

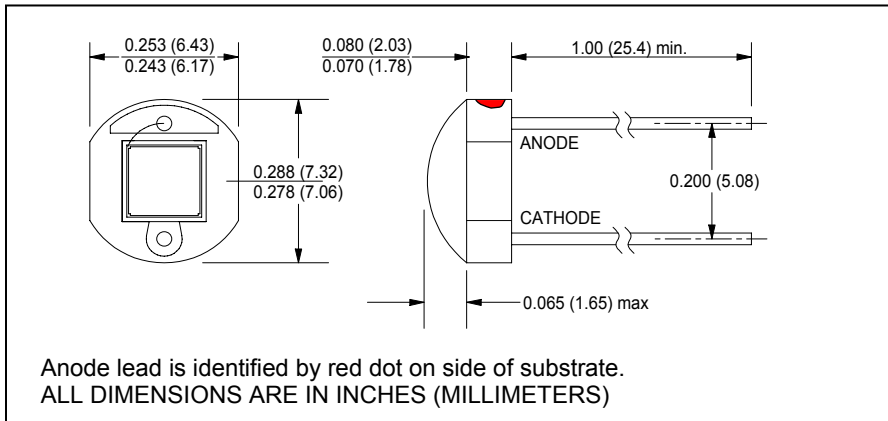
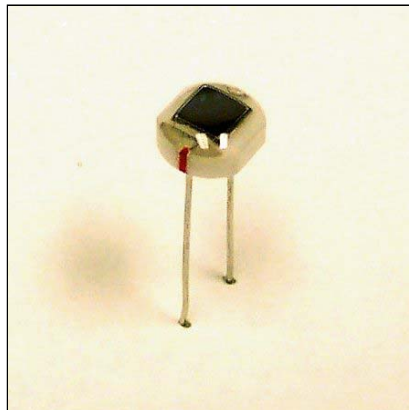
# CLD171

## Large Active Area Silicon Planar photodiode

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



September, 2002



### features

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

### 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 <sup>(1)</sup>	260°C
reverse voltage	30V
continuous power dissipation <sup>(2)</sup>	200mW

### description

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.

### 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 <sup>(3)</sup>	-	70	-	$\mu\text{A}$	$V_{BIAS} = 0\text{V}$ , $E_e = 5\text{mW}/\text{cm}^2$
$I_D$	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 <sup>(3)</sup>	-	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 <sup>(4)</sup>	-	-	12	$\mu\text{s}$	$R_L = 1\text{k}\Omega$
$\Theta_{HP}$	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.

Revised 3/15/06

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