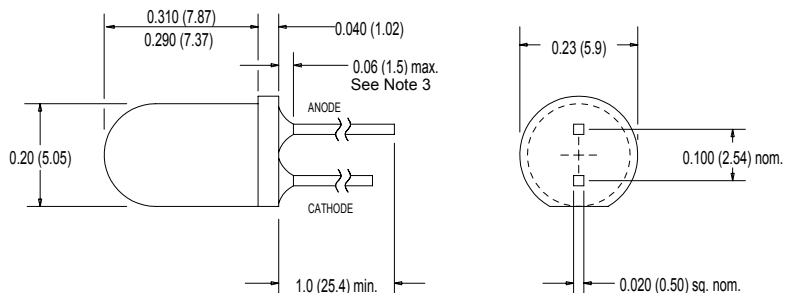


# CLD370F

## Plastic PIN Photodiode



December, 2001



ALL DIMENSIONS ARE IN INCHES (MILLIMETERS)

### features

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

### description

The CLD370F is a high gain silicon photodiode mounted in a T-1 $\frac{1}{4}$  (5mm) 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 eliminating most visible light interference.

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

storage temperature.....	-40°C to +125°C
operating temperature.....	-40°C to +100°C
lead soldering temperature <sup>(1)</sup> .....	260°C
continuous power dissipation <sup>(2)</sup> .....	150mW

### notes:

1. 0.06" (1.5mm) from the header for 5 seconds maximum
2. Derate linearly 1.6mW/°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.

### 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>(1)</sup>	5.0 -	10.0 60.0	- -	$\mu\text{A}$ $\mu\text{A}$	$V_R = 5\text{V}$ , $E_e = 0.1\text{mW}/\text{cm}^2$ $V_R = 5\text{V}$ , $E_e = 1.0\text{mW}/\text{cm}^2$
$I_D$	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	-	350	-	mV	$E_e = 0.1\text{mW}/\text{cm}^2$
$\Theta_{HP}$	Total angle at half sensitivity points	-	60	-	deg.	
$t_r$ , $t_f$	Output rise and fall time <sup>(1)</sup>	-	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 wavelength of 850nm.

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

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