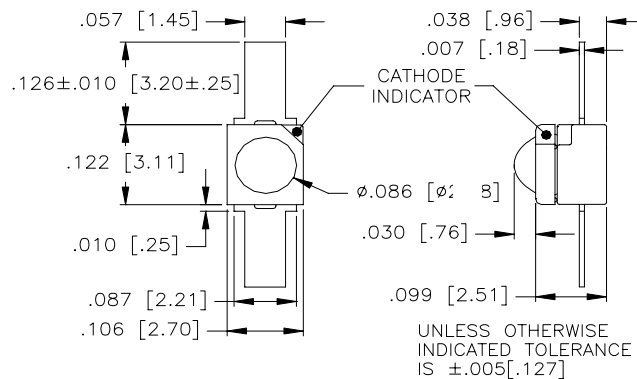


CLE310F

Super-efficient AlGaAs IRED Flat Lead PLCC Package



June, 2003



ALL DIMENSIONS ARE IN INCHES (MILLIMETERS)

features

- Flat lead PLCC package
- $\pm 5^\circ$ emission angle
- 850nm peak wavelength
- Exceptionally high power output
- Custom plastic lens

description

The CLE310F is an 850nm, high efficiency, AlGaAs infrared emitting diode. Output typically exceeds standard AlGaAs emitters by 50%. The CLE310F is intended for applications requiring high power output and narrow radiation pattern. Contact Clairex for alternative wavelength emitter chips, different lenses and lead configurations.

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

storage temperature	-40°C to +125°C
operating temperature	-40°C to +125°C
lead soldering temperature ⁽¹⁾	240°C
maximum continuous current ⁽²⁾	50mA
peak forward current (10 μ s pulse width, 100pps)	1A
maximum power dissipation ⁽³⁾	80mW
reverse voltage	3V

notes:

1. 0.06" (1.5mm) from case for 5 seconds maximum. Maximum temperature can be 260°C if reflow soldering.
2. Derate linearly 0.40mA/°C from 25°C free air temperature to $T_A = +125^\circ\text{C}$.
3. Derate linearly 0.64mW/°C from 25°C free air temperature to $T_A = +125^\circ\text{C}$.
4. Other wavelength die are available in this package.

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

symbol	parameter	min	typ	max	units	test conditions
P_O	Total power output ⁽⁵⁾	1.5	-	-	mW	$I_F = 20\text{mA}$
V_F	Forward voltage	-	1.4	1.6	V	$I_F = 20\text{mA}$
I_R	Reverse current	-	-	10	μA	$V_R = 3.0\text{V}$
λ_p	Peak emission wavelength	-	850	-	nm	$I_F = 20\text{mA}$
BW	Spectral bandwidth at half power points	-	50	-	nm	$I_F = 20\text{mA}$
θ_{HP}	Emission angle at half power points	-	10	-	deg.	$I_F = 20\text{mA}$
t_r	Radiation rise time ⁽⁶⁾	-	20	-	ns	$I_{F(PK)} = 20\text{mA}$
t_f	Radiation fall time ⁽⁶⁾	-	40	-	ns	$I_{F(PK)} = 20\text{mA}$

Note: 5. Power output is measured in an integrating sphere.

6. $f = 100\text{kHz}$, D.C. = 50%. Pulse generator t_r and $t_f < 200\text{ps}$.

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

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