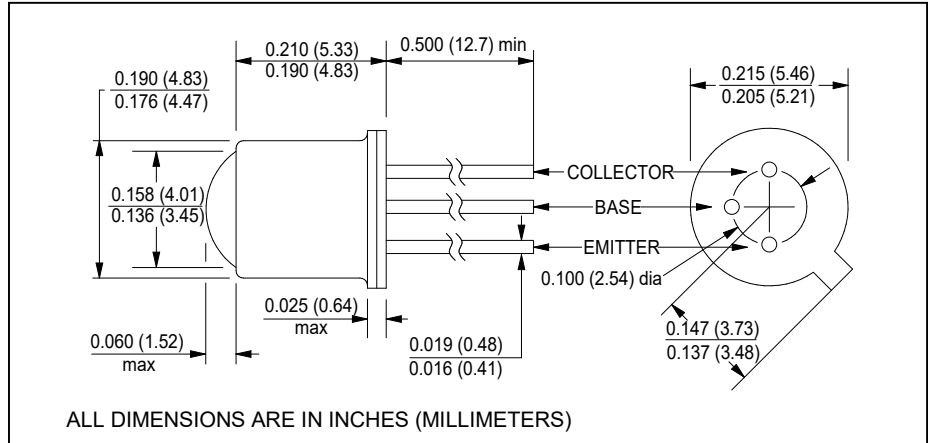


# CLT130, CLT131, CLT132, CLT133

## NPN Silicon Phototransistors



13-1300A



### Features

- four sensitivity ranges
- $\pm 9^\circ$  acceptance angle
- tall glass lensed TO-18 package
- transistor base is bonded
- usable throughout visible and near infrared spectrum

### description

The CLT130-CLT133 series are NPN silicon phototransistors mounted in TO-18 packages which feature double convex glass-to-metal sealed lenses. Narrow acceptance angle enables excellent on-axis coupling. These devices are mechanically and spectrally matched to the CLE335 series IREDs. For additional information, contact Clairex.

### absolute maximum ratings ( $T_A = 25^\circ\text{C}$ unless otherwise stated)

storage temperature.....	-65°C to +150°C
operating temperature.....	-65°C to +125°C
lead soldering temperature <sup>(1)</sup> .....	260°C
collector-emitter voltage.....	50 V
continuous collector current <sup>(2)</sup> .....	50 mA
continuous power dissipation <sup>(3)</sup> .....	250 mW

### notes:

1. 0.06" (1.5m m) from the header for 5 seconds maximum.
2. 200 mA when pulsed at 1.0 ms, 10% duty cycle.
3. Derate linearly 2.25 mW/°C from 25°C free air temperature to  $T_A = +125^\circ\text{C}$ .
4. Radiation source is an AlGaAs IRED with peak emission wavelength of 850nm providing the specified radiant intensity. Intensity level is not necessarily uniform over the detector area of the unit under test.
5. The radiation source is a pulsed AlGaAs IRED with rise and fall times of  $\leq 0.3\mu\text{s}$ .

electrical characteristics ( $T_A = 25^\circ\text{C}$ unless otherwise noted)							
symbol	parameter	min	typ	max	units	test conditions	
$I_L$	Light current <sup>(4)</sup>	CLT130	0.45	-	-	mA	$V_{CE} = 5 \text{ V}, E_e = 500 \mu\text{W}/\text{cm}^2$
		CLT131	0.90	-	-	mA	
		CLT132	1.80	-	-	mA	
		CLT133	3.60	-	-	mA	
$I_D$	Collector dark current	-	-	100	nA	$V_{CE} = 10 \text{ V}, E_e = 0$	
$V_{(BR)CEO}$	Collector-emitter breakdown	50	-	-	V	$I_C = 100 \mu\text{A}, E_e = 0$	
$V_{(BR)CBO}$	Collector-base breakdown	50	-	-	V	$I_C = 100 \mu\text{A}, E_e = 0$	
$V_{(BR)ECO}$	Emitter-collector breakdown	5	-	-	V	$I_E = 100 \mu\text{A}, E_e = 0$	
$V_{CE(sat)}$	Collector-emitter saturation voltage	-	-	0.4	V	$I_C = 0.15 \text{ mA}, E_e = 500 \mu\text{W}/\text{cm}^2$	
$t_r, t_f$	Output rise and fall time <sup>(5)</sup>	-	5.0	-	$\mu\text{s}$	$V_{CC} = 5 \text{ V}, I_C = 0.8 \text{ mA}, R_L = 1 \text{ k}\Omega$	
$\theta_{HP}$	Total angle at half sensitivity points	-	18	-	deg.		

Clairex reserves the right to make changes at any time to improve design and to provide the best possible product.