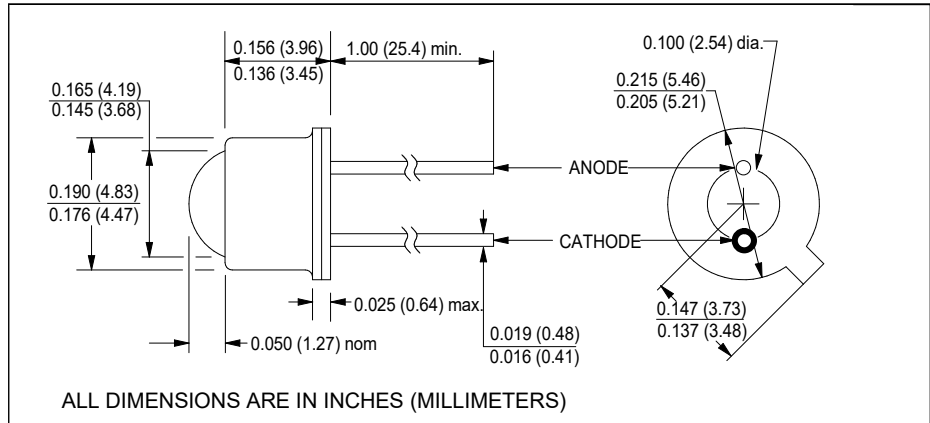


CLE331

AlGaAs Point Source IRED

Collimating Lens

12-3310A



features

- 850 nm wavelength
- 50 MHz operation
- TO-46 hermetic style package
- $\pm 5^\circ$ beam angle
- collimating lens

description

The CLE331 is an advanced, high efficiency, high speed, point source, AlGaAs infrared-emitting diode intended for use in applications requiring a uniform output radiation pattern. The emitting region is 0.002" in diameter, and the dual aspheric lens provides a highly collimated radiation source. Beam pattern is very uniform without the bond wire shadow effect of standard infrared emitting diodes.

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 ⁽¹⁾	260°C
continuous forward current ⁽²⁾	100 mA
peak forward current (1.0 ms pulse width, 10% duty cycle)	1 A
reverse voltage	2 V
continuous power dissipation ⁽³⁾	200 mW

notes:

1. 0.06" (1.5 mm) from the header for 5 seconds maximum
2. Derate linearly 0.80 mA/°C from 25°C free air temperature to $T_A = +125^\circ\text{C}$.
3. Derate linearly 1.6m W/°C from 25°C free air temperature to $T_A = +125^\circ\text{C}$.
4. Φ_e is a measurement of total radiant flux within a 0.444" PIN photodiode that is centered on the mechanical axis of the device at a distance of 0.267" from the lens side of the tab to the active area of the detector.
5. Power/unit area measured within a 0.444" (1.128 cm) diameter area, centered on the mechanical axis of the device and spaced 2.54" (6.45 cm) from lens side of the tab. This is geometrically equivalent to a 10° cone.

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

symbol	parameter	min	typ	max	units	test conditions
Φ_e	Total radiant flux ⁽⁴⁾	2.0	3.0	-	mW	$I_F = 100 \text{ mA}$
E_e	Irradiance ⁽⁵⁾	300	-	-	$\mu\text{W}/\text{cm}^2$	$I_F = 100 \text{ mA}$
λ_P	Peak emission wavelength	-	850	-	nm	$I_F = 100 \text{ mA}$
I_R	Reverse current	-	-	10	μA	$V_R = 2 \text{ V}$
V_F	Forward voltage	-	-	2.2	V	$I_F = 100 \text{ mA}$
θ_{HP}	Emission angle at half power points	-	10	-	deg.	$I_F = 100 \text{ mA}$
t_r, t_f	Output rise and fall time	-	5.0	10	ns	$I_F = 100 \text{ mA}$

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