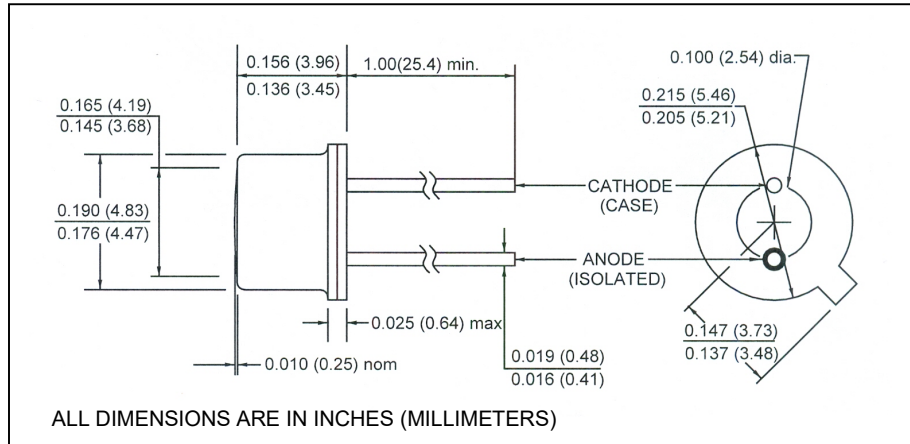


CLE130W

940nm High Efficiency AlGaAs/GaAs IRED

12-1301A



features

- wide emission angle
- no visible light for night vision
- excellent heat dissipation
- high power output

description

The CLE130W is a high efficiency infrared emitting diode. The new device features current state-of-the-art AlGaAs/GaAs technology for increased in quantum efficiency. 940nm wavelength is ideal for night vision applications due to no visible light emission. The chip substrate is N type material resulting in the case being common to the cathode. Contact Clairex for additional information.

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

storage temperature	-65°C to $+150^\circ\text{C}$
operating temperature	-55°C to $+125^\circ\text{C}$
lead soldering temperature ⁽¹⁾	260°C
maximum continuous current ⁽²⁾	100 mA
peak forward current (1.0 ms pulse width, 10% duty cycle)	1 A
maximum power dissipation ⁽³⁾	200 mW
reverse voltage	3 V

notes:

1. 0.06" (1.5 mm) from the header for 5 seconds maximum. Maximum temperature can be 260°C if wave soldering.
2. Derate linearly $0.90 \text{ mA}/^\circ\text{C}$ from 25°C free air temperature to $T_A = +125^\circ\text{C}$.
3. Derate linearly $1.80 \text{ mW}/^\circ\text{C}$ from 25°C free air temperature to $T_A = +125^\circ\text{C}$.
4. \varnothing_e is a measurement of total radiant flux within a $0.444''$ (1.128 cm) detector that is centered on the mechanical axis of the device at a distance of $0.175''$ (0.44 cm) 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 ⁽³⁾	6.0	-	-	mW	$I_F = 100 \text{ mA}$
V_F	Forward voltage	-	-	1.7	V	$I_F = 100 \text{ mA}$
I_R	Reverse current	-	-	10	μA	$V_R = 3.0 \text{ V}$
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.