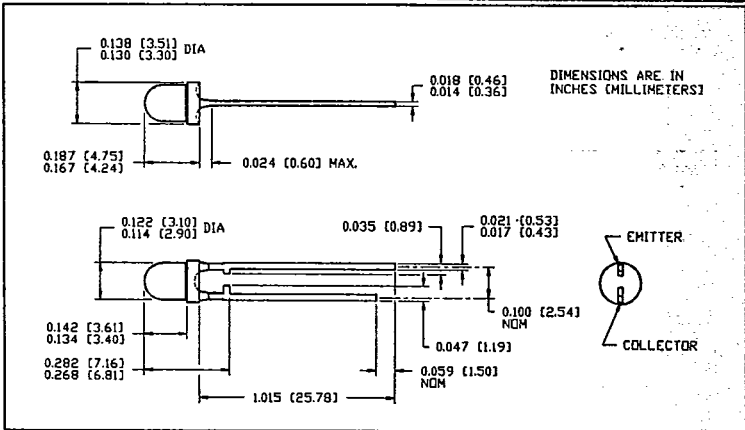
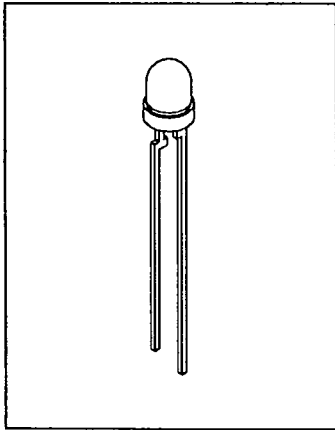


CLT506
Silicon Planar Phototransistor



Features

- T-1 package style
- low dark current
- four sensitivity ranges
- narrow viewing angle

Description

This family consists of a silicon epitaxial npn phototransistor in an epoxy package; a half-spherical lens provides a narrow viewing angle. This family of sensors is ideal for applications requiring high on-axis sensitivity; the narrow sensitivity pattern minimizes interference from off-axis sources. The series is characterized and tested for stable operation at nominal irradiance levels. This device is mechanically compatible with the CLED166 family of infrared emitters and spectrally compatible with all IREDs in the Senisys product line.

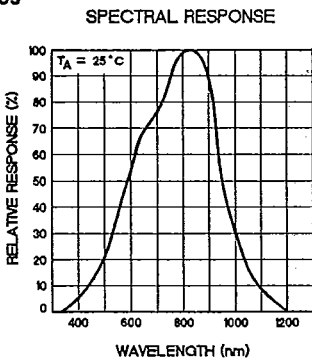
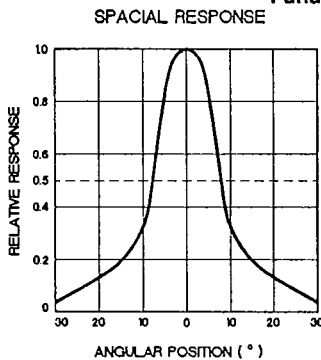
Absolute Maximum Ratings (T_A = 25°C unless otherwise stated.)

Storage Temperature.....	-40°C to +100°C
Operating Temperature.....	-40°C to +100°C
Junction Temperature ⁽¹⁾	+110°C
Lead Soldering Temperature ⁽²⁾	240°C ⁽³⁾
Collector-Emitter Voltage.....	30V
Emitter-Collector Voltage.....	5V
Collector Current.....	100mA ⁽⁴⁾
Power Dissipation.....	100mW ⁽⁵⁾

Notes:

1. Maximum operating temperature of the metallurgical junction.
2. 0.06" (1.5mm) from the header for 5 seconds maximum.
3. 260°C maximum when wave soldering.
4. Pulsed conditions only; maximum pulse width of 300 μsec at 2% maximum duty cycle. Use good judgement when operating this device under these conditions; thermal transients exceeding these restrictions can cause irreversible harm.
5. Derate linearly from 25°C free-air temperature to T_A = +100°C at 1.2 mW/°C.

Fundamental Characteristics



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CLT506 Series

Silicon Planar Phototransistor

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

T-41-51

Symbol	Parameter	min	max	units	Test Conditions
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	30	-	V	$I_C = 1.0\text{mA}$ ⁽¹⁾
$V_{(BR)ECO}$	Emitter-Collector Breakdown Voltage	5	-	V	$I_E = 0.1\text{mA}$ ⁽¹⁾
I_D	Dark Current	-	100	nA	$V_{CE} = 10\text{V}$, $E_s = 0$ ⁽¹⁾
I_L	Light Current ⁽³⁾				
	CLT505D	0.55	-	mA	$V_{CE} = 5\text{V}$, $E_s = 0.5\text{mW/cm}^2$ ⁽²⁾
	CLT505C	1.10	3.00	mA	$V_{CE} = 5\text{V}$, $E_s = 0.5\text{mW/cm}^2$ ⁽²⁾
	CLT505B	2.15	5.95	mA	$V_{CE} = 5\text{V}$, $E_s = 0.5\text{mW/cm}^2$ ⁽²⁾
	CLT505A	4.3	-	mA	$V_{CE} = 5\text{V}$, $E_s = 0.5\text{mW/cm}^2$ ⁽²⁾
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	-	0.3	V	$I_C = 0.25\text{mA}$, $E_s = 0.5\text{mW/cm}^2$ ⁽²⁾

Notes:

1. Radiation outside the sensitivity range of the device may be present during these measurements. Sufficient protection has been provided when the parameter being measured cannot be altered by further irradiation shielding.
2. The radiation source is a monochromatic solid-state source with an operating wavelength of 935nm.
3. Other ranges of light current can be specified; call Senisys for applications assistance.