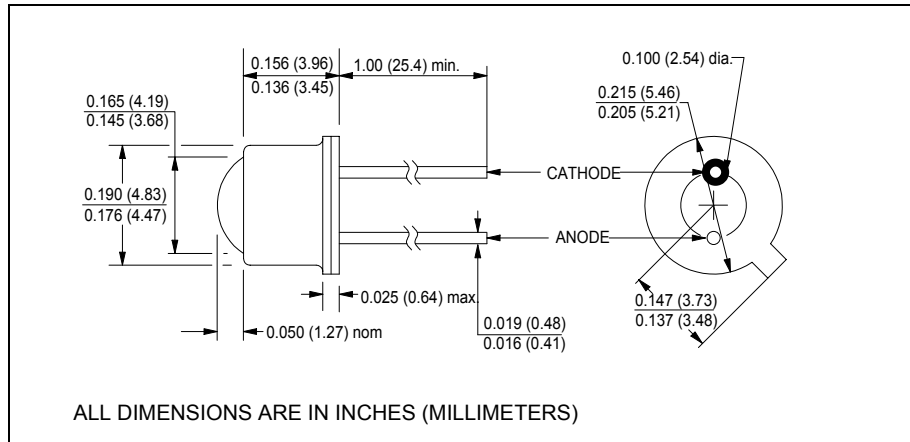


CLE333

850nm Point Source Emitter Collimated Radiation



May, 2005



features

- $< \pm 1^\circ$ beam angle
- TO-46 hermetic package
- anode connected to case
- high power output
- RoHS compliant

description

The CLE333 contains a N side up, AlGaAs, 850nm, point source die. A special lens provides a sharply focused beam pattern capable of projecting a spot, 3" (76mm) in diameter on a surface 10 feet (3.05m) away. Designed primarily for the encoder industry, the CLE333 has wide application anywhere a very narrow beam pattern is required.

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

storage temperature	-65°C to +150°C
operating temperature	-65°C to +125°C
lead soldering temperature ⁽¹⁾	260°C
continuous forward current ⁽²⁾	100mA
peak forward current (1.0ms pulse width, 10% duty cycle).....	1A
reverse voltage	5V
continuous power dissipation ⁽³⁾	200mW

notes:

1. 0.06" (1.5mm) from the header for 5 seconds maximum.
2. Derate linearly 0.80mA/°C free air temperature to $T_A = +125^\circ\text{C}$.
3. Derate linearly 1.60mW/°C free air temperature to $T_A = +125^\circ\text{C}$.
4. This device is sensitive to transients. Use series resistor or power supply load resistor when applying power.

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

symbol	parameter	min	typ	max	units	test conditions
P_O	Total power output	-	3.0	-	mW	$I_F = 100\text{mA}$
E_e	Irradiance ⁽⁵⁾	0.35	0.45	-	mW/cm ²	$I_F = 50\text{mA}$
λ_P	Peak emission wavelength	830	850	870	nm	$I_F = 50\text{mA}$
I_R	Reverse current	-	-	10	μA	$V_R = 5\text{V}$
V_F	Forward voltage	-	1.8	2.2	V	$I_F = 100\text{mA}$
θ_{HP}	Emission angle at half power points	-	2.0	-	deg.	$I_F = 50\text{mA}$
t_r, t_f	Radiation rise and fall time	-	5.0	6.0	ns	$I_F = 50\text{mA}$, 10% - 90%, 5mA prebias

NOTE: 5. E_e is a measure of irradiance (power/unit area) within a 0.444" (1.128cm) diameter area, centered on the mechanical axis of the device and spaced 2.54" (6.45cm) from the lens side of the tab. This is geometrically equivalent to a 10° cone.

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

Revised 4/27/06