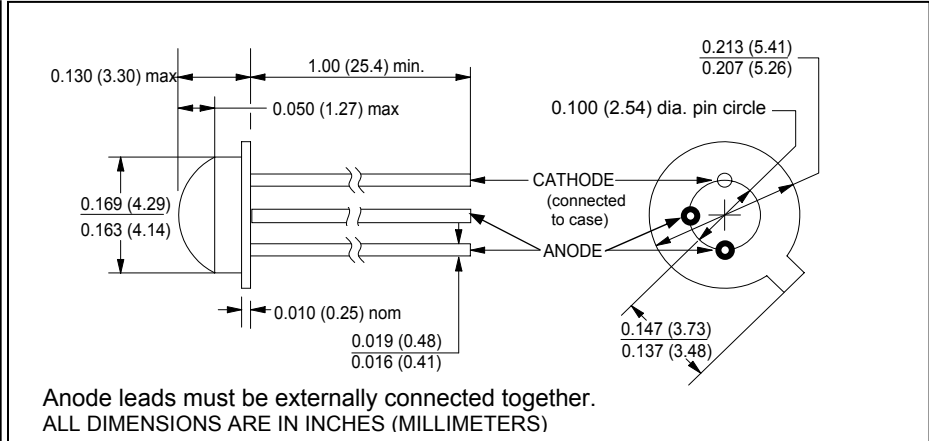


# CLE334E

## Very High Output Aluminum Gallium Arsenide Quad Chip IRED Array



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### features

- 850nm wavelength
- TO-46 with epoxy-dome lens
- very wide emission angle
- > 10MHz operation
- cathode connected to case

### description

The CLE334E is an advanced, high efficiency, high speed, AlGaAs infrared-emitting diode with four times the emitting surface of the typical AlGaAs emitter. High power output is achieved with four equally spaced anode contacts for higher current distribution. Anodes contacts are bonded in pairs, each pair bonded to a separate lead. Chip size is 0.030" by 0.030". The TO-46 header provides the thermal environment for reliable operation over a wide temperature range.

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

storage temperature .....	$-40^\circ\text{C}$ to $+125^\circ\text{C}$
operating temperature .....	$-40^\circ\text{C}$ to $+100^\circ\text{C}$
lead soldering temperature <sup>(1)</sup> .....	$260^\circ\text{C}$
continuous forward current <sup>(2)(4)</sup> .....	500mA
peak forward current (1.0ms pulse width, 10% duty cycle) .....	4A
reverse voltage .....	5V
continuous power dissipation <sup>(3)</sup> .....	500mW

### notes:

1. 0.06" (1.5mm) from the header for 5 seconds maximum
2. Derate linearly 5.33mA/ $^\circ\text{C}$  from  $25^\circ\text{C}$  free air temperature to  $T_A = +100^\circ\text{C}$ .
3. Derate linearly 5.33mW/ $^\circ\text{C}$  from  $25^\circ\text{C}$  free air temperature to  $T_A = +100^\circ\text{C}$ .
4. Operation at this level requires a proper heat sink..

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

symbol	parameter	min	typ	max	units	test conditions
$P_O$	Power output <sup>(6)</sup>	-	25	-	mW	$I_F = 100\text{mA}$
$V_F$	Forward voltage	-	1.0	1.9	V	$I_F = 100\text{mA}$
$I_R$	Reverse current	-	-	10	$\mu\text{A}$	$V_R = 5\text{V}$
$\lambda_P$	Peak emission wavelength	-	850	-	nm	$I_F = 100\text{mA}$
BW	Spectral bandwidth at half power points	-	35	-	nm	$I_F = 100\text{mA}$
$\Theta_{HP}$	Emission angle at half power points	-	100	-	deg.	$I_F = 100\text{mA}$
$t_r$	Radiation rise time	-	20	-	ns	$I_{F(PK)} = 100\text{mA}$ , $f = 1\text{kHz}$ , D.C. = 50%
$t_f$	Radiation fall time	-	40	-	ns	$I_{F(PK)} = 100\text{mA}$ , $f = 1\text{kHz}$ , D.C. = 50%

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

Revised 3/15/06