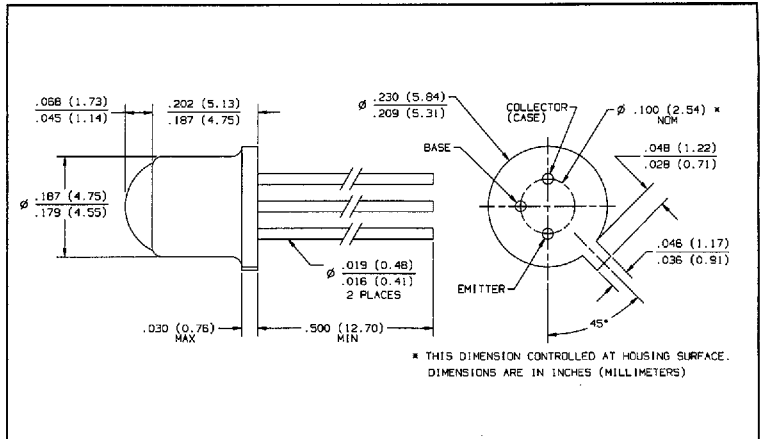
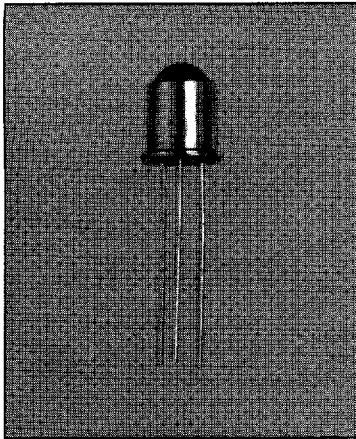


NPN Silicon Photodarlington Type OP830SL



Features

- Narrow receiving angle
- Enhanced temperature range
- Excellent thermal characteristics
- TO-18 hermetically sealed package
- Mechanically and spectrally matched to the OP130 and OP231 series of infrared emitting diodes

Description

The OP830SL consists of an NPN silicon photodarlington mounted in a hermetically sealed package. The narrow receiving angle provides excellent on-axis coupling. Photodarlington devices are normally used in applications where light signal levels are low and more current gain is needed than is possible with phototransistors. TO-18 packages offer high power dissipation and superior hostile environment operation.

Replaces

OP830 and K9020 series

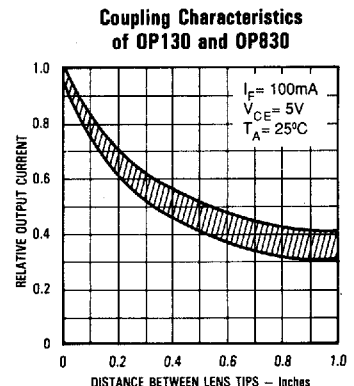
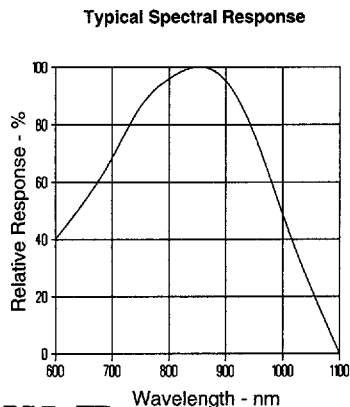
Absolute Maximum Ratings ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Collector-Emitter Voltage	15 V
Emitter-Collector Voltage	5 V
Continuous Collector Current	50 mA
Storage Temperature Range	-65°C to $+150^\circ\text{C}$
Operating Temperature Range	-65°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°C .
- (3) Junction temperature maintained at 25°C .
- (4) Light source is an unfiltered tungsten bulb operating at $CT = 2870\text{ K}$ or equivalent infrared source.

Typical Performance Curves



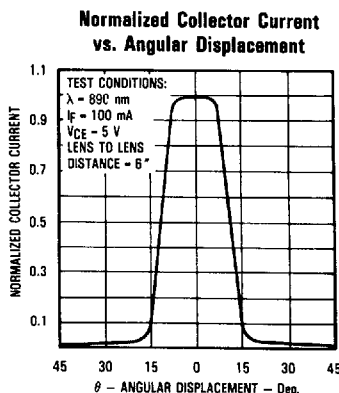
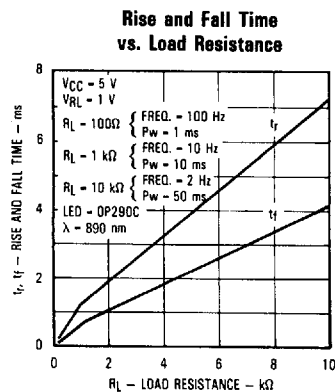
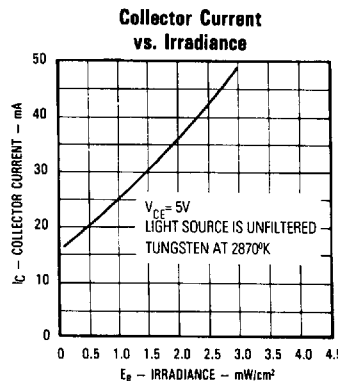
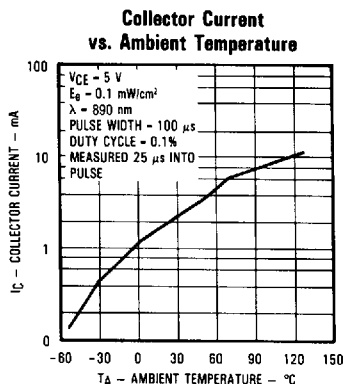
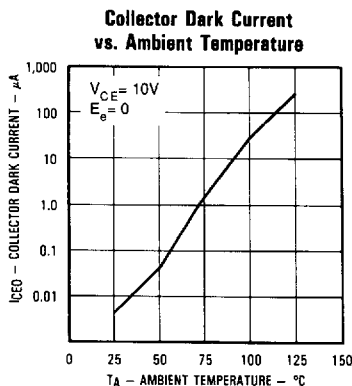
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Type OP830SL

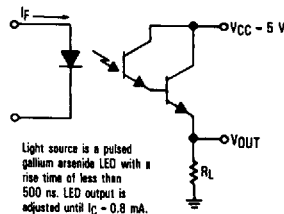
Electrical Characteristics ($T_A = 25^\circ\text{C}$ unless otherwise noted)

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
$I_{C(ON)}^{(3)}$	On-State Collector Current	15			mA	$V_{CE} = 5\text{ V}$, $E_e = 0.5\text{ mW/cm}^2$ ⁽⁴⁾
I_{CEO}	Collector Dark Current			1.0	μA	$V_{CE} = 10\text{ V}$, $E_e = 0$
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	15			V	$I_C = 100\text{ }\mu\text{A}$
$V_{(BR)ECO}$	Emitter-Collector Breakdown Voltage	5.0			V	$I_E = 100\text{ }\mu\text{A}$
$V_{CE(SAT)}^{(3)}$	Collector-Emitter Saturation Voltage			1.20	V	$I_C = 1.0\text{ mA}$, $E_e = 0.5\text{ mW/cm}^2$ ⁽⁴⁾

Typical Performance Curves



Switching Time Test Circuit



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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. 1215 W. Crosby Road Carrollton, Texas 75006 (972)323-2200 Fax (972)323-2396