CLE390

850nm IRED
with Photodiode Monitored Output

Clairex® Technologies, Inc.

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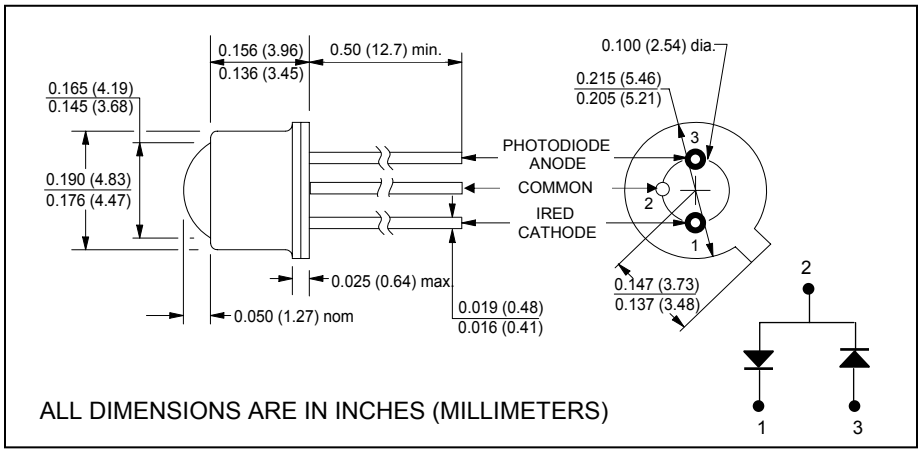

features

- TO-46 hermetic package
- ± 11° emitting angle
- COMMON connected to case
- RoHS compliant

description

The CLE390 contains an advanced, high efficiency, high output, AlGaAs 850nm IRED bonded to a ceramic substrate, and a photodiode, both mounted on a TO-46 header. Circuitry can be developed to adjust the I_F on the IRED as it ages to ensure constant output level. Contact Clairex for additional information.

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

storage temperature ..... -65°C to +150°C
operating temperature ..... -65°C to +125°C
lead soldering temperature[1] ..... 260°C

IRED ONLY

continuous forward current[2][4] 100mA
peak forward current (10ms pulse width, 0.5% duty cycle) 1A
reverse voltage 5.0V
continuous power dissipation[3][4] 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°C.
3. Derate linearly 1.60mW/°C from 25°C free air temperature to T_A = +125°C.
4. Operation at this level requires a proper heat sink.

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

symbol	parameter	min	typ	max	units	test conditions
LED						
E_e	Irradiance	1.0	1.5	-	mW/cm^2	I_F = 100mA
V_F	Forward voltage	-	1.7	1.9	V	I_F = 100mA
I_R	Reverse current	-	-	10	µA	V_R = 5V
λ_P	Peak emission wavelength	-	850	-	nm	I_F = 100mA
BW	Spectral bandwidth	-	50	-	nm	I_F = 100mA
θ_{HP}	Emission angle at half power points	-	22	-	deg.	I_F = 100mA
t_r/t_f	Output rise/fall time	-	20/40	-	ns	I_F = 100mA
Photodiode						
I_{SC}	Short circuit current	1.0	2.3	-	µA	E_e = 0.5mW/cm^2
I_D	Dark current	-	-	10	nA	E_e = 0, V_R = 5V
V_{BR}	Reverse breakdown voltage	80	-	-	V	I_R = 30µA
Coupled						
I_L	Coupled light current	0.25	0.5	-	mA	I_F = 100mA

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