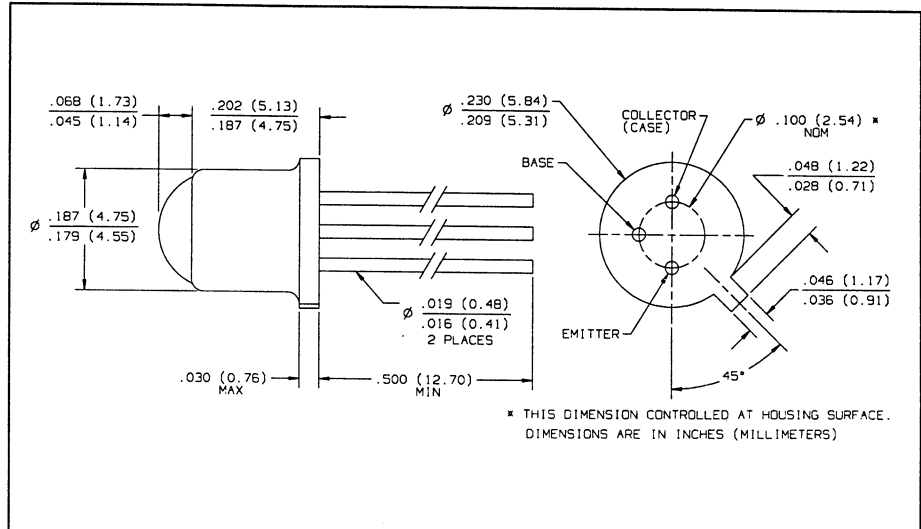
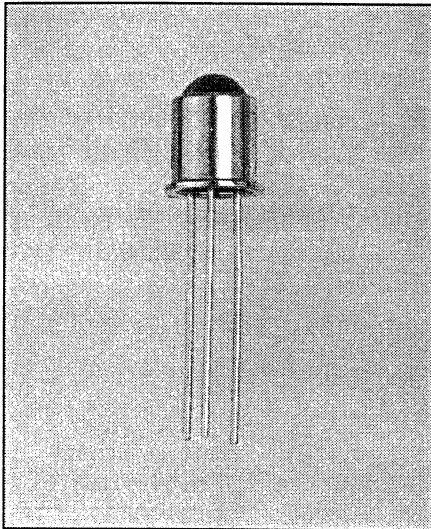


# NPN Silicon Phototransistors

Types OP800SL, OP801SL, OP802SL, OP803SL, OP804SL, OP805SL



## Features

- Narrow receiving angle
- Variety of sensitivity ranges
- Enhanced temperature range
- TO-18 hermetically sealed package
- Mechanically and spectrally matched to the OP130 and OP231 series of infrared emitting diodes
- TX/TXV processing available

## Description

The OP800SL series device consists of an NPN silicon phototransistor mounted in a hermetically sealed package. The narrow receiving angle provides excellent on-axis coupling. TO-18 packages offer high power dissipation and superior hostile environment operation. The base lead is bonded to enable conventional transistor biasing.

## Replaces

OP800 and K5251 series

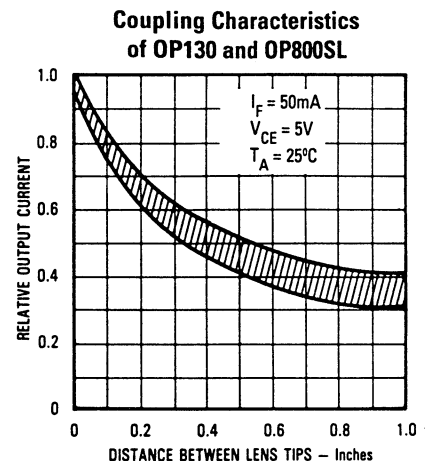
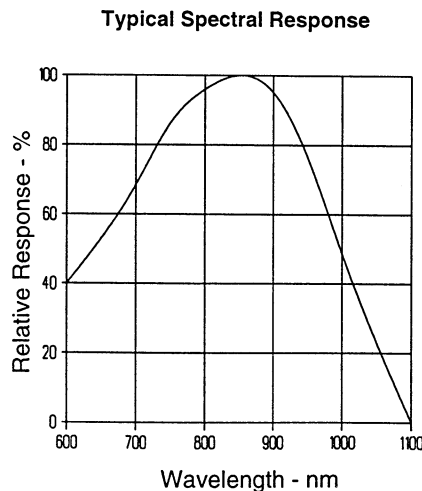
## Absolute Maximum Ratings ( $T_A = 25^\circ\text{C}$ unless otherwise noted)

Collector-Base Voltage	30 V
Collector-Emitter Voltage	30 V
Emitter-Base Voltage	5.0 V
Emitter-Collector Voltage	5.0 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 sec. with soldering iron]	$260^\circ\text{C}^{(1)}$
Power Dissipation	$250\text{ mW}^{(2)}$

### Notes:

- (1) RMA flux is recommended. Duration can be extended to 10 sec. max. 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 an unfiltered tungsten bulb operating at  $CT = 2870\text{ K}$  or equivalent infrared source.

## Typical Performance Curves



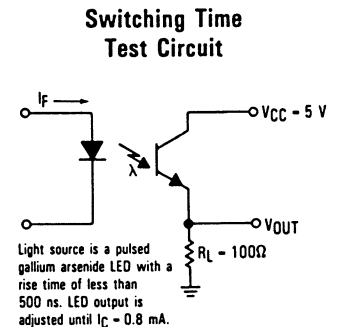
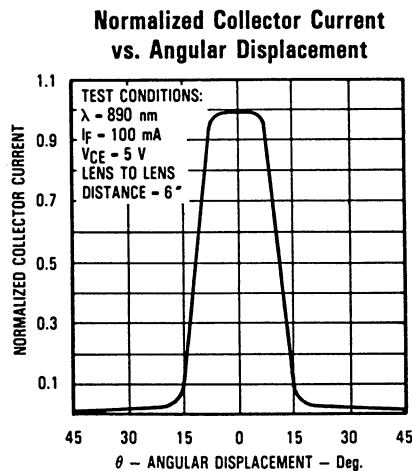
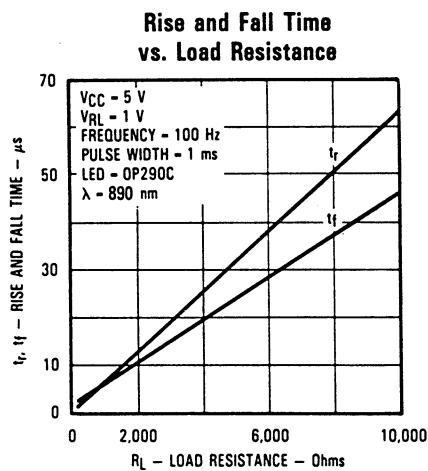
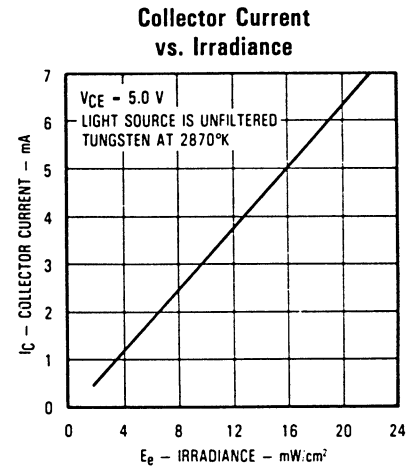
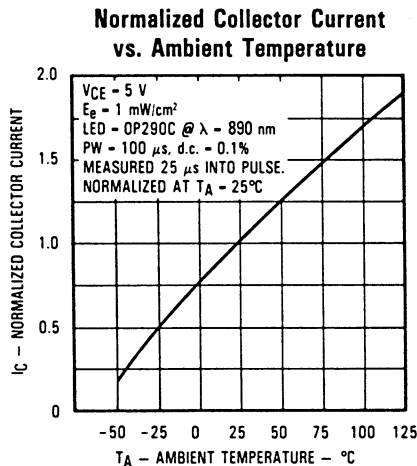
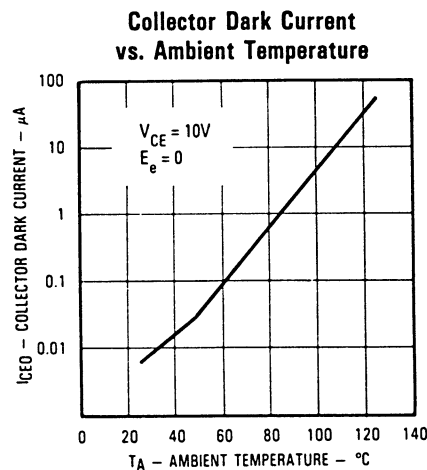
# Types OP800SL thru OP805SL

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

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
$I_{C(ON)}$	On-State Collector Current	OP800SL	0.5			$V_{CE} = 5\text{ V}, E_e = 5\text{ mW/cm}^2(3)(4)$
		OP801SL	0.5	3.0	mA	
		OP802SL	2.0	5.0	mA	
		OP803SL	4.0	8.0	mA	
		OP804SL	7.0	22.0	mA	
		OP805SL	15.0		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	$I_C = 100\text{ }\mu\text{A}$
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	30			V	$I_C = 100\text{ }\mu\text{A}$
$V_{(BR)ECO}$	Emitter-Collector Breakdown Voltage	5.0			V	$I_E = 100\text{ }\mu\text{A}$
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	5.0			V	$I_E = 100\text{ }\mu\text{A}$
$V_{CE(SAT)}$	Collector-Emitter Saturation Voltage			0.40	V	$I_C = 0.4\text{ mA}, E_e = 5\text{ mW/cm}^2(4)$
$t_r$	Rise Time		7.0		$\mu\text{s}$	$V_{CC} = 5\text{ V}, I_C = 0.80\text{ mA}, R_L = 100\text{ }\Omega, \text{ See Test Circuit}$
$t_f$	Fall Time		7.0		$\mu\text{s}$	

PHOTOSENSORS

## Typical Performance Curves



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

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