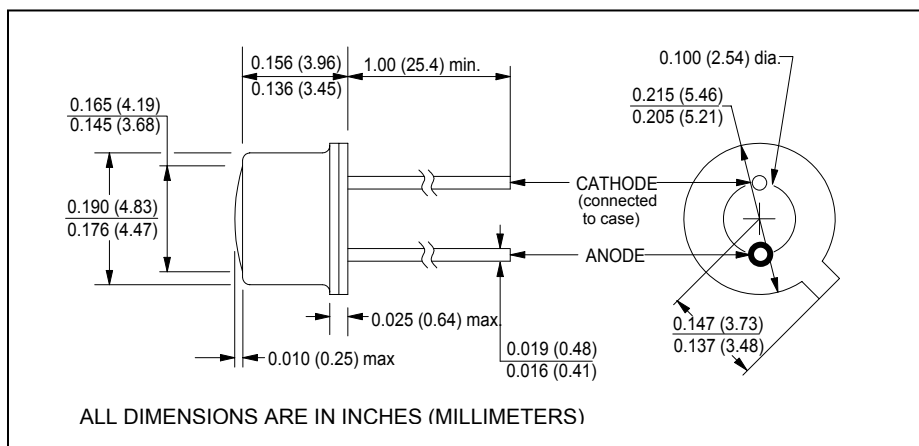


CLE330W

Super-efficient Aluminum Gallium Arsenide IRED



March, 2001



features

- wide emission angle
- excellent heat dissipation
- TO-46 header with flat lens can
- high power output

description

The CLE330W 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 wide emission angle provides relatively even illumination over a large area. For additional information, call Clairex.

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

storage temperature	-65°C to $+150^\circ\text{C}$
operating temperature	-65°C to $+150^\circ\text{C}$
junction temperature ⁽¹⁾	$+165^\circ\text{C}$
lead soldering temperature ⁽²⁾	240°C
reverse voltage	5V
maximum continuous forward current ⁽³⁾	100mA ⁽³⁾
peak forward current ⁽⁴⁾	3A
maximum power dissipation ⁽⁵⁾	200mW

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. Derate linearly 0.64mA/ $^\circ\text{C}$ from 25°C free air temperature to $T_A = +150^\circ\text{C}$.
4. Pulsed conditions 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.
5. Derate linearly 1.4mW/ $^\circ\text{C}$ from 25°C free air temperature to $T_A = +150^\circ\text{C}$.

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

symbol	parameter	min	typ	max	units	test conditions
P_O	Total power output	10	15	-	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	-	70	-	deg.	$I_F = 100\text{ma}$
I_R	Reverse current	-	-	10	μA	$V_R = 5.0\text{V}$
V_F	Forward voltage	-	-	1.9	V	$I_F = 100\text{ma}$
t_r	Output rise time (f = 1kHz, dc = 50%)	-	20	-	ns	$I_{F(PK)} = 100\text{ma}$
t_f	Output fall time (f = 1kHz, dc = 50%)	-	40	-	ns	$I_{F(PK)} = 100\text{ma}$

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

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Clairex Technologies, Inc.
Phone: 972-422-4676

1845 Summit Ave., #404
Fax: 972-423-8628

Plano, Texas 75074-8148
www.clairex.com