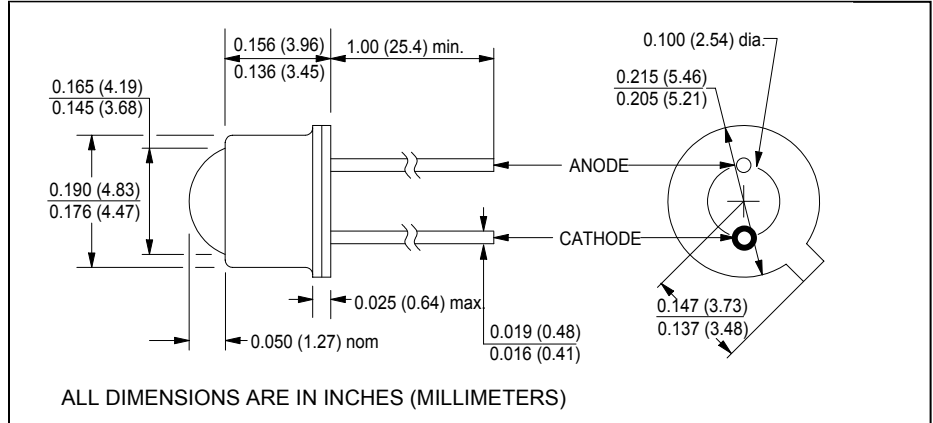


CLE331

AlGaAs Point Source IRED Collimating Lens



July, 2001



features

- 850nm wavelength
- 50MHz operation
- TO-46 hermetic package
- $\pm 2.5^\circ$ beam angle
- collimating lens

description

The CLE331 is an advanced, high efficiency, high speed, point source, AlGaAs infrared-emitting diode intended for use in applications requiring a uniform output radiation pattern. The point source die junction is 0.002" in diameter, and the dual aspheric lens provides a highly collimated radiation source. Beam pattern is very uniform without the bond wire shadow effect of standard infrared emitting diodes.

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

storage temperature	-55°C to +150°C
operating temperature	-40°C to +125°C
lead soldering temperature ⁽¹⁾	240°C
continuous forward current ⁽²⁾	100mA
reverse voltage	3V
maximum power dissipation ⁽³⁾	200mW

notes:

1. 0.06" (1.5mm) from the header for 5 seconds maximum. Maximum temperature can be 260°C if wave soldering.
2. Derate linearly 0.80mA/°C from 25°C free air temperature to $T_A = +125^\circ\text{C}$.
3. Derate linearly 1.6mW/°C from 25°C free air temperature to $T_A = +125^\circ\text{C}$.

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

symbol	parameter	min	typ	max	units	test conditions
P_O	Total power output ⁽⁴⁾	2.0	3.0	-	mW	$I_F = 100\text{mA}$
E_e	Irradiance ⁽⁵⁾	300	-	-	$\mu\text{W}/\text{cm}^2$	$I_F = 100\text{mA}$
λ_P	Peak emission wavelength	-	850	-	nm	$I_F = 100\text{mA}$
I_R	Reverse current	-	-	10	μA	$V_R = 3.0\text{V}$
V_F	Forward voltage	-	-	2.2	V	$I_F = 100\text{mA}$
θ_{HP}	Emission angle at half power points	-	12	-	deg.	$I_F = 100\text{mA}$
t_r, t_f	Output rise and fall time	-	5.0	10	ns	$I_F = 100\text{mA}$

- notes:**
4. Power output is measured in an integrating sphere.
 5. Power/unit area measured within a 0.444" (1.128cm) diameter area, centered on the mechanical axis of the device and spaced 2.54" (6.45cm) from lens side of the tab. This is geometrically equivalent to a 10° cone.