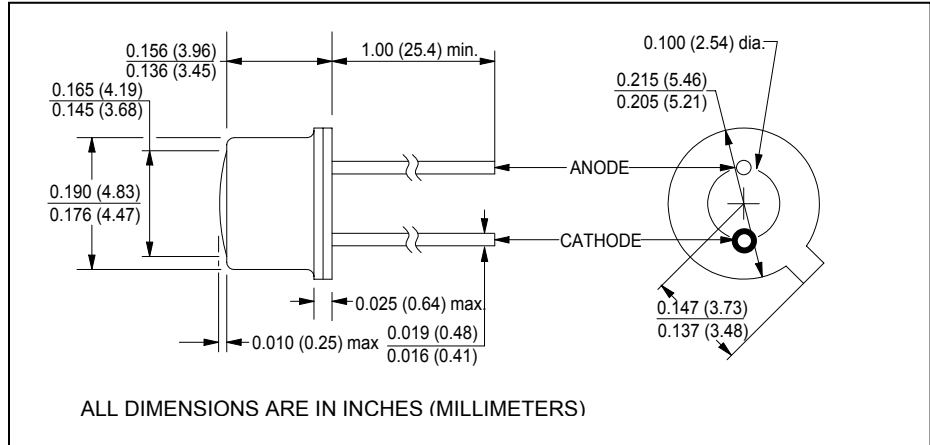


# CLE230W, CLE231W, CLE232W

## High Power Aluminum Gallium Arsenide IREDS



July, 2001



### features

- wide emission angle
- TO-46 hermetically sealed package
- excellent heat dissipation
- high power output

### description

The CLE230W series are AlGaAs infrared emitting diodes mounted in flat window TO-46 hermetic packages. The wide emission angle provides even illumination over a large area. The series are spectrally and mechanically matched to the CLT130W phototransistor series. For additional information, call Clairex.

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

storage temperature .....	$-55^\circ\text{C}$ to $+150^\circ\text{C}$
operating temperature .....	$-55^\circ\text{C}$ to $+125^\circ\text{C}$
lead soldering temperature <sup>(1)</sup> .....	$240^\circ\text{C}$
maximum continuous current <sup>(2)</sup> .....	100mA
peak forward current (10 $\mu\text{s}$ pulse width, 100pps) .....	10A
maximum power dissipation <sup>(3)</sup> .....	200mW
reverse voltage .....	3V

### notes:

1. 0.06" (1.5mm) from the header for 5 seconds maximum. Maximum temperature can be  $260^\circ\text{C}$  if wave soldering.
2. Derate linearly 0.80mA/ $^\circ\text{C}$  from  $25^\circ\text{C}$  free air temperature to  $T_A = +125^\circ\text{C}$ .
3. Derate linearly 1.6mW/ $^\circ\text{C}$  from  $25^\circ\text{C}$  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
$E_e$	Irradiance <sup>(4,5)</sup>	CLE230W	1.5	-	-	mW/cm <sup>2</sup>	$I_F = 100\text{mA}$
		CLE231W	3.5	-	-		
		CLE232W	5.0	-	-		
$V_F$	Forward voltage <sup>(4,5)</sup>		-	-	2.0	V	$I_F = 100\text{mA}$
$I_R$	Reverse current		-	-	10	$\mu\text{A}$	$V_R = 3.0\text{V}$
$\lambda_P$	Peak emission wavelength		-	890	-	nm	$I_F = 100\text{mA}$
BW	Spectral bandwidth at half power points		-	80	-	nm	$I_F = 100\text{mA}$
$\Theta_{HP}$	Emission angle at half power points		-	70	-	deg.	$I_F = 100\text{mA}$
$t_r$	Output rise time		-	500	-	ns	$I_F = 100\text{mA}$
$t_f$	Output fall time		-	250	-	ns	$I_F = 100\text{mA}$

- note:** 4.  $E_e$  is a measure of irradiance (power/unit area) within a .25" (6.35mm) diameter area, centered on the mechanical axis of the device and spaced .466" (11.8mm) from the lens side of the tab. This is geometrically equivalent to a  $30^\circ$  cone.  
 5. Measurement taken at trailing edge of 100 $\mu\text{s}$  pulse with a duty cycle of 0.1%.

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

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