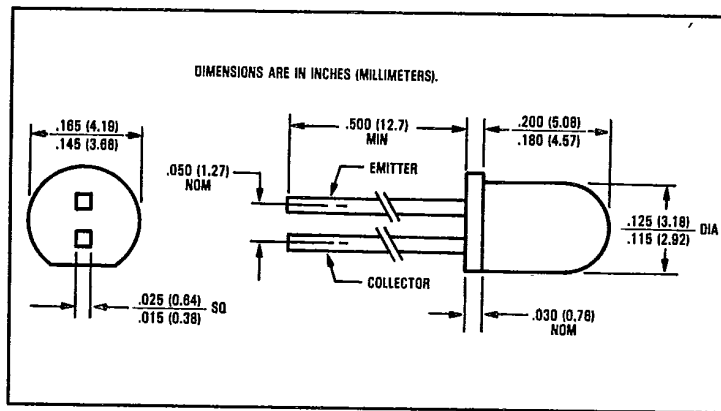
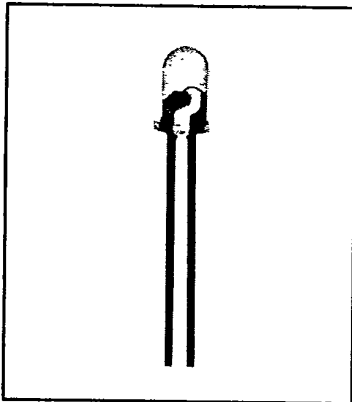


NPN Silicon Phototransistors

Types OP500, OP500SLD, OP500SLC, OP500SLB, OP500SLA



Features

- Wide range of collector currents
- Lensed for high sensitivity
- Low cost plastic package

Description

The OP500 and OP500SLD through SLA each consist of an NPN silicon phototransistor mounted in a lensed, clear plastic, end looking package. The lensing effect of the package allows an acceptance half angle of 8° measured from the optical axis to the half power point. This series is mechanically and spectrally matched to the OP160SL and OP260SL series of infrared emitting diodes.

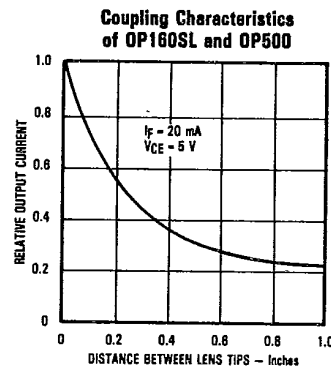
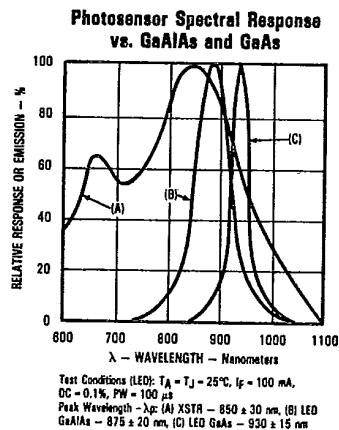
Absolute Maximum Ratings ($T_A = 25^\circ\text{C}$ unless otherwise noted)

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 ⁽¹⁾)	240°C
Power Dissipation	100 mW ⁽²⁾

Notes:

- (1) RMA flux is recommended. Duration can be extended to 10 sec. max. when wave soldering.
- (2) Derate linearly 1.33 mW/°C above 25°C .
- (3) Junction temperature maintained at 25°C .
- (4) Light source is an unfiltered tungsten bulb operating at $CT = 2870^\circ\text{K}$ or equivalent infrared source.
- (5) To calculate typical collector disk current in μA , use the formula $I_{CEQ} = 10^{0.040 T_A - 3.4}$ where T_A is ambient temperature in $^\circ\text{C}$.

Typical Performance Curves

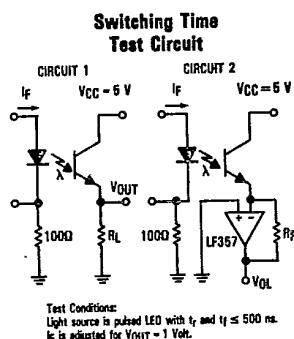
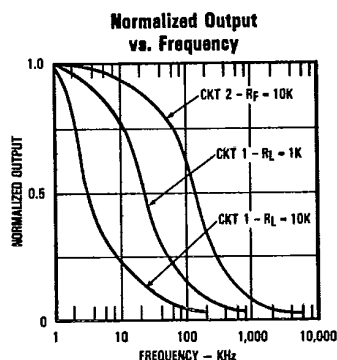
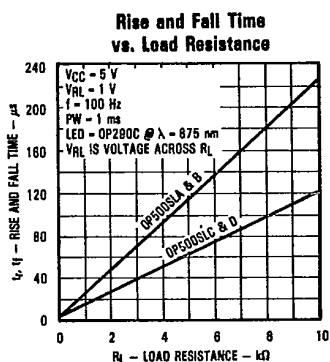
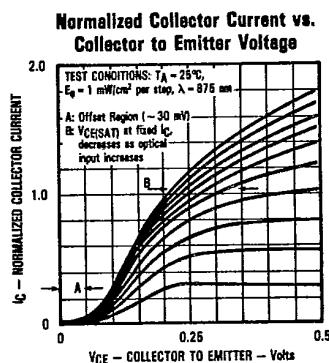
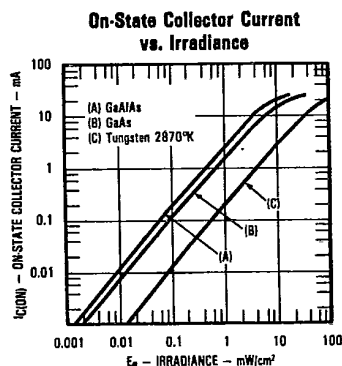
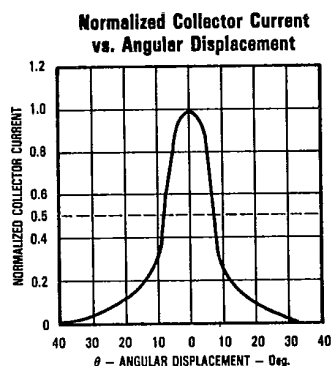


Types OP500, OP500SLD, OP500SLC, OP500SLB, OP500SLA T-41-61

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	OP500 4.0		24	mA	$V_{CE} = 5.0\text{ V}, E_0 = 20\text{ mW/cm}^2$ ⁽⁴⁾
		OP500SLD 10.0		35	mA	$V_{CE} = 5.0\text{ V}, E_0 = 20\text{ mW/cm}^2$ ⁽⁴⁾
		OP500SLC 17.0		50	mA	$V_{CE} = 5.0\text{ V}, E_0 = 20\text{ mW/cm}^2$ ⁽⁴⁾
		OP500SLB 25			mA	$V_{CE} = 5.0\text{ V}, E_0 = 20\text{ mW/cm}^2$ ⁽⁴⁾
		OP500SLA 40			mA	$V_{CE} = 5.0\text{ V}, E_0 = 20\text{ mW/cm}^2$ ⁽⁴⁾
$\Delta I_C/\Delta T$	Relative I_C Changes with Temperature		1.00		%/°C	$V_{CE} = 5.0\text{ V}, E_0 = 1.00\text{ mW/cm}^2, \lambda = 875\text{ nm}$
I_{CE0} ⁽⁵⁾	Collector Dark Current			100	nA	$V_{CE} = 15.0\text{ V}, E_0 = 0$
$V_{(BR)CEO}$	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	$I_C = 0.50\text{ mA}, E_0 = 20\text{ mW/cm}^2$ ⁽⁴⁾

Typical Performance Curves



TRW 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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