

Silicon Phototransistor in SMD Plastic Package

OP570 Series

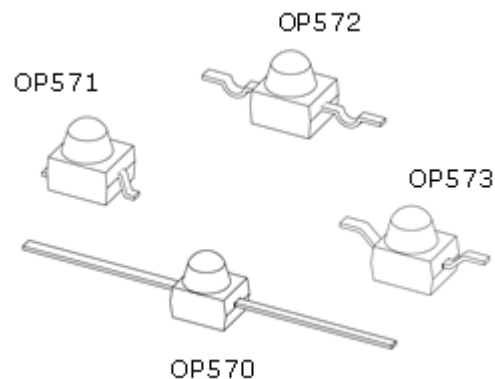
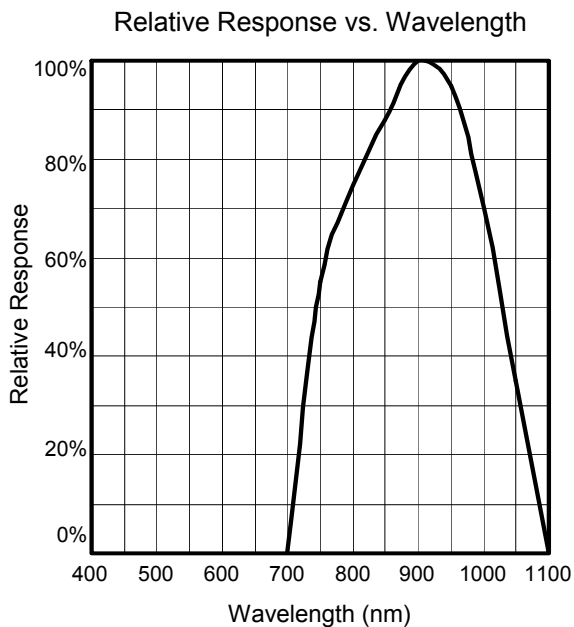
- High Photo Sensitivity
- Fast Response Time
- Four Lead Configurations
- IR Transmissive Plastic Package



The OP570 series are NPN silicon phototransistors mounted in an opaque plastic SMT packages. The devices incorporate an integral molded lens which enables a narrow acceptance angle and higher collector currents than devices without lenses. This series is available with four lead configurations and is compatible with most automated mounting equipment. The OP570 series is mechanically and spectrally matched to the OP270 series infra-red LEDs.

Applications

- Non-Contact Position Sensing
- Datum detection
- Machine automation
- Optical encoders
- IrDA
- Reflective and Transmissive Sensors



RoHS

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

OPTEK Technology Inc.— 1645 Wallace Drive, Carrollton, Texas 75006
Phone: (800) 341-4747 FAX: (972) 323- 2396 sensors@optekinc.com www.optekinc.com



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SMD Silicon Phototransistor

OP570 Series



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
Lead Soldering Temperature	260° C ⁽¹⁾
Collector-Emitter Voltage	30 V
Emitter-Collector Voltage	5 V
Collector Current	20 mA
Power Dissipation	130 mW ⁽²⁾

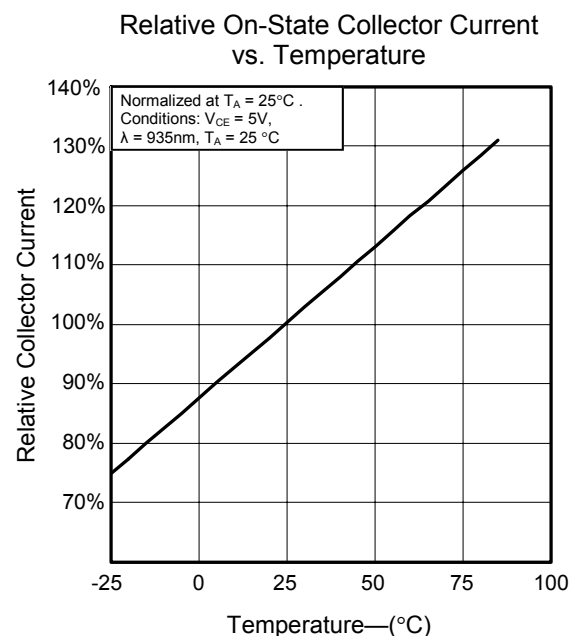
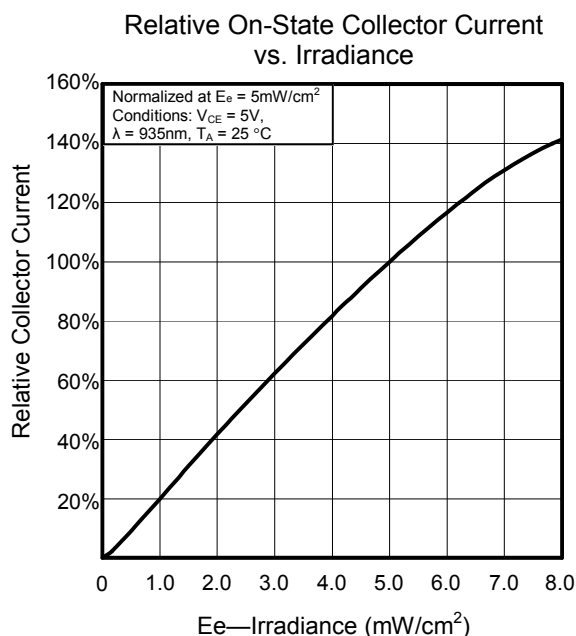
Notes:

1. Solder time less than 5 seconds at temperature extreme.
2. De-rate 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	CONDITIONS
$I_{C(ON)}$	On-State Collector Current	2.5			mA	$V_{CE} = 5.0\text{V}$, $E_e = 5.0\text{mW/cm}^2$ ⁽³⁾
$V_{CE(SAT)}$	Collector-Emitter Saturation Voltage			0.4	V	$I_C = 100\mu\text{A}$, $E_e = 2.0\text{mW/cm}^2$ ⁽³⁾
I_{CEO}	Collector-Emitter Dark Current			100	nA	$V_{CE} = 5.0\text{V}$, $E_e = 0$ ⁽⁴⁾
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	30			V	$I_C = 100\mu\text{A}$
$V_{(BR)ECO}$	Emitter-Collector Breakdown Voltage	5			V	$I_E = 100\mu\text{A}$

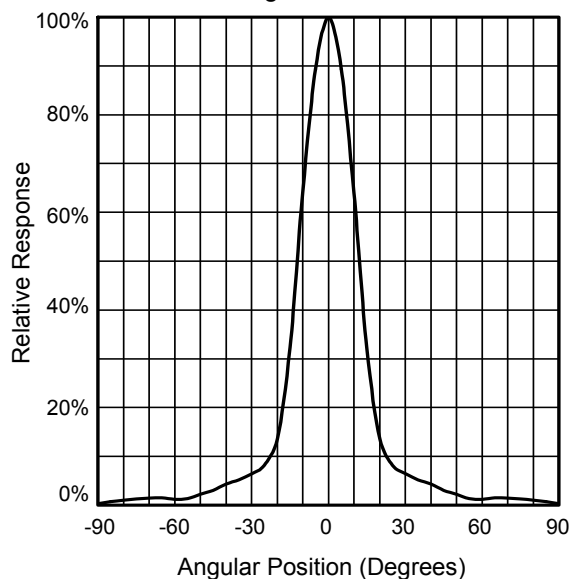
3. Light source is an unfiltered GaAl LED with a peak emission wavelength of 935nm and a radiometric intensity level which varies less than 10% over the entire lens surface of the phototransistor being tested.
4. To Calculate typical collector dark current in μA , use the formula $I_{CEO} = 10^{(0.04 T_A - 3/4)}$ where T_A is the ambient temperature in ° C.



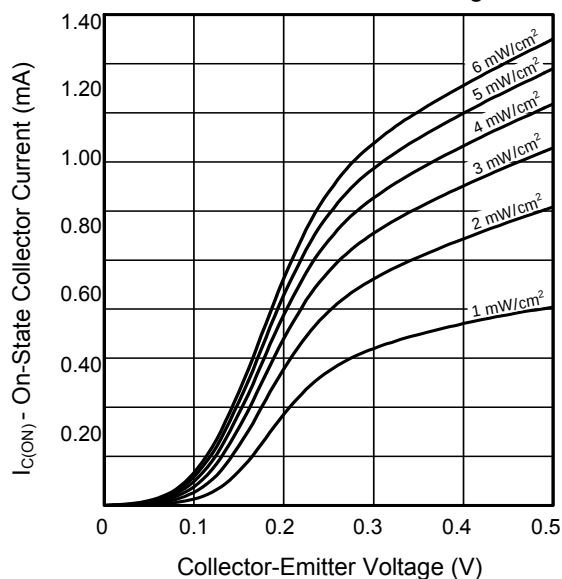
SMD Silicon Phototransistor

OP570 Series

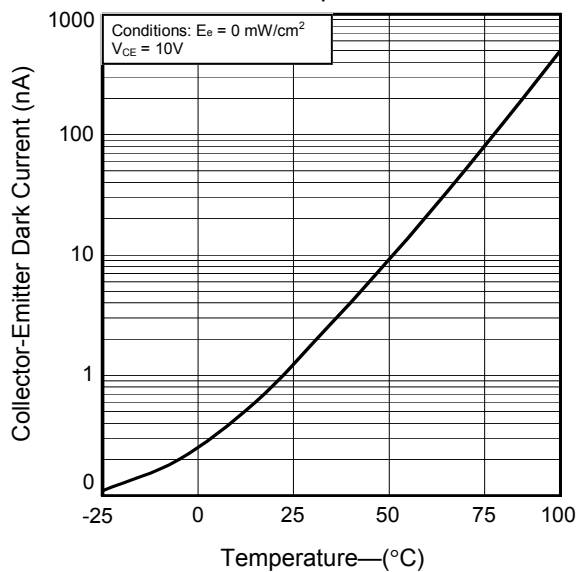
Relative Response vs.
Angular Position



Relative On-State Collector Current
vs. Collector-Emitter Voltage



Collector-Emitter Dark Current
vs. Temperature

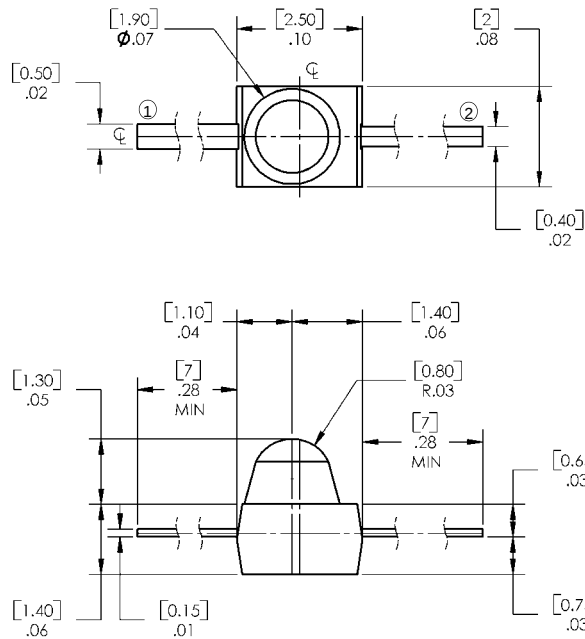


SMD Silicon Phototransistor

OP570 Series



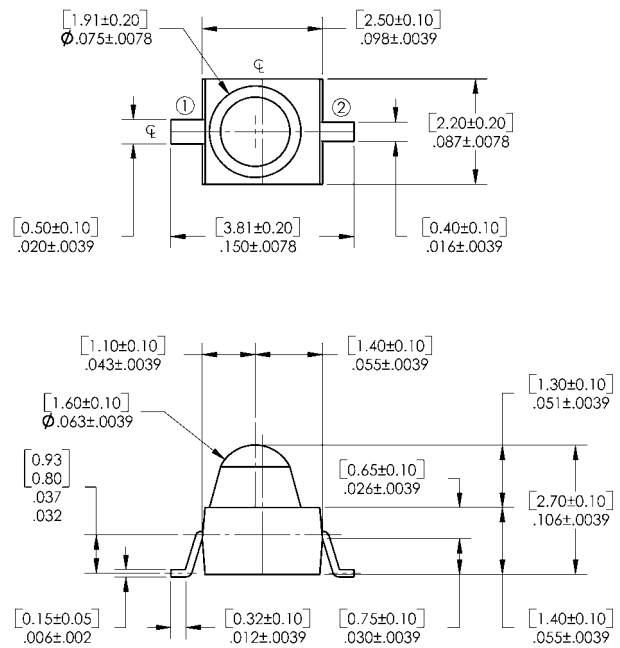
OP270



DIMENSIONS ARE IN INCHES AND [MILLIMETERS].
TOLERANCE IS $\pm .0039$ [0.1]

PIN	PTR
1	C
2	E

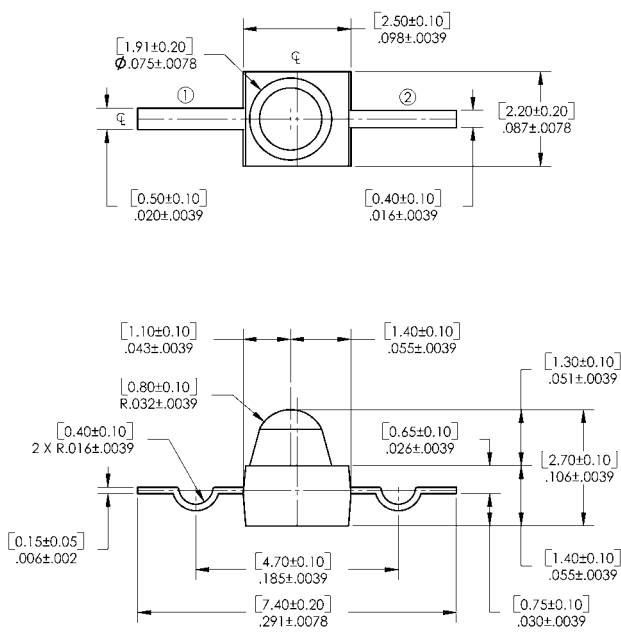
OP271



DIMENSIONS ARE IN INCHES AND [MILLIMETERS].

PIN	PTR
1	C
2	E

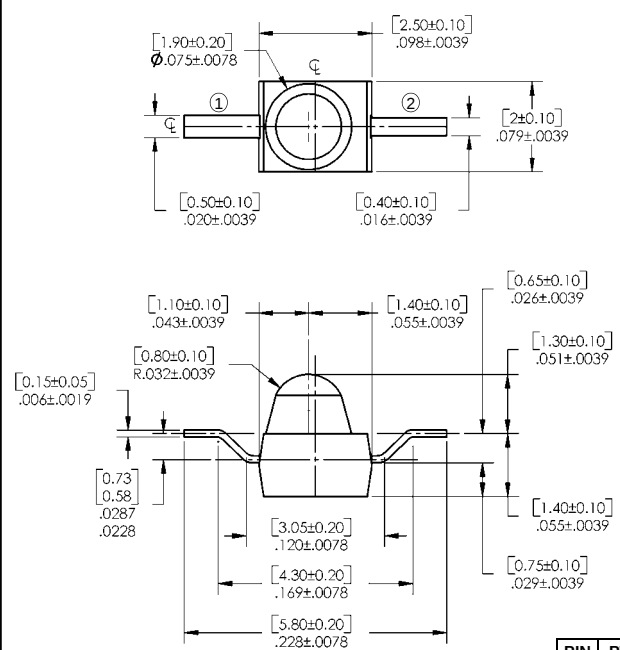
OP272



DIMENSIONS ARE IN INCHES AND [MILLIMETERS].

PIN	PTR
1	C
2	E

OP273



DIMENSIONS ARE IN INCHES AND [MILLIMETERS].

PIN	PTR
1	C
2	E