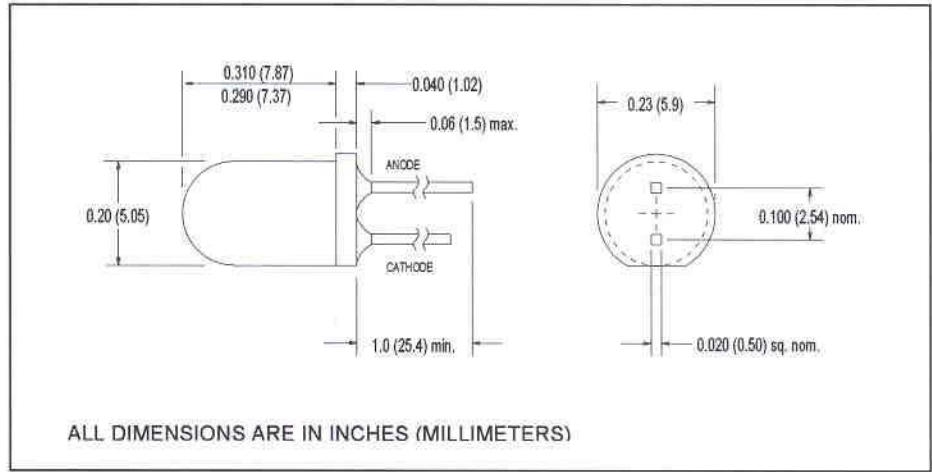


CLD370F

Plastic PIN Photodiode



July, 1999



features

- fast switching speed
- low junction capacitance
- 850 nm peak response
- sharp cutoff to visible wavelengths
- large photosensitive area
- $\pm 30^\circ$ acceptance angle

description

The CLD370F is a high gain silicon photodiode mounted in a T-1 $\frac{1}{4}$ dark plastic package. The chip has an active area of approximately 0.080" x 0.080" (4 square mm) and is intended for use as an infrared sensor. The dark tinting of the package effectively attenuates wavelengths shorter than 700nm which eliminates most visible light interference.

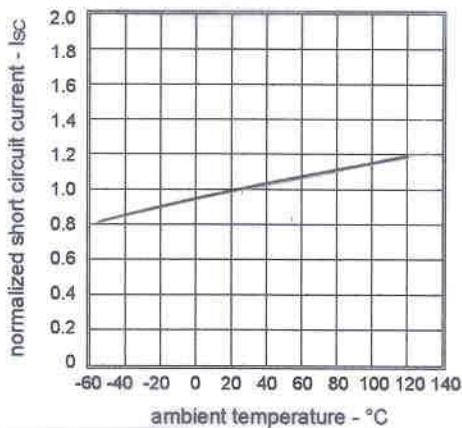
absolute maximum ratings ($T_A = 25^\circ\text{C}$ unless otherwise stated)

storage temperature.....	-55°C to +100°C
operating temperature.....	-55°C to +100°C
lead soldering temperature ⁽¹⁾	240°C
total continuous power dissipation ⁽²⁾	150mW

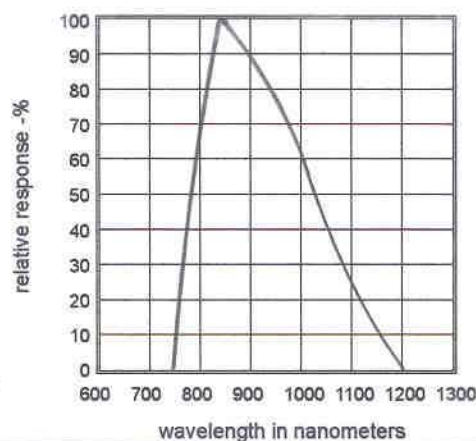
notes:

1. 0.06" (1.5mm) from the header for 5 seconds maximum. Maximum temperature can be 260°C if wave soldering.
2. Derate linearly 1.6 mW/°C from 25°C free air temperature to $T_A = +100^\circ\text{C}$.
3. Protruding resin under flange is 0.06" (1.5mm) max.

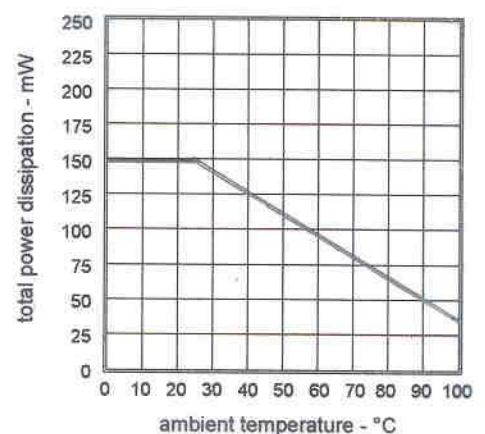
normalized short circuit current vs ambient temp.



fundamental characteristics spectral response



total power dissipation vs ambient temp.



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

Revised 12/01/04

CLD370F

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electrical characteristics ($T_A = 25^\circ\text{C}$ unless otherwise noted)						
symbol	parameter	min	typ	max	units	test conditions
I_{SC}	Short-circuit current ⁽¹⁾	5.0	10.0	-	μA	$V_R = 5\text{V}, E_e = 0.1\text{mW}/\text{cm}^2$
		-	60.0	-	μA	$V_R = 5\text{V}, E_e = 1.0\text{mW}/\text{cm}^2$
I_D	Dark current	-	-	30	nA	$V_R = 10\text{V}, E_e = 0$
V_{BR}	Reverse breakdown	30	-	-	V	$I_R = 100\mu\text{A}, E_e = 0$
C_J	Junction capacitance	-	25	-	pF	$V_R = 3\text{V}, E_e = 0, f = 1\text{MHz}$
V_O	Open circuit voltage ⁽¹⁾	-	350	-	mV	$E_e = 0.1\text{mW}/\text{cm}^2$
θ_{HP}	Total angle at half sensitivity points	-	60	-	deg.	
t_r, t_f	Output rise and fall time ⁽¹⁾	-	30	-	ns	$R_L = 1\text{k}\Omega, V_R = 10\text{V}$

note: 1. Radiation source is an aluminum gallium arsenide IRED operating at a peak emission wavelength of 850nm.

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