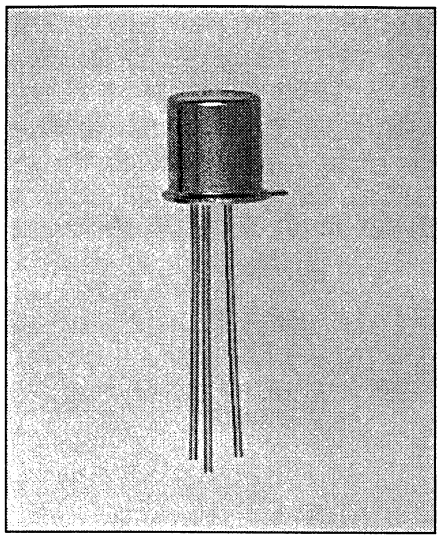
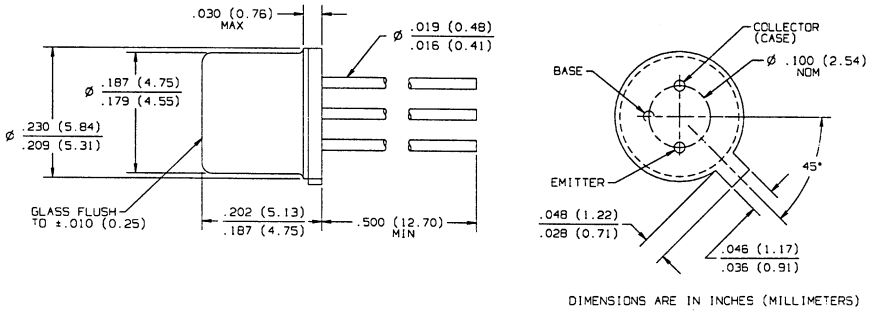
NPN Silicon Phototransistors
Types OP800WSL, OP801WSL, OP802WSL





Features

- Wide receiving angle
- Variety of sensitivity ranges
- Enhanced temperature range
- TO-18 hermetically sealed package
- Mechanically and spectrally matched to the OP130W and OP231W series emitters

Description

The OP800WSL series device consists of an NPN silicon phototransistor mounted in a hermetically sealed package. The wide receiving angle provides relatively even reception over a large area. TO-18 packages offer high power dissipation and superior hostile environment operation.

Replaces

OP800W and K5201 series

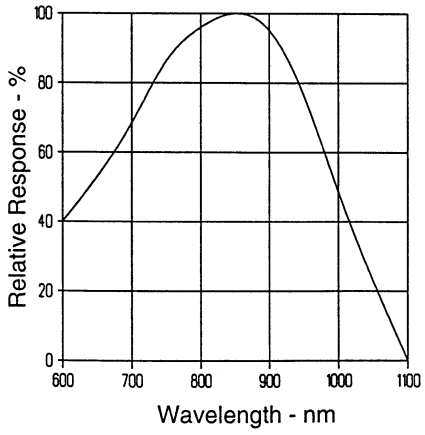
Absolute Maximum Ratings (T_A = 25° C unless otherwise noted)

Collector-Emitter Voltage	30 V
Emitter-Collector Voltage	5.0 V
Continuous Collector Current	50 mA
Storage Temperature Range	-65° C to +150° C
Operating Temperature Range	-65° C to +125° C
Lead Soldering Temperature [1/16 inch (1.6 mm) from case for 5 sec. with soldering iron]	260° C(1)
Power Dissipation	250 mW(2)

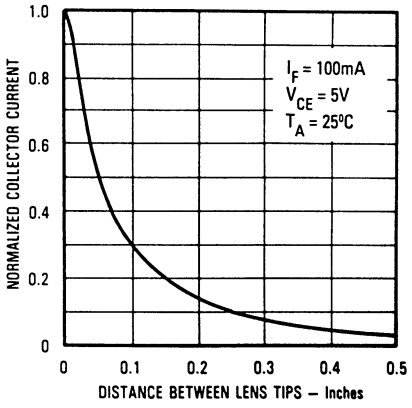
Notes:
(1) RMA flux is recommended. Duration can be extended to 10 sec. max. when flow soldering.
(2) Derate linearly 2.5 mW/° C above 25° C.
(3) Junction temperature maintained at 25° C.
(4) Light source is an unfiltered tungsten bulb operating at CT = 2870 K or equivalent infrared source.

Typical Performance Curves

Typical Spectral Response



Coupling Characteristics of OP130W and OP800W



Types OP800WSL, OP801WSL, OP802WSL

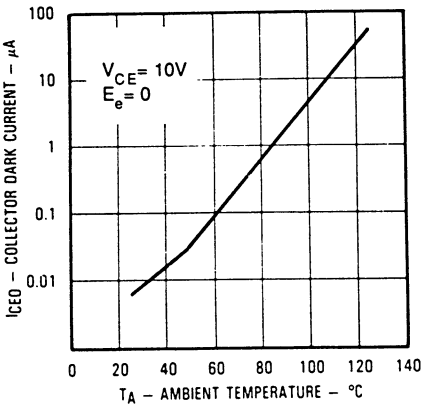
Electrical Characteristics (T_A = 25° C unless otherwise noted)

SYMBOL	PARAMETER		MIN	TYP	MAX	UNITS	TEST CONDITIONS
$I_{C(ON)}$[3]	On-State Collector Current	OP800WSL OP801WSL OP802WSL	0.3 0.5 2.5		 3.0	mA mA mA	V_{CE} = 5 V, E_e = 5 mW/cm²[4]
I_{CEO}	Collector Dark Current				100	nA	V_{CE} = 10 V, E_e = 0
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage		30			V	I_C = 100 µA
$V_{(BR)ECO}$	Emitter-Collector Breakdown Voltage		5.0			V	I_E = 100 µA
$V_{CE(SAT)}$[3]	Collector-Emitter Saturation Voltage				0.40	V	I_C = 0.15 mA, E_e = 0.5 mW/cm²[4]
t_r t_f	Rise Time Fall Time			7.0 7.0		µs µs	V_{CC} = 5 V, I_C = 0.80 mA, R_L = 100 Ω, See Test Circuit

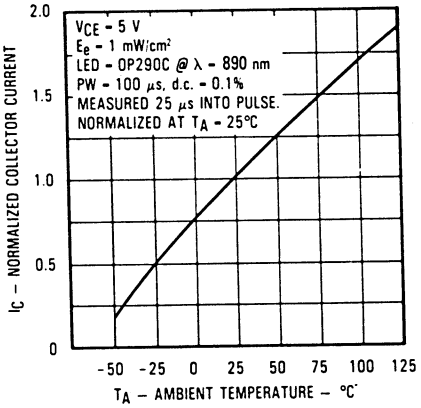
PHOTOSENSORS

Typical Performance Curves

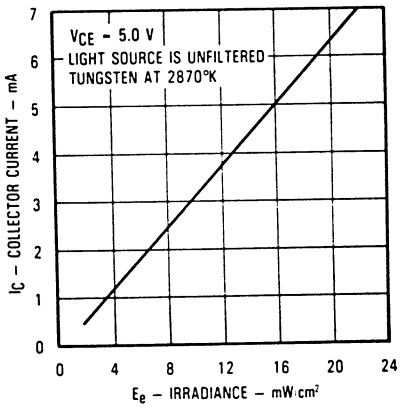
Collector Dark Current vs. Ambient Temperature



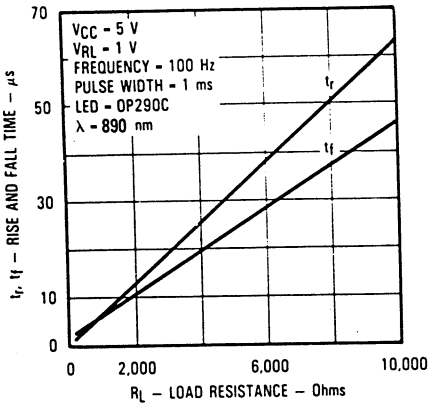
Normalized Collector Current vs. Ambient Temperature



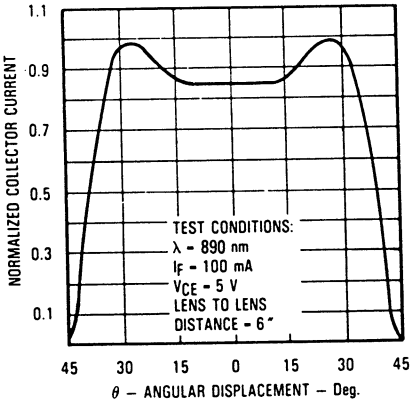
Collector Current vs. Irradiance



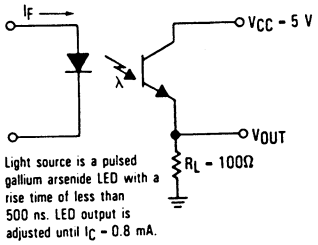
Rise and Fall Time vs. Load Resistance



Normalized Collector Current vs. Angular Displacement



Switching Time Test Circuit



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