

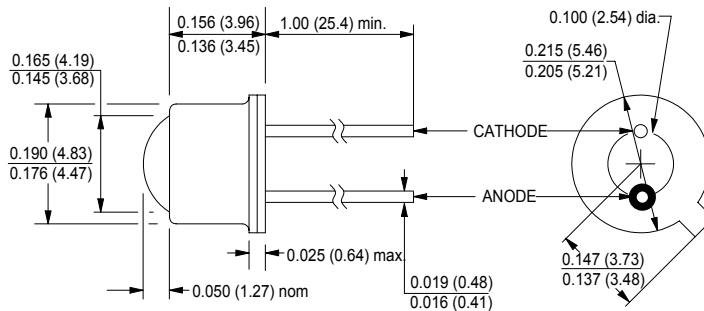
CLE135, CLE130E, CLE130W

940nm High Efficiency
GaAs/AlGaAs IREDS

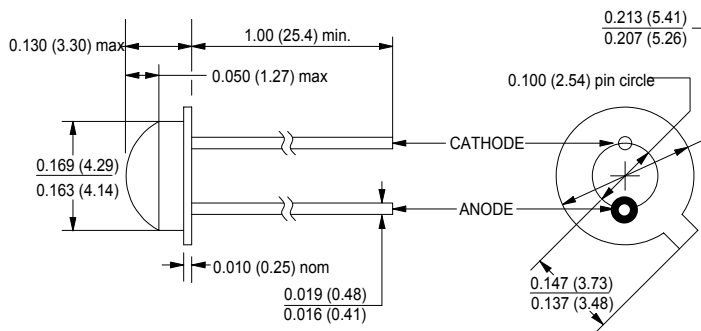
UPGRADED SERIES



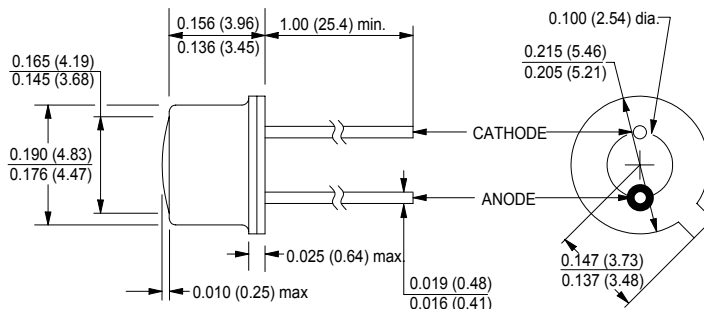
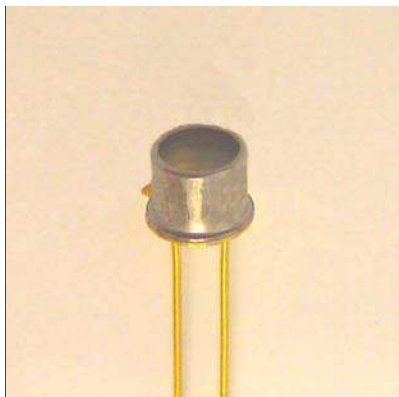
July, 2005



CLE135



CLE130E



ALL DIMENSIONS ARE IN
INCHES (MILLIMETERS)

CLE130W

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

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CLE135, CLE130E, CLE130W

940nm High Efficiency GaAs/AlGaAs IREDS



features

- higher power output
- cathode connected to case
- TO-46 header with three lens options
- different package styles provide flexible design options

description

The original Clairex CLE130 series has been upgraded. The new series features current state of the art GaAs/AlGaAs technology for increased quantum efficiency. The chip substrate is N type material resulting in the case being common to the cathode. The original configuration can still be supplied as a special order. Three different lens options are offered. Contact Clairex for other electrical and package options.

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

storage temperature	
CLE135 and CLE130W	-65°C to +150°C
CLE130E	-40°C to +125°C
operating temperature	
CLE135 and CLE130W	-65°C to +125°C
CLE130E	-40°C to +100°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 from 25°C free air temperature to $T_A = +125^\circ\text{C}$.
3. Derate linearly 1.60mW/°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
CLE130 Series						
V_F	Forward voltage	-	1.5	1.8	V	$I_F = 100\text{mA}$
I_R	Reverse current	-	-	10	μA	$V_R = 3\text{V}$
λ_p	Peak wavelength	-	940	-	nm	$I_F = 100\text{mA}$
BW	Spectral bandwidth	-	50	-	nm	$I_F = 20\text{mA}$
t_r, t_f	Output rise and fall time	-	700	-	ns	$I_F = 100\text{mA}$
CLE130E						
P_O	Total output power	-	12.5	-	mW	$I_F = 100\text{mA}$
P_O	Total output power	2.0	2.5	-	mW	$I_F = 20\text{mA}$
θ_{HP}	Emission angle at half power points	-	80	-	deg.	$I_F = 20\text{mA}$
CLE130W						
P_O	Total output power	-	10	-	mW	$I_F = 100\text{mA}$
P_O	Total output power	1.5	2.0	-	mW	$I_F = 20\text{mA}$
θ_{HP}	Emission angle at half power points	-	70	-	deg.	$I_F = 20\text{mA}$
CLE135						
P_O	Total output power	-	10	-	mW	$I_F = 100\text{mA}$
E_e	Irradiance ⁽⁴⁾	-	2.0	-	mW/cm^2	$I_F = 100\text{mA}$
E_e	Irradiance ⁽⁴⁾	0.4	0.5	-	mW/cm^2	$I_F = 20\text{mA}$
θ_{HP}	Emission angle at half power points	-	22	-	deg.	$I_F = 20\text{mA}$

note: 4. 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.

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