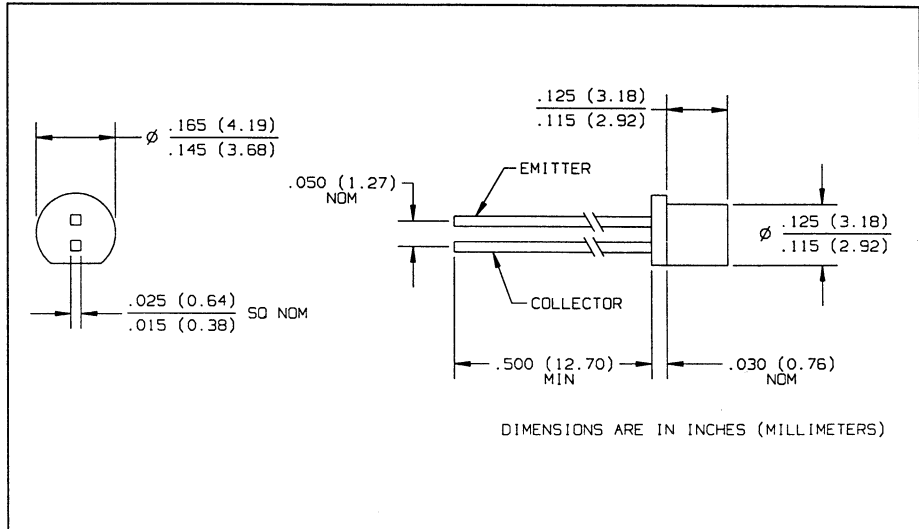
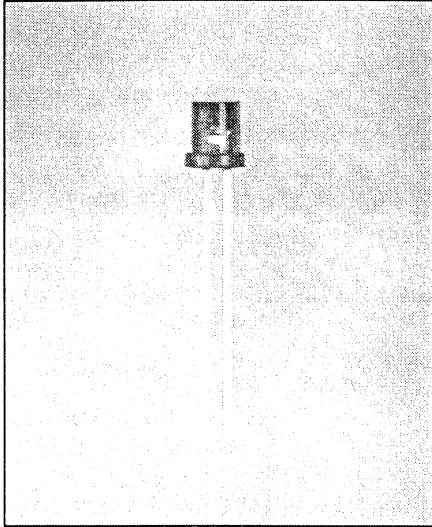


NPN Silicon Phototransistor Type OP505W



Features

- Wide receiving angle
- T-1 package style
- Small package size for space limited applications

Description

The OP505W consists of an NPN silicon phototransistor molded in a blue tinted plastic package. The wide receiving angle provides relatively even reception over a large area. This device is 100% production tested using infrared light for close correlation with Optek's GaAs and GaAlAs emitters.

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

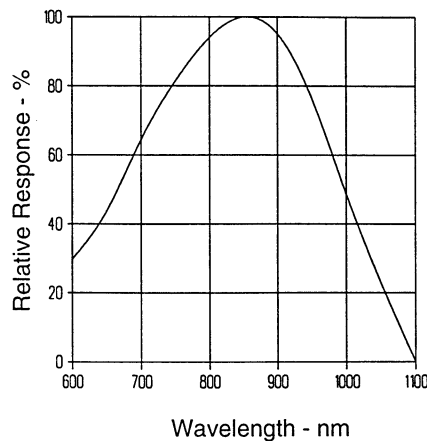
| | |
|--|---|
| Collector-Emitter Voltage | 30 V |
| Emitter-Collector Voltage | 5.0 V |
| Storage and Operating Temperature Range | -40°C to $+100^\circ\text{C}$ |
| Lead Soldering Temperature [1/16 inch (1.6 mm) from case for 5 sec. with soldering iron] | $260^\circ\text{C}^{(1)}$ |
| Power Dissipation | $100\text{ mW}^{(2)}$ |

Notes:

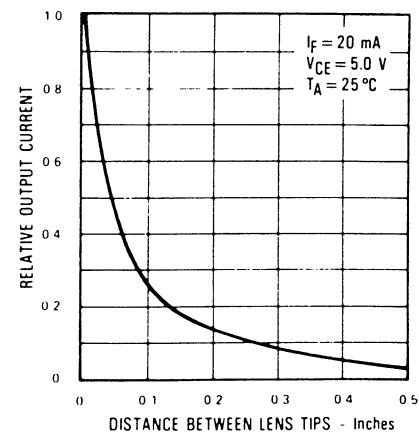
- (1) RMA flux is recommended. Duration can be extended to 10 sec. max. when flow soldering. Max. 20 grams force may be applied to leads when soldering.
- (2) Derate linearly $1.33\text{ mW}/^\circ\text{C}$ above 25°C .
- (3) Light source is an unfiltered GaAs LED with a peak emission wavelength of 935 nm and a radiometric intensity level which varies less than 10% over the entire surface of the phototransistor being tested.
- (4) To calculate typical collector dark current in μA , use the formula $I_{CED} = 10^{(0.04 T_A - 3.4)}$ where T_A is ambient temperature in $^\circ\text{C}$.

Typical Performance Curves

Typical Spectral Response



Coupling Characteristics of OP165W and OP505W

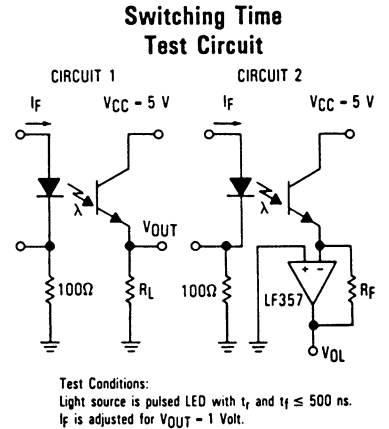
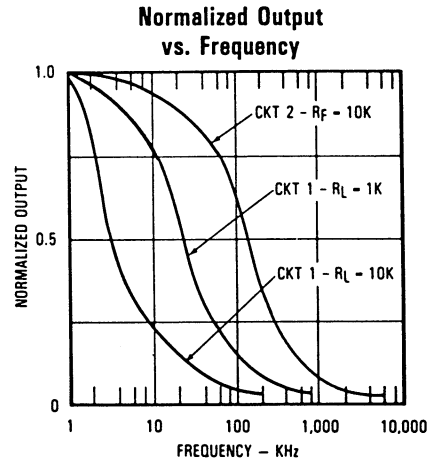
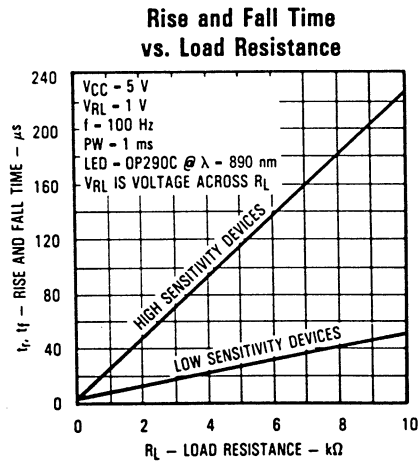
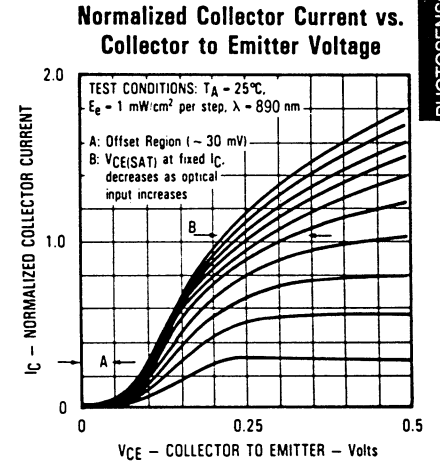
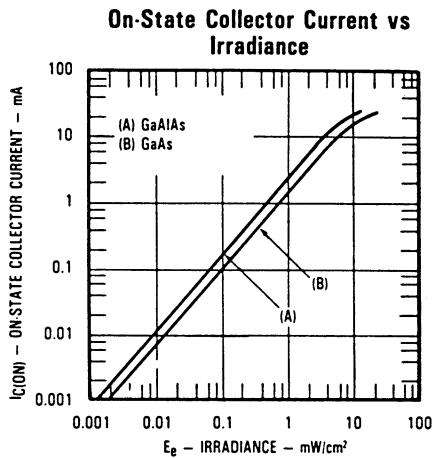
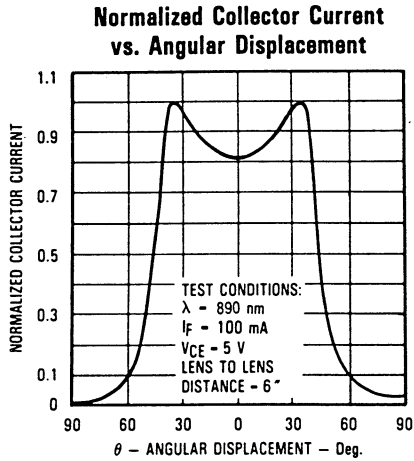


Types OP505W

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

| SYMBOL | PARAMETERS | MIN | TYP | MAX | UNITS | TEST CONDITIONS |
|---------------|--------------------------------------|-----|-----|------|---------------|---|
| $I_{C(ON)}$ | On-State Collector Current | 100 | | | μA | $V_{CE} = 5\text{ V}, E_e = 0.75\text{ mW/cm}^2(3)$ |
| I_{CEO} | Collector Dark Current | | | 100 | nA | $V_{CE} = 10.0\text{ V}, E_e = 0$ |
| $V_{(BR)CEO}$ | Collector-Emitter Breakdown Voltage | 30 | | | V | $I_C = 100\ \mu\text{A}$ |
| $V_{(BR)ECO}$ | Emitter-Collector Breakdown Voltage | 5.0 | | | V | $I_E = 100\ \mu\text{A}$ |
| $V_{CE(SAT)}$ | Collector-Emitter Saturation Voltage | | | 0.40 | V | $I_C = 50\ \mu\text{A}, E_e = 0.75\text{ mW/cm}^2(3)$ |

Typical Performance Curves



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