

# NPN Silicon Phototransistor

OP800A, OP800B, OP800C, OP800D



## Features:

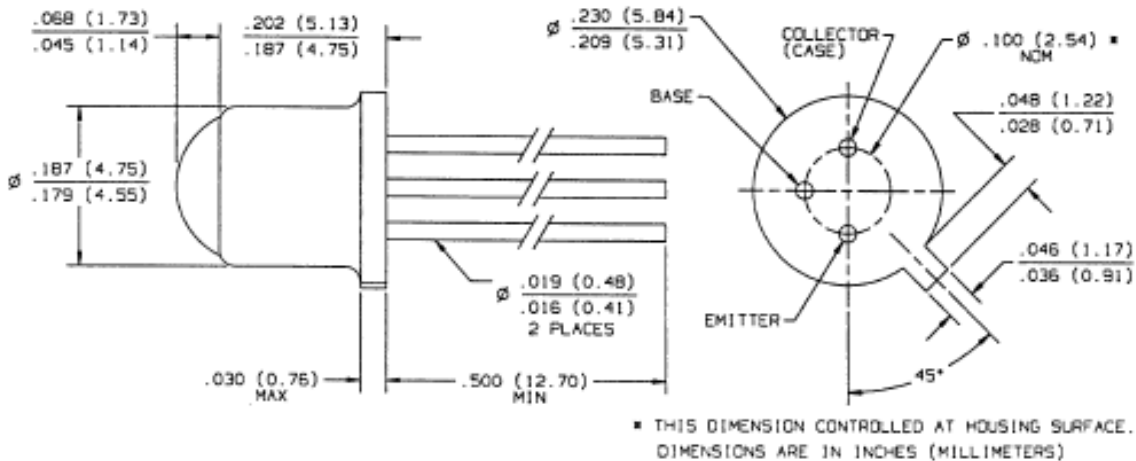
- Narrow receiving angle
- Suitable for applications from 400nm to 1100
- Variety of sensitivity ranges
- TO-18 hermetically sealed package
- Enhanced temperature range
- Base lead connection

## 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  
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OPTEK Technology, Inc.  
1645 Wallace Drive, Carrollton, TX 75006 | Ph: +1 972 323 2200  
www.optekinc.com | www.ttelectronics.com

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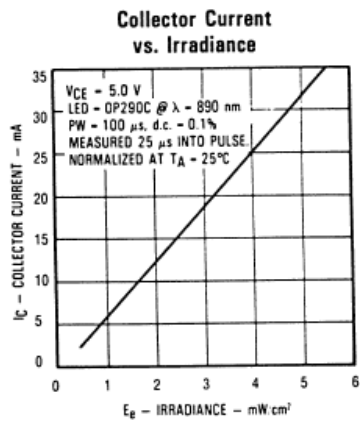
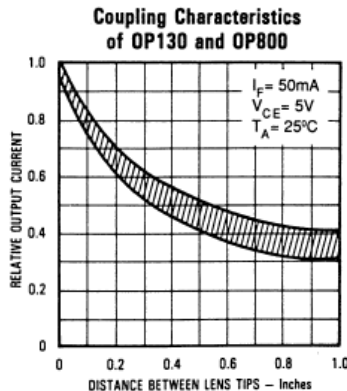
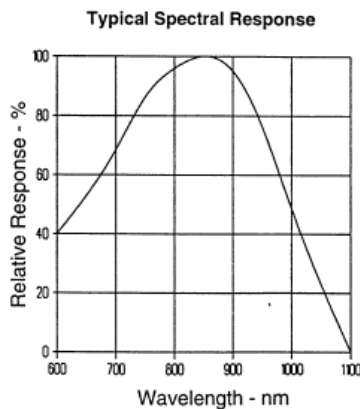
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Absolute Maximum Ratings ( $T_A = 25^\circ\text{C}$ unless otherwise noted)	
Collector-Base Voltage	30 V
Collector-Emitter Voltage	30 V
Emitter-Base Voltage	5 V
Emitter-Collector Voltage	5 V
Continuous Collector Current	50 mA
Storage Temperature Range	$-65^\circ\text{C}$ 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.

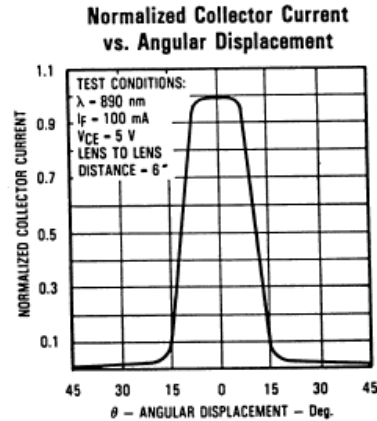
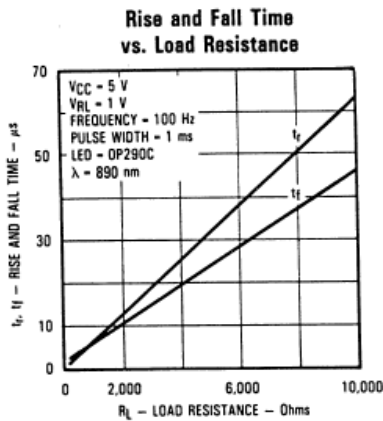
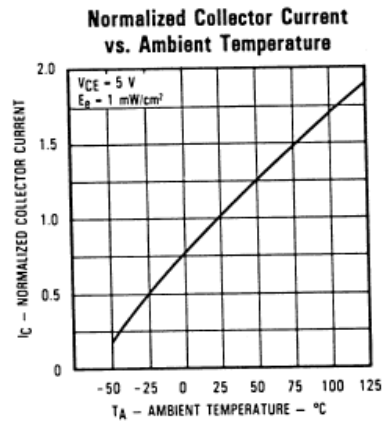
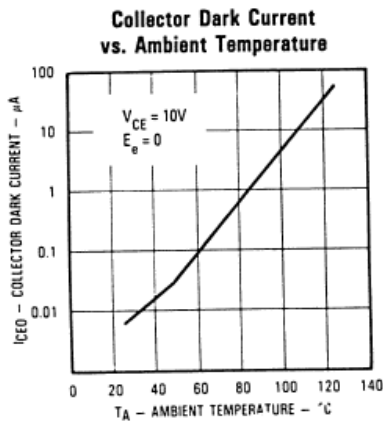


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## Electrical Characteristics ( $T_A = 25^\circ\text{C}$ unless otherwise noted)

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
$I_{C(ON)}^{(3)}$	On-State Collector Current					$V_{CE} = 5\text{ V}, E_E = 0.5\text{ mW/cm}^{2(4)}$
	OP800D	0.45	-	-	mA	
	OP800C	0.90	-	3.60	mA	
	OP800B	1.80	-	5.40	mA	
OP800A	3.60	-	-	mA		
$I_{CEO}$	Collector Dark Current	-	-	100	nA	$V_{CE} = 10\text{ V}, E_E = 0$
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	30	-	-	V	$I_C = 100\ \mu\text{A}$
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	30	-	-	V	$I_C = 100\ \mu\text{A}$
$V_{(BR)ECO}$	Emitter-Collector Breakdown Voltage	5.0	-	-	V	$I_E = 100\ \mu\text{A}$
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	5.0	-	-	V	$I_E = 100\ \mu\text{A}$
$t_r$	Rise Time	-	7.0	-	$\mu\text{s}$	$V_{CC} = 5\text{ V}, I_C = 0.80\text{ mA},$ $R_L = 100\ \Omega$ (See Test Circuit)
$t_f$	Fall Time	-	7.0	-	$\mu\text{s}$	

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