

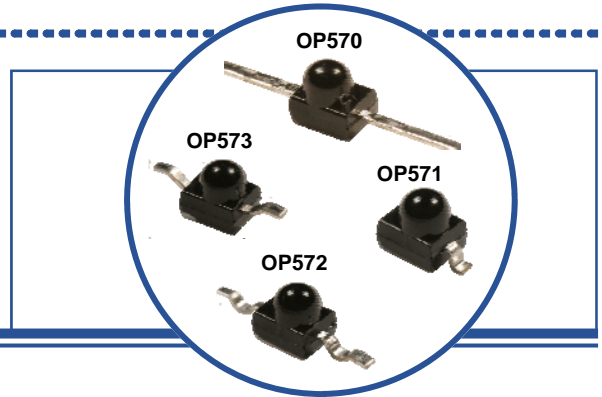
# Silicon Phototransistor

## OP570 Series



### Features:

- SMD plastic package
- High photo sensitivity
- Fast response time
- Choice of four lead configurations
- IR transmissive plastic package



### Description:

Each device in this series is an NPN silicon phototransistor mounted in an opaque plastic SMD package, with an integral molded lens that enables a narrow acceptance angle and a higher collector current than devices without a lense.

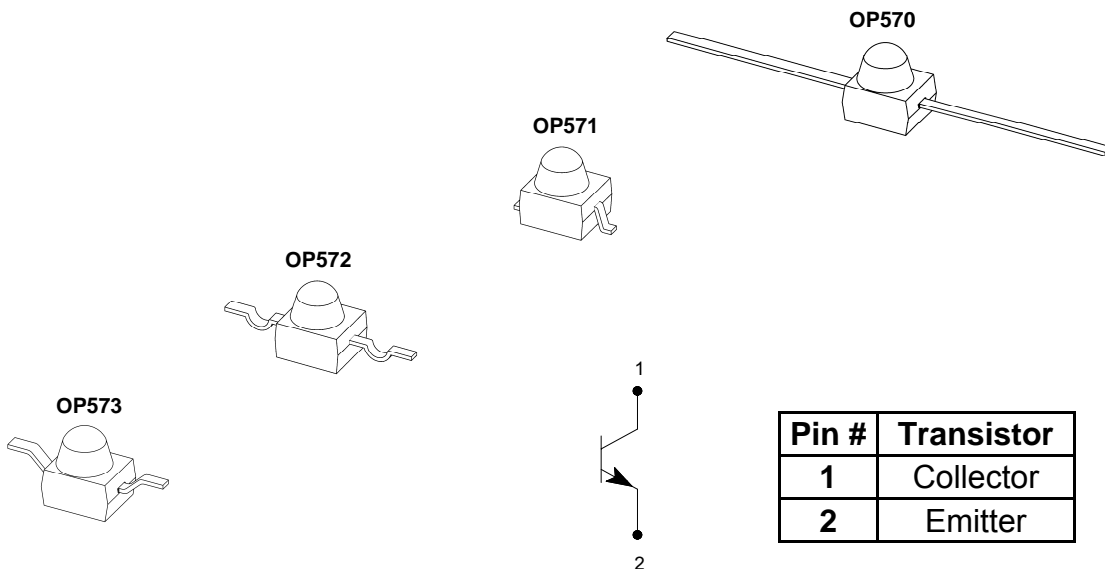
The **OP570** series has four lead configurations and is compatible with most automated mounting equipment. *The OP570 series is mechanically and spectrally matched to the OP270 series infrared LEDs.*

*Please refer to Application Bulletins 208 and 210 for additional design information and reliability (degradation) data.*

### Applications:

- Non-contact position sensing
- Datum detection
- Machine automation
- Optical encoders
- IrDA
- Reflective and transmissive sensors

Ordering Information			
Part Number	Sensor	Viewing Angle	Lead Length
OP570	Phototransistor	25°	Axial
OP571			Gull Wing
OP572			Yoke
OP573			Rev. Gull



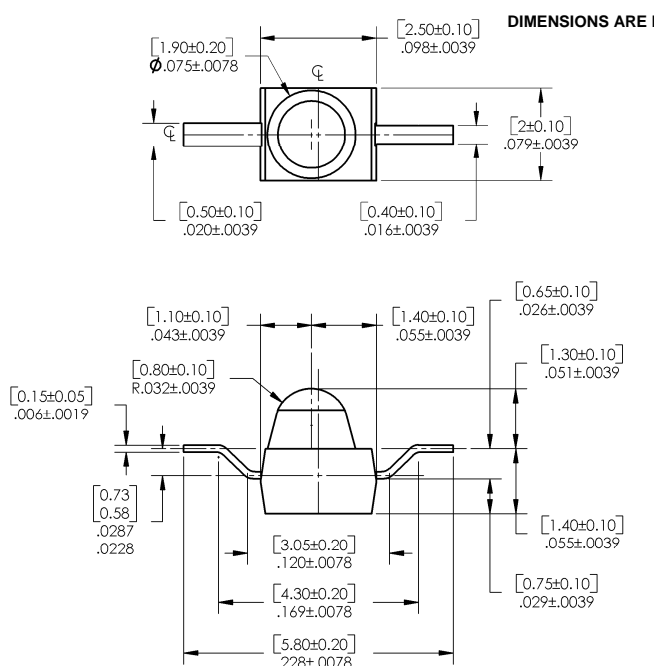
Pin #	Transistor
1	Collector
2	Emitter



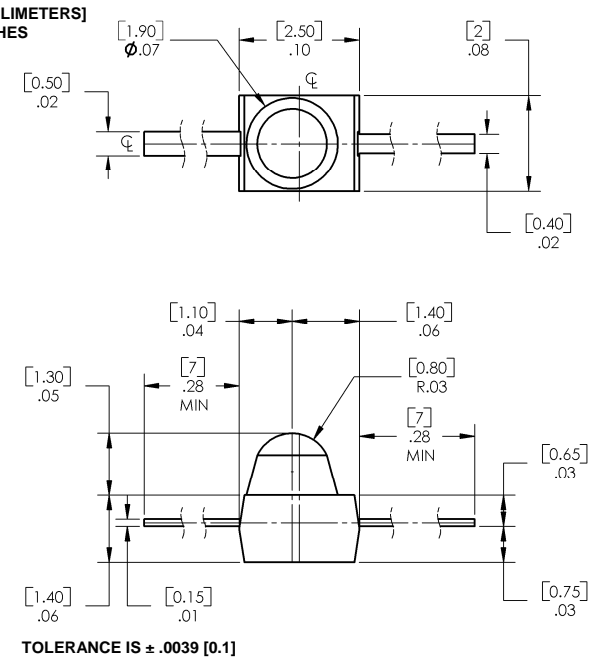
RoHS

OPTEK reserves the right to make changes at any time in order to improve design and to supply the best product possible.

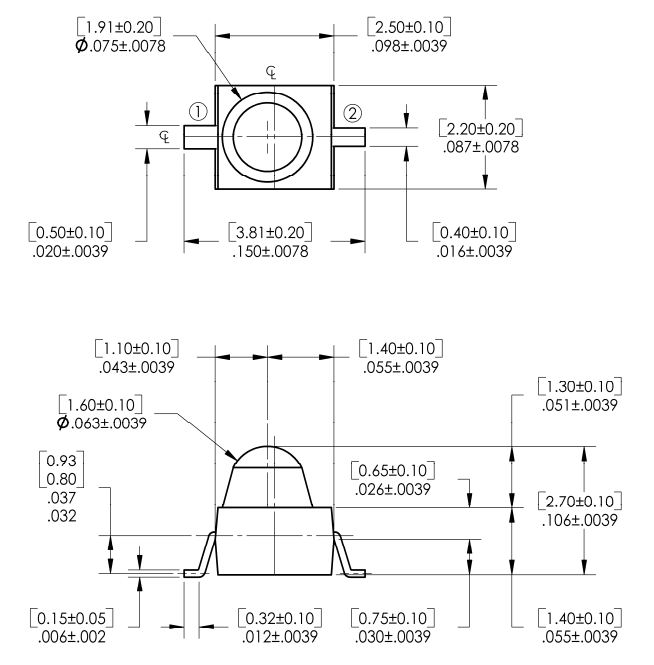
### OP573



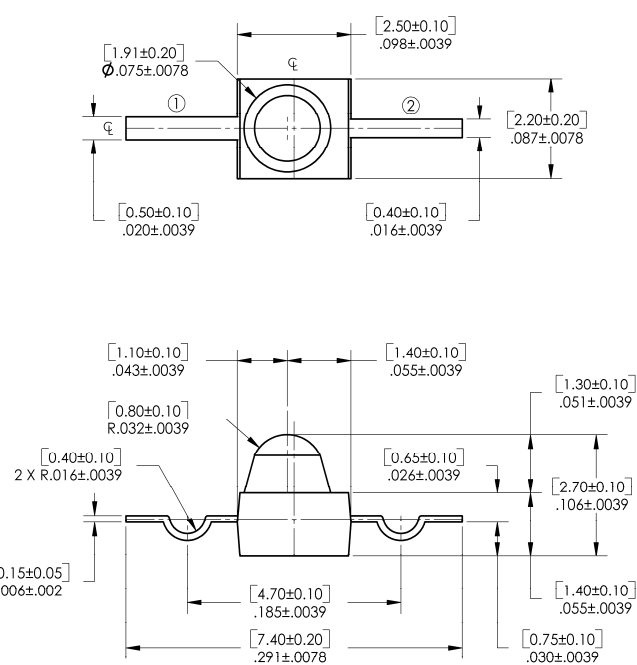
### OP570



### OP571



### OP572



Pin #	Transistor
1	Collector
2	Emitter

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**Absolute Maximum Ratings** ( $T_A=25^\circ\text{C}$  unless otherwise noted)

Storage Temperature Range	-40° C to +85° C
Operating Temperature Range	-25° C to +85° C
Collector-Emitter Voltage	30 V
Emitter-Collector Voltage	5 V
Collector Current	20 mA
Lead Soldering Temperature [1/16 inch (1.6 mm) from case for 5 seconds with soldering iron]	260° C <sup>(1)</sup>
Power Dissipation	130 mW <sup>(2)</sup>

Notes:

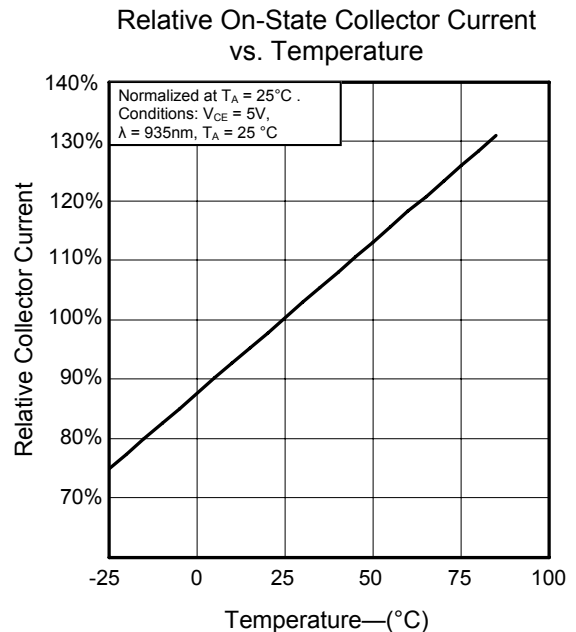
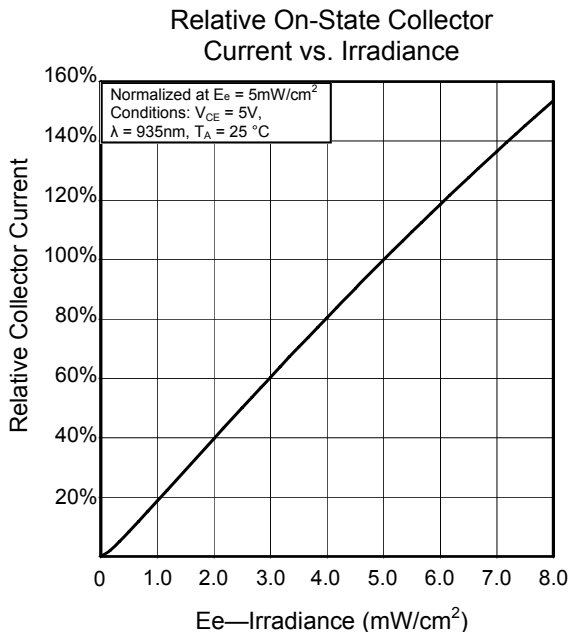
1. Solder time less than 5 seconds at temperature extreme.
2. Derate linearly at 2.17 mW/° C above 25° C.

**Electrical Characteristics** ( $T_A = 25^\circ\text{C}$  unless otherwise noted)

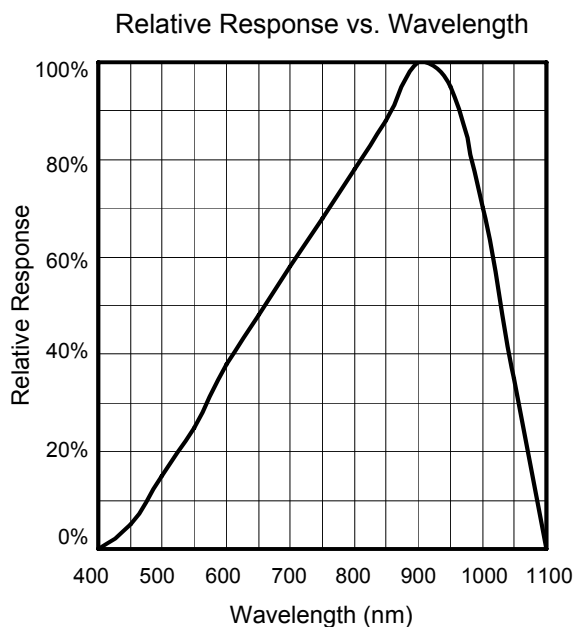
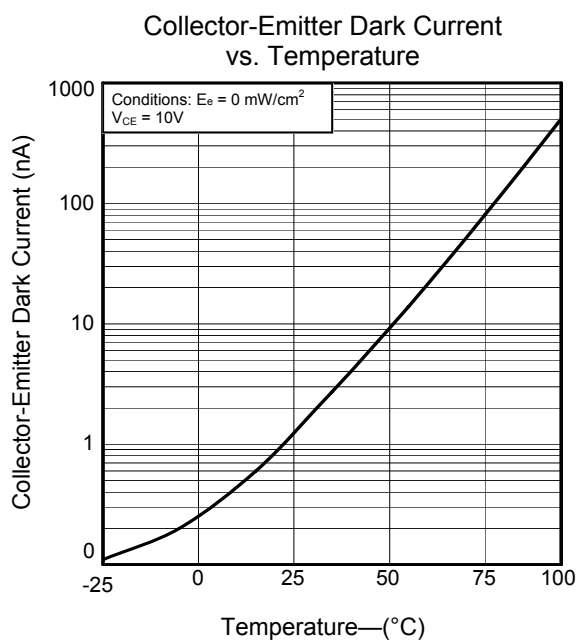
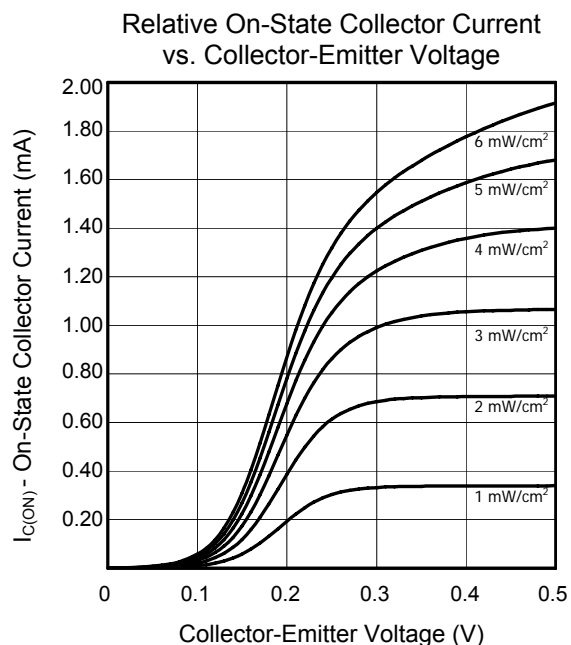
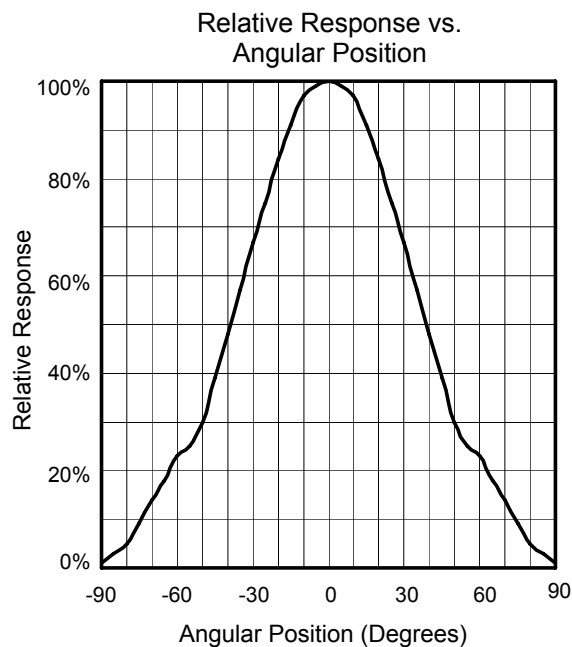
SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
<b>Input Diode</b>						
$I_C$ (ON)	On-State Collector Current	2.5	-	-	mA	$V_{CE} = 5.0\text{ V}, E_E = 5.0\text{ mW/cm}^2$ <sup>(1)</sup>
$V_{CE(SAT)}$	Forward Voltage	-	-	0.4	V	$I_C = 100\ \mu\text{A}, E_E = 2.0\text{ mW/cm}^2$ <sup>(1)</sup>
$I_{CEO}$	Reverse Current	-	-	100	nA	$V_{CE} = 5.0\text{ V}, E_E = 0$ <sup>(2)</sup>
$V_{BR(CEO)}$	Wavelength at Peak Emission	30	-	-	V	$I_C = 100\ \mu\text{A}$
$V_{(BR)ECO}$	Emission Angle at Half Power Points	5	-	-	V	$I_E = 100\ \mu\text{A}$

Notes:

1. Light source is an unfiltered GaAl LED with a peak emission wavelength of 935nm and a radiometric intensity level which varies less than 10% over the entire lens surface of the phototransistor being tested.
2. To calculate typical collector dark current in  $\mu\text{A}$ , use the formula  $I_{CEO} = 10^{(0.04 T_A - 3.4)}$  where  $T_A$  is the ambient temperature in ° C.



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