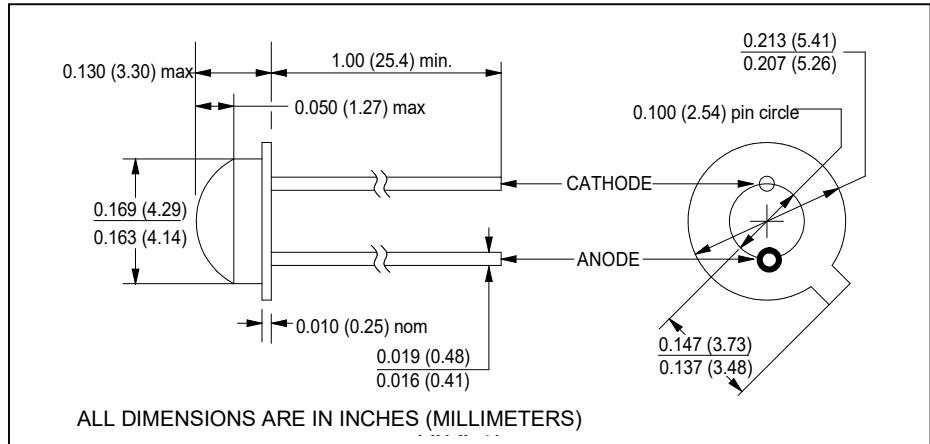


CLE130E

High Power AlGaAs/GaAs IRED

12-1304A



features

- exceptionally high power output
- 940 nm wavelength
- *no visible* light for night vision
- wide beam angle

description

The CLE130E is a high power AlGaAs/GaAs infrared-emitting diode. The TO-46 header provides the thermal environment for reliable operation over a wide temperature range and the epoxy-dome lens provides a broad radiation pattern. 940 nm wavelength is ideal for night vision applications due to no visible light emission. Contact Clairex for applications assistance.

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

storage temperature	-40°C to +85°C
operating temperature	-40°C to +85°C
junction temperature ⁽¹⁾	+125°C
lead soldering temperature ⁽²⁾	240°C
continuous forward current	100 mA
peak forward current ⁽³⁾	1 A
reverse voltage	3 V
power dissipation	175 mW ⁽⁴⁾

notes:

1. Maximum operating temperature of the metallurgical junction.
2. 0.06" (1.5 mm) from the header for 5 seconds maximum. Maximum temperature can be 260°C if wave soldering.
3. Pulsed condition only. Maximum pulse width is 2.0 μs at 2% duty cycle. Use good judgement when operating this device under these conditions. Thermal transients exceeding these restrictions can cause irreversible damage.
4. Derate linearly 2.58 mW/°C from 25°C free air temperature to $T_A = +85^\circ\text{C}$.
5. \varnothing_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.

electrical characteristics ($T_A = 25^\circ\text{C}$ unless otherwise noted)						
symbol	parameter	min	typ	max	units	test conditions
\varnothing_e	Total radiant flux ⁽⁵⁾	10	15	-	mW	$I_F = 100 \text{ mA}$
V_F	Forward voltage	-	-	1.75	V	$I_F = 100 \text{ mA}$
I_R	Reverse current	-	-	10	μA	$V_R = 3 \text{ V}$
λ_P	Peak emission wavelength	-	940	-	nm	$I_F = 100 \text{ mA}$
BW	Spectral bandwidth at half power points	-	50	-	nm	$I_F = 20 \text{ mA}$
Θ_{HP}	Emission angle at half power points	-	70	-	deg.	$I_F = 20 \text{ mA}$
t_r	Output rise time	-	700	-	ns	$I_F = 100 \text{ mA}$
t_f	Output fall time	-	700	-	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 product.