>2</sup>
Collector Dark Current	I <sub>CEO</sub>			100	nA	V <sub>CE</sub> = 10V E <sub>e</sub> = 0mW/cm <sup>2</sup>
Thermal Resistance, Junction to Pin	R <sub>θJP</sub>	-	350		°C/W	

### Optical Characteristics at 25°C

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Viewing Angle	2θ <sub>1/2</sub>		20		Deg	
Wavelength of Peak sensitivity	λ <sub>PK</sub>		900		nm	
Spectral BandWidth	Δλ	700	900	1100	nm	
Rise Time	t <sub>r</sub>		10		μs	V <sub>CC</sub> = 5V I <sub>C</sub> = 1mA R <sub>L</sub> = 1KΩ
Fall Time	t <sub>f</sub>		15		μs	V <sub>CC</sub> = 5V I <sub>C</sub> = 1mA R <sub>L</sub> = 1KΩ
On State Collector Current	I <sub>C(ON)</sub>	2.4		7	mA	V <sub>CE</sub> = 5V E <sub>e</sub> = 1mW/cm <sup>2</sup> λ = 940nm

Typical Electrical/Optical Characteristics Curves ( $T_A=25^\circ\text{C}$  unless otherwise indicated)

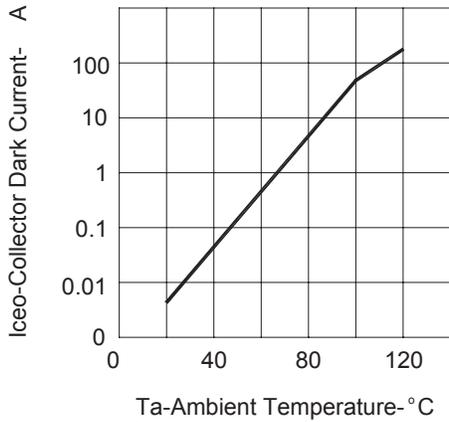


Figure 1. COLLECTOR DARK CURRENT VS AMBIENT TEMPERATURE

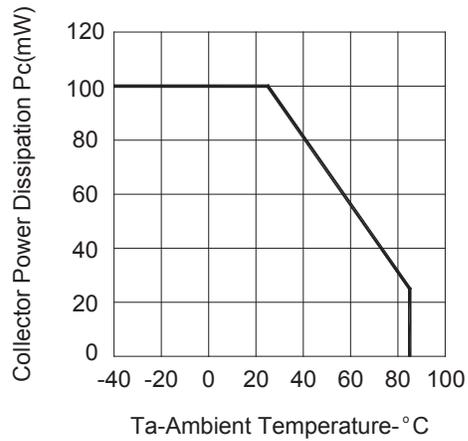


Figure 2. COLLECTOR POWER DISSIPATION VS AMBIENT TEMPERATURE

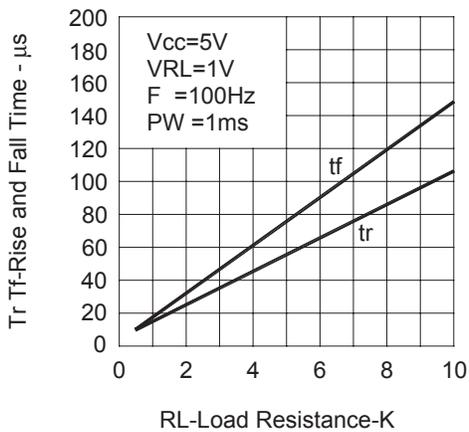


Figure 3. RISE AND FALL TIME VS LOAD RESISTANCE

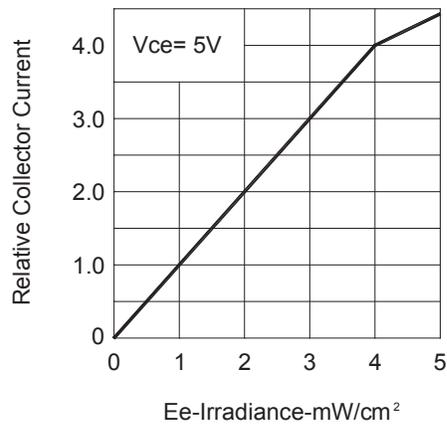


Figure 4. RELATIVE COLLECTOR CURRENT VS IRRADIANCE

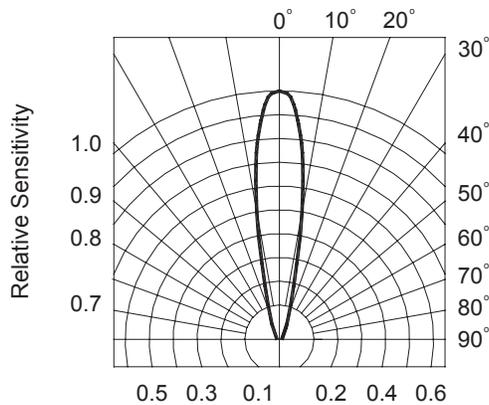


Figure 5. SENSITIVITY DIAGRAM

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