

Clairex CLD171 Photodiode Datasheet

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The CLD171 and CLD171R, are 0.122" x 0.122" active area silicon photodiodes featuring high linearity and low dark current. They are epoxy encapsulated for lower cost applications. Wide acceptance angle permits use in IR air communications, ambient light detection, safety and monitoring, security systems, etc.

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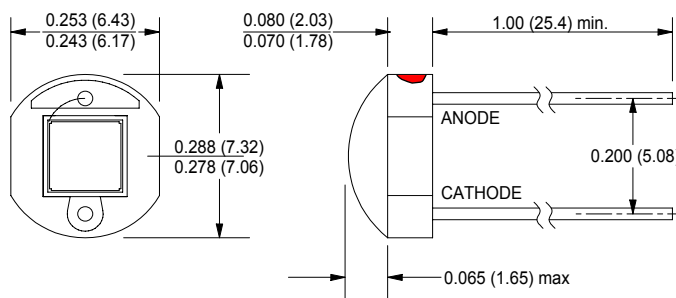
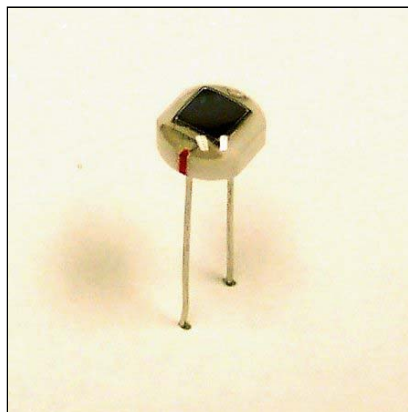
CLD171

Large Active Area Silicon Planar photodiode

This product is tested to satisfy the conditions of both the CLD171 and the CLD171R.



September, 2002



Anode lead is identified by red dot on side of substrate.
ALL DIMENSIONS ARE IN INCHES (MILLIMETERS)

features

- 130° acceptance angle
- 860nm peak response
- 125°C operating temperature
- usable for visible through near-IR

description

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

storage temperature.....	-40°C to +125°C
operating temperature.....	-40°C to +125°C
lead soldering temperature ⁽¹⁾	260°C
reverse voltage.....	30V
continuous power dissipation ⁽²⁾	200mW

notes:

1. 0.06" (1.5mm) from the header for 5 seconds maximum.
2. Derate linearly 1.6mW/°C free air temperature to $T_A = +125^\circ\text{C}$.

If higher operating temperature is required, see the CLD160.

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

symbol	parameter	min	typ	max	units	test conditions
I_{SC}	Short-circuit current ⁽³⁾	-	70	-	μA	$V_{BIAS} = 0\text{V}$, $E_e = 5\text{mW}/\text{cm}^2$
I_D	Dark current	-	-	10	nA	$V_F = 100\text{mV}$, $E_e = 0$
		-	-	5.0	nA	$V_R = 15\text{V}$, $E_e = 0$
V_O	Open circuit voltage ⁽³⁾	-	0.35	-	V	$E_e = 5\text{mW}/\text{cm}^2$
V_{BR}	Reverse breakdown	25	-	-	V	$I_R = 100\mu\text{A}$
C_J	Junction capacitance	-	-	200	pF	$V_{BIAS} = 0\text{V}$, $f = 1\text{MHz}$
t_r , t_f	Output rise and fall time ⁽⁴⁾	-	-	12	μs	$R_L = 1\text{k}\Omega$
Θ_{HP}	Total angle at half sensitivity points	-	130	-	deg.	

note: 3. Radiation source is a frosted tungsten lamp at a color temperature of 2854K or equivalent.

4. Radiation source is an AlGaAs IRED operating at a peak emission wavelength of 880nm and $E_e = 20\text{mW}/\text{cm}^2$.

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

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