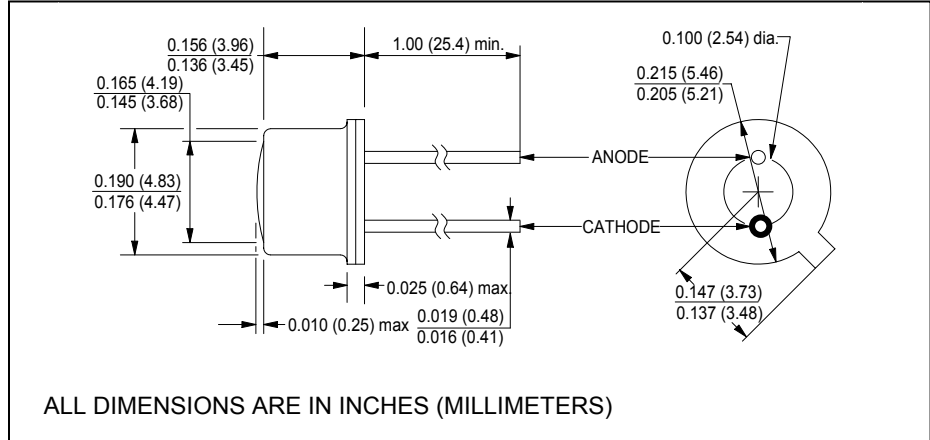
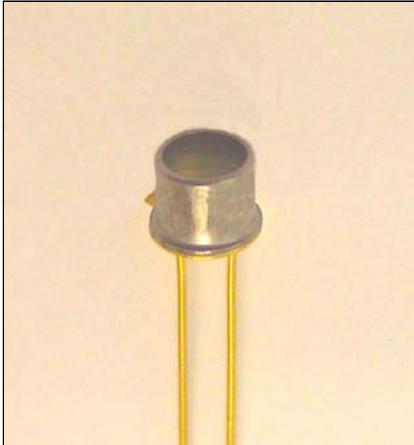


CLE331W

Aluminum Gallium Arsenide IRED Point Source Die



February, 2006



features

- 850nm wavelength
- 50MHz operation
- TO-46 hermetic package
- RoHS compliant
- Flat window can

description

The CLE331W is an advanced, high efficiency, high speed, point source, AlGaAs infrared-emitting diode intended for applications requiring a uniform output radiation pattern. The point source die junction is typically 0.002" in diameter.

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 $+125^\circ\text{C}$ |
| 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/ $^\circ\text{C}$ from 25°C free air temperature to $T_A = +125^\circ\text{C}$.
3. Derate linearly 1.6mW/ $^\circ\text{C}$ 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 | - | 3.0 | - | mW | $I_F = 100\text{mA}$ |
| E_e | Irradiance ⁽⁴⁾ | 30 | - | - | $\mu\text{W}/\text{cm}^2$ | $I_F = 100\text{mA}$ |
| 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 | - | 70 | - | 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/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.