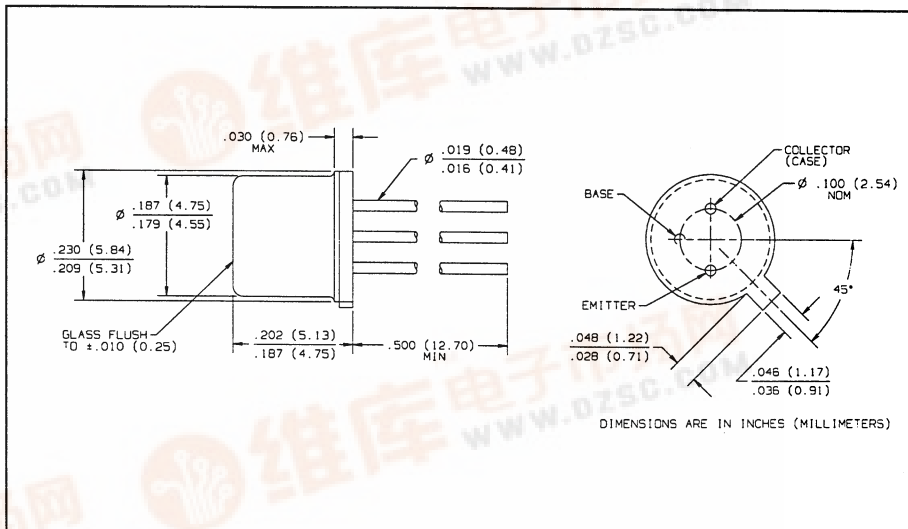
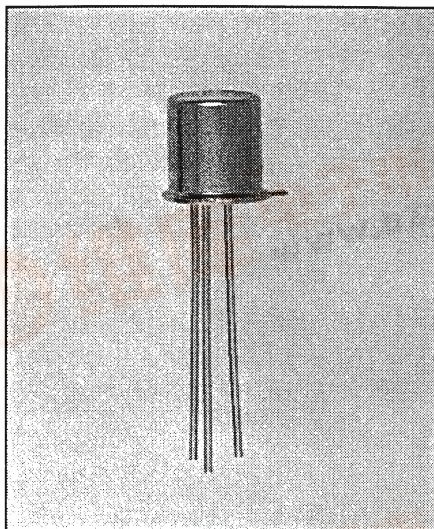


NPN Silicon Phototransistors

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

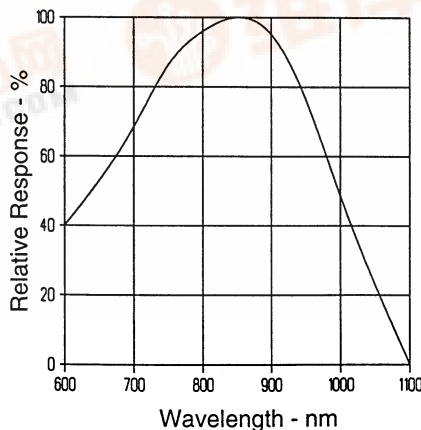
Collector-Emitter Voltage	30 V
Emitter-Collector Voltage	5.0 V
Continuous Collector Current	50 mA
Storage Temperature Range	-65°C to $+150^\circ\text{C}$
Operating Temperature Range	-65°C to $+125^\circ\text{C}$
Lead Soldering Temperature [1/16 inch (1.6 mm) from case for 5 sec. with soldering iron]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

Notes:

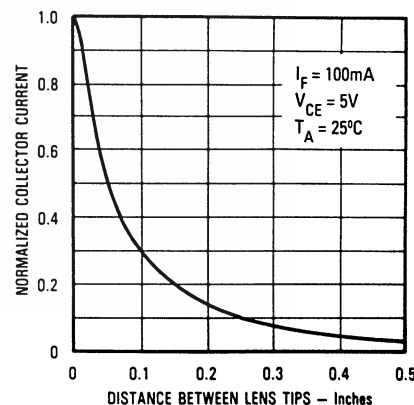
- (1) RMA flux is recommended. Duration can be extended to 10 sec. max. when flow soldering.
- (2) Derate linearly $2.5\text{ mW}/^\circ\text{C}$ above 25°C .
- (3) Junction temperature maintained at 25°C .
- (4) Light source is an unfiltered tungsten bulb operating at $CT = 2870\text{ K}$ or equivalent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

Typical Performance Curves

Typical Spectral Response



Coupling Characteristics of OP130W and OP800W



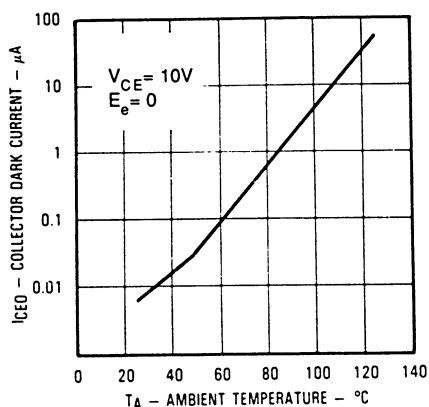
Types OP800WSL, OP801WSL, OP802WSL

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

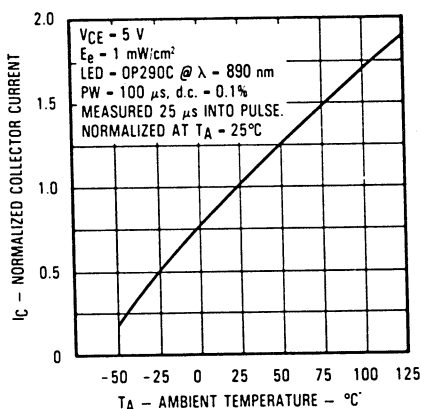
SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
$I_{C(ON)}^{(3)}$	On-State Collector Current	OP800WSL 0.3 OP801WSL 0.5 OP802WSL 2.5		3.0	mA	$V_{CE} = 5\text{ V}$, $E_e = 5\text{ mW/cm}^2$ ⁽⁴⁾
I_{CEO}	Collector Dark Current			100	nA	$V_{CE} = 10\text{ V}$, $E_e = 0$
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	30			V	$I_C = 100\text{ }\mu\text{A}$
$V_{(BR)ECO}$	Emitter-Collector Breakdown Voltage	5.0			V	$I_E = 100\text{ }\mu\text{A}$
$V_{CE(SAT)}^{(3)}$	Collector-Emitter Saturation Voltage			0.40	V	$I_C = 0.15\text{ mA}$, $E_e = 0.5\text{ mW/cm}^2$ ⁽⁴⁾
t_r	Rise Time		7.0		μs	$V_{CC} = 5\text{ V}$, $I_C = 0.80\text{ mA}$, $R_L = 100\text{ }\Omega$, See Test Circuit
t_f	Fall Time		7.0		μs	

Typical Performance Curves

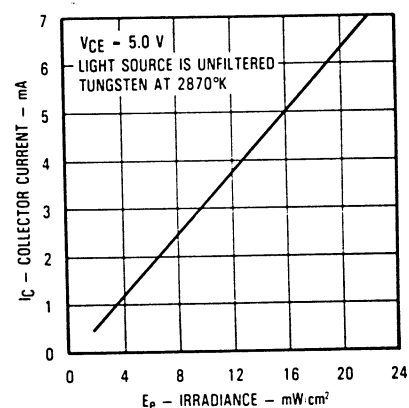
Collector Dark Current
vs. Ambient Temperature



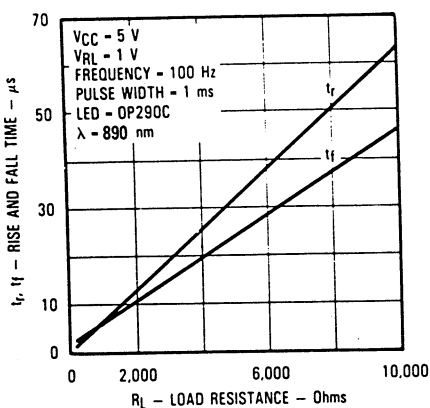
Normalized Collector Current
vs. Ambient Temperature



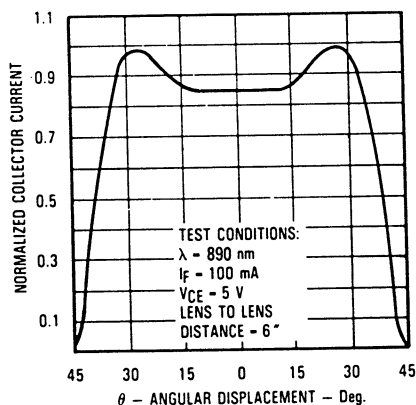
Collector Current
vs. Irradiance



Rise and Fall Time
vs. Load Resistance



Normalized Collector Current
vs. Angular Displacement



Switching Time
Test Circuit

