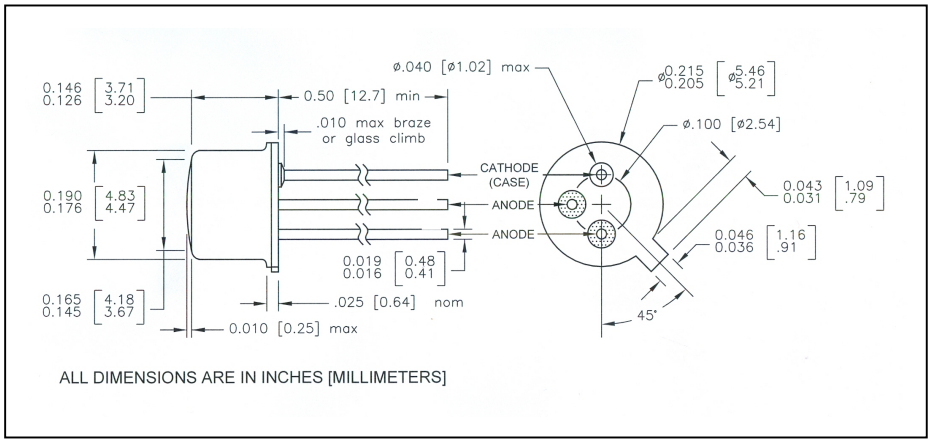
CLE334W

High Output AlGaAs Large IRED Die

CLAIREX® SEMICONDUCTOR

12-3341A



Features

- wide emission angle
- high power output
- 850nm wavelength
- cathode connected to case
- TO-46 header with flat lens can
- hermetic style package

description

The CLE334W is an advanced, high efficiency, AlGaAs infrared-emitting diode. It consists of a large IRED with four contact points that provide for even current density and maximum efficiency. Die size is 0.026 inch [0.66 mm] by 0.026 inch [0.66 mm]. The TO-46 header provides reliable operation over a wide temperature range. The wide emission angle provides relatively even illumination over a large area.

absolute maximum ratings (T_A = 25°C unless otherwise stated)

storage temperature	-55°C to +150°C
operating temperature	-55°C to +125°C
lead soldering temperature (1)	260°C
continuous forward current (2)(4)	300 mA
peak forward current (1.0ms pulse width, 10% duty cycle)	1 A
reverse voltage	3 V
continuous power dissipation (3)	500 mW

notes:

1. 0.06 inch (1.5mm) from the header for 5 seconds maximum.
2. Derate linearly 4.0 mA/°C from 25°C free air temperature to T_A = +125°C.
3. Derate linearly 4.0 mW/°C from 25°C free air temperature to T_A = +125°C.
4. Unit must be properly heat sinked to be operated at this level.
5. Anode leads must be externally connected together.
6. $Ø_e$ is a measurement of total radiant flux within a 0.444 inch [1.128 cm] detector that is centered on the mechanical axis of the device at a distance of 0.267 inch [0.678 cm] from the lens side of the tab to the active area of the detector.

electrical characteristics (T_A = 25°C unless otherwise noted)

symbol	parameter	min	typ	max	units	test conditions
$Ø_e$	Total radiant flux (6)	15	20	-	mW	I_F = 300 mA
V_F	Forward voltage (5)	-	1.7	2.0	V	I_F = 300 mA
I_R	Reverse current	-	-	10	µA	V_R = 3 V
λ_p	Peak emission wavelength	-	850	-	nm	I_F = 100 mA
BW	Spectral bandwidth at half power	-	35	-	nm	I_F = 100 mA
θ_{HP}	Emission angle at half power points	-	60	-	deg.	I_F = 100 mA
t_r	Radiation rise time	-	20	-	ns	$I_{F(PK)}$ = 100 mA, f = 1 kHz, D.C. = 50%
t_f	Radiation fall time	-	40	-	ns	$I_{F(PK)}$ = 100 mA, f = 1 kHz, D.C. = 50%

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