

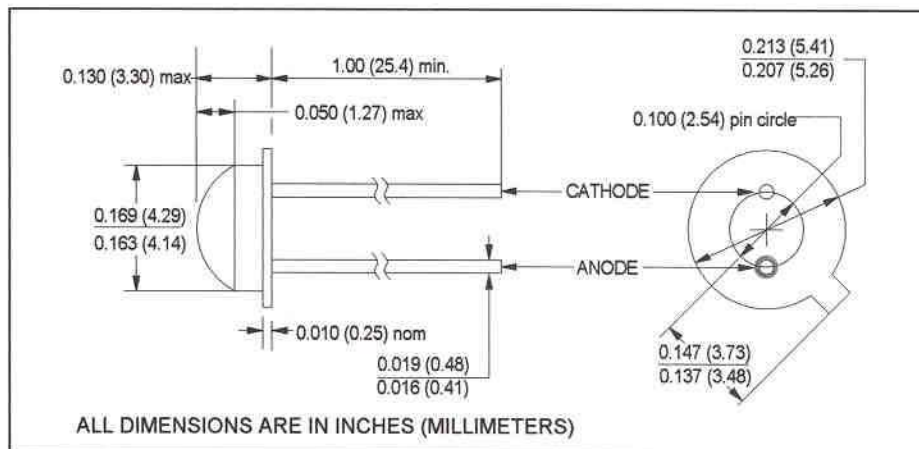
CLE330E

Super-efficient Aluminum Gallium Arsenide IRED



Clairex
Technologies, Inc.

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features

- exceptionally high power output
- 850nm wavelength
- >10MHz operation
- TO-46 epoxy-dome lens
- wide beam angle

description

The CLE330E is an advanced, high-efficiency, high speed, AlGaAs infrared-emitting diode. Output power typically exceeds standard AlGaAs emitters by 50%. The TO-46 header provides the thermal environment for reliable operation over a wide temperature range. The epoxy-dome lens provides a broad radiation pattern. Call Clairex for applications assistance

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

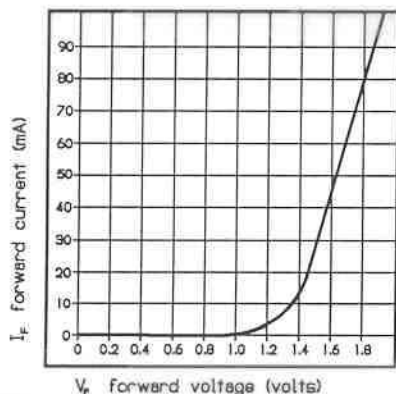
storage temperature.....	-65°C to $+100^\circ\text{C}$
operating temperature.....	-65°C to $+100^\circ\text{C}$
junction temperature ⁽¹⁾	$+125^\circ\text{C}$
lead soldering temperature ⁽²⁾	240°C
continuous forward current.....	100mA
peak forward current ⁽³⁾	3A
reverse voltage.....	3V
power dissipation.....	200mW ⁽⁴⁾

notes:

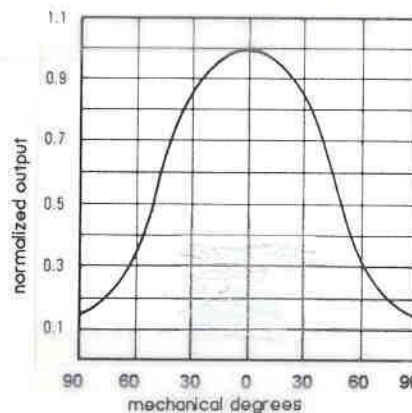
1. Maximum operating temperature of the metallurgical junction.
2. 0.06" (1.5mm) from the header for 5 seconds maximum. Maximum temperature can be 260°C if wave soldering.
3. Pulsed condition only. Maximum pulse width is 2.0 μs at 2% duty cycle. Use good judgement when operating this device under these conditions. Thermal transients exceeding these restrictions can cause irreversible damage.
4. Derate linearly 2.0mW/ $^\circ\text{C}$ from 25°C free air temperature to $T_A = +100^\circ\text{C}$.

fundamental characteristics

forward characteristics



beam angle



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

CLE330E

Super-efficient Aluminum Gallium Arsenide IRED



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

symbol	parameter	min	max	units	test conditions
P_O	Total power output ^(1, 2)	2.5	-	mW	$I_F = 20\text{mA}$
V_F	Forward voltage	-	1.6	V	$I_F = 20\text{mA}$
I_R	Reverse current	-	10	μA	$V_R = 3\text{V}$

- notes:** 1. Power output is measured with a total integrating sphere.
2. Other ranges of power output and test conditions can be specified. Call Clairex for applications assistance.

typical characteristics at $T_A = 25^\circ\text{C}$ (not guaranteed by test)

symbol	parameter	value	units	conditions
P_O	Total power output ^(note 1 above)	15.0	mW	$I_F = 100\text{mA}$
λ_P	Peak emission wavelength	850	nm	$I_F = 100\text{mA}$
BW	Spectral bandwidth at half power points	60	nm	$I_F = 100\text{mA}$
Θ_{HP}	Emission angle at half power points	100	deg.	$I_F = 100\text{mA}$
V_F	Forward voltage	1.9	V	$I_F = 100\text{mA}$
t_r	Radiation rise time	20	ns	$I_{F(PK)} = 100\text{mA}$, $f = 1\text{kHz}$, DC = 50%
t_f	Radiation fall time	40	ns	$I_{F(PK)} = 100\text{mA}$, $f = 1\text{kHz}$, DC = 50%

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