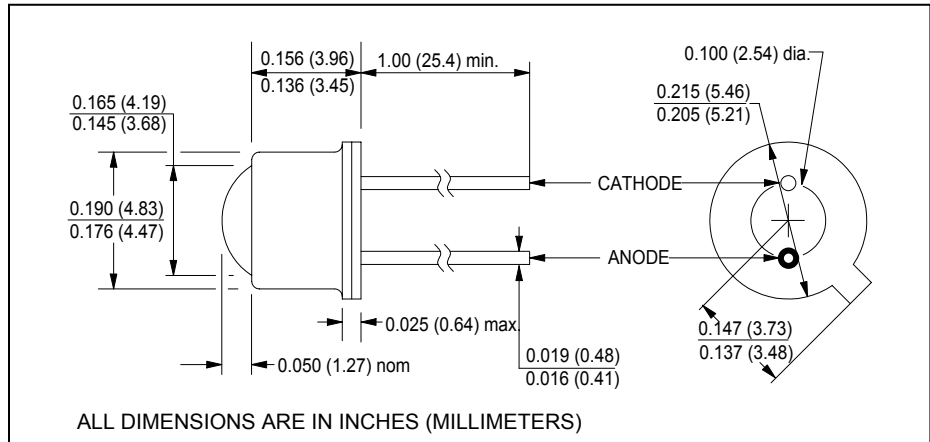


## Super-efficient Aluminum Gallium Arsenide IRED



**Clairex®**  
Technologies, Inc.

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## features

- 150°C operating temperature
- exceptionally high power output
- 850nm wavelength
- >10MHz operation
- TO-46 aspheric lens
- collimated beam

**description**

The CLE335 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 an extremely wide temperature range. The lens is designed to provide a highly collimated radiation pattern from 0.10" to 0.20" from the lens tip. Call Clairex for assistance.

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

storage temperature .....	-65°C to +150°C
operating temperature .....	-65°C to +150°C
junction temperature <sup>(1)</sup> .....	+165°C
lead soldering temperature <sup>(2)</sup> .....	240°C
continuous forward current <sup>(3)</sup> .....	100mA
peak forward current <sup>(4)</sup> .....	3A
reverse voltage .....	3V
power dissipation .....	200mW <sup>(5)</sup>

**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/°C from 25°C free air temperature to  $T_A = +150^\circ\text{C}$ .
4. Pulsed condition only. Maximum pulse width is 2.0μs 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/°C from 25°C free air temperature to  $T_A = +150^\circ\text{C}$ .

**typical characteristics at  $T_A = 25^{\circ}\text{C}$**  (not guaranteed by test)

symbol	parameter	value	units	conditions
$E_e$	Typical irradiance <sup>(1)</sup>	3.5	mW/cm <sup>2</sup>	I <sub>F</sub> = 100mA
$\lambda_p$	Peak wavelength emission	850	nm	I <sub>F</sub> = 100mA
BW	Spectral bandwidth at half power points	60	nm	I <sub>F</sub> = 100mA
V <sub>F</sub>	Forward voltage	1.9	V	I <sub>F</sub> = 100mA
$\theta_{HP}$	Emission angle at half power points	12	deg.	I <sub>F</sub> = 100mA
t <sub>r</sub>	Radiation rise time	20	ns	I <sub>F(PK)</sub> = 100mA, f = 1kHz, DC = 50%
t <sub>f</sub>	Radiation fall time	40	ns	I <sub>F(PK)</sub> = 100mA, f = 1kHz, DC = 50%

**Note:** 1.  $E_e$  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 on 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.