

# NPN Silicon Phototransistor

OP800A, OP800B, OP800C



## Features:

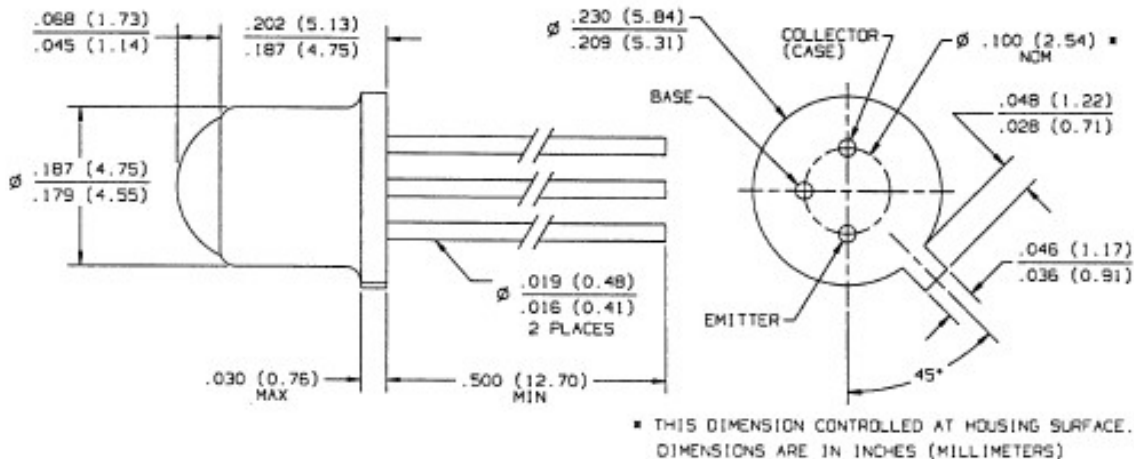
- Narrow receiving angle
- Suitable for applications from 400nm to 1100
- Variety of sensitivity ranges
- TO-18 hermetically sealed package
- Enhanced temperature range
- Base lead connection

## Description:

The OP800 Series device consist of a NPN silicon phototransistor mounted in a hermetically sealed package. The narrow receiving angle provides excellent on-axis coupling. TO-18 package offer high power dissipation and hostile environment operation. The base lead is bonded to enable conventional transistor biasing.

## Applications:

- Industrial and commercial electronics
- Distance sensing
- Harsh environment
- Photointerrupters



RoHS

## General Note

TT Electronics reserves the right to make changes in product specification without notice or liability. All information is subject to TT Electronics' own data and is considered accurate at time of going to print.

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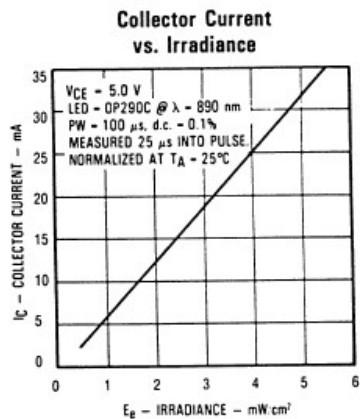
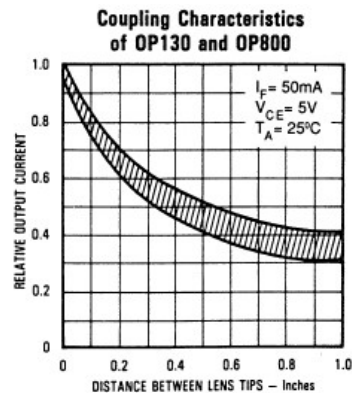
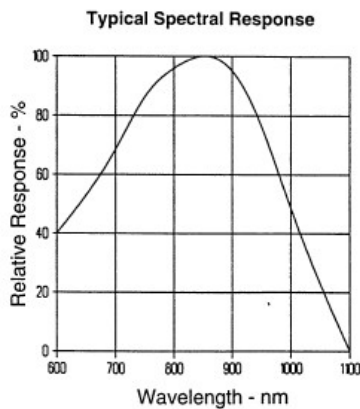
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Absolute Maximum Ratings ( $T_A = 25^\circ\text{C}$ unless otherwise noted)	
Collector-Base Voltage	30 V
Collector-Emitter Voltage	30 V
Emitter-Base Voltage	5 V
Emitter-Collector Voltage	5 V
Continuous Collector Current	50 mA
Storage Temperature Range	$-65^\circ\text{C}$ to $+150^\circ\text{C}$
Operating Temperature Range	$-65^\circ\text{C}$ to $+125^\circ\text{C}$
Lead Soldering Temperature [1/16 inch (1.6 mm) from case for 5 seconds with soldering iron]	$260^\circ\text{C}^{(2)}$
Power Dissipation	$250\text{ mW}^{(3)}$

**Notes:**

1. RMA flux is recommended. Duration can be extended to 10 seconds maximum when flow soldering.
2. Derate linearly  $2.5\text{ mW}/^\circ\text{C}$  above  $25^\circ\text{C}$ .
3. Junction temperature maintained at  $25^\circ\text{C}$ .
4. Light source is a GaAlAs LED, 890 nm peak emission wavelength, providing a  $0.5\text{ mW}/\text{cm}^2$  radiant intensity on the unit under test. The intensity level is not necessarily uniform over the lens area of the unit under test.



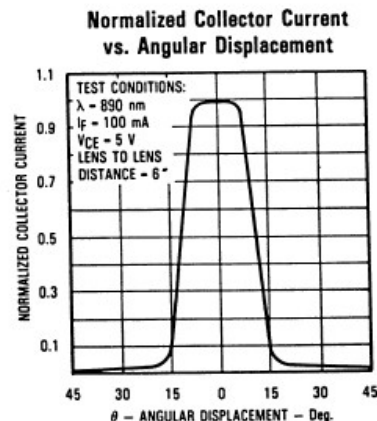
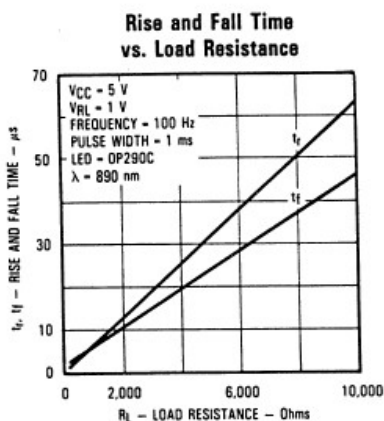
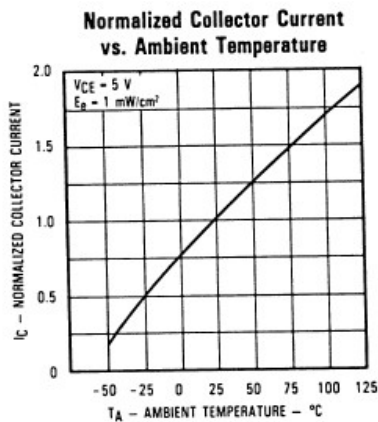
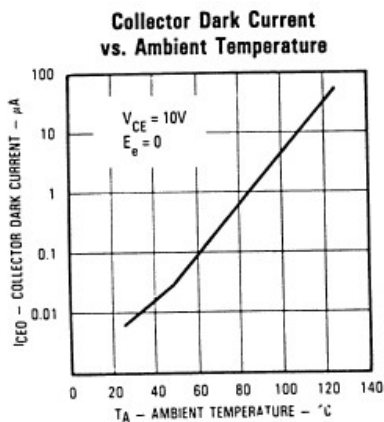
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## Electrical Characteristics (T<sub>A</sub> = 25° C unless otherwise noted)

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
I <sub>C(ON)</sub> <sup>(3)</sup>	On-State Collector Current					V <sub>CE</sub> = 5 V, E <sub>E</sub> = 0.5 mW/cm <sup>2(4)</sup>
	OP800C	0.90	-	3.60	mA	
	OP800B	1.80	-	5.40	mA	
	OP800A	3.60	-	-	mA	
I <sub>CEO</sub>	Collector Dark Current	-	-	100	nA	V <sub>CE</sub> = 10 V, E <sub>E</sub> = 0
V <sub>(BR)CEO</sub>	Collector-Emitter Breakdown Voltage	30	-	-	V	I <sub>C</sub> = 100 μA
V <sub>(BR)CBO</sub>	Collector-Base Breakdown Voltage	30	-	-	V	I <sub>C</sub> = 100 μA
V <sub>(BR)ECO</sub>	Emitter-Collector Breakdown Voltage	5.0	-	-	V	I <sub>E</sub> = 100 μA
V <sub>(BR)EBO</sub>	Emitter-Base Breakdown Voltage	5.0	-	-	V	I <sub>E</sub> = 100 μA
t <sub>r</sub>	Rise Time	-	7.0	-	μs	V <sub>CC</sub> = 5 V, I <sub>C</sub> = 0.80 mA,
t <sub>f</sub>	Fall Time	-	7.0	-	μs	R <sub>L</sub> = 100 Ω (See Test Circuit)

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