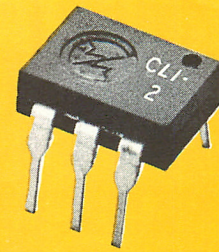


# Product Data

CLI-2  
CLI-3  
CLI-5  
CLI-10



## Clairex Opto-Isolators

The Clairex series of opto-isolators features a range of transfer ratios and speeds that are unique in the industry.

**CLI-2**—General purpose isolator that features a minimum transfer ratio of 30%, maximum of 100%, with an isolation voltage of 1500V.

**CLI-3**—Dual purpose isolator designed to satisfy the need for low LED driving currents ( $\cong 1\text{mA}$ ) or large transfer ratios ( $> 100\%$ ) at standard driving currents ( $\cong 10\text{mA}$ ). This unit can be used where a darlington is needed for the transfer ratio, but with the high speed of a transistor.

**CLI-5**—Ultra high speed isolator that features a minimum transfer ratio of 20% and a speed of  $2\ \mu\text{sec}$  (typical) into a 1000ohms load resistor.

**CLI-10**—Ultra high transfer ratio isolator features a transfer ratio of 600% using a photodarlington.

NOTE: All of the above units feature an isolation voltage of 1500V.

### ABSOLUTE MAXIMUM RATINGS

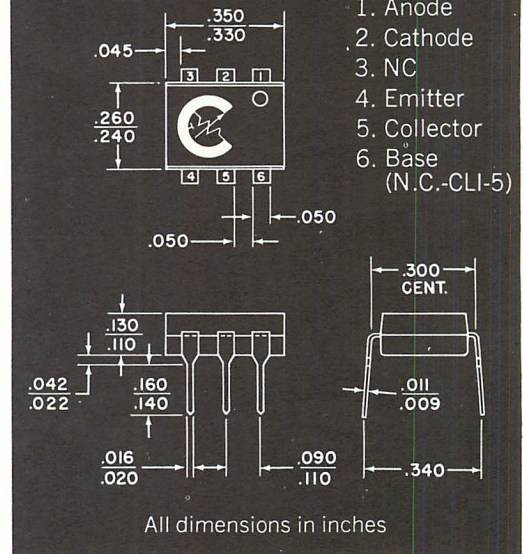
Maximum Temperatures  
Storage Temperature  $-55\text{C}$  to  $+150\text{C}$   
Operating Junction Temperature  $+100\text{C}$

### EMITTER (GaAs Diode)

Power Dissipation  
At 25C ambient  $P_t = 100\text{mw}$ , derate linearly 1.33mw/c  
Maximum Voltage  
 $V_R$  Reverse Voltage = 3.0 volts  
Maximum Current  
 $I_F$  DC Forward Current = 60ma (continuous)

### DETECTOR (NPN Silicon Planar Phototransistor)

Power Dissipation  
At 25C ambient  $P_t = 200\text{mw}$ , derate linearly 2.0mw/c  
Maximum Voltages  
 $V_{CEO} = 50$  volts  $V_{ECO} = 6$  volts  
Maximum Current  $I_C = 200\text{mA}$



### ELECTRICAL CHARACTERISTICS (25C Free Air unless otherwise designated)

Symbol	Characteristics	Test Conditions	CLI-2		CLI-3		CLI-5		CLI-10		Units
			Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	
<b>EMITTER</b> $V_F$	Forward Voltage	$I_F = 16\text{mA}$		1.5		1.5		1.5		1.5	volts
	$I_R$	Reverse current	$V_R = 3\text{V}$		10		10		10	10	$\mu\text{A}$
<b>DETECTOR</b> $BV_{CEO}$	Collector to Emitter breakdown voltage	$I_C = 0.1\text{mA}; I_F = 0$	50		50		50		50		volts
	$BV_{ECO}$	Emitter to Collector breakdown voltage	$I_C = 0.1\text{mA}; I_F = 0$	6		6		6		6	volts
$I_{CEO}$	Leakage Current	$I_F = 0; V_{CE} = 10\text{V}$		25		25		25		100	nA
<b>COUPLED</b>	Isolation Voltage		1500		1500		1500		1500		volts
	Direct Current Transfer Ratio	$I_F = 1.0\text{mA}; V_{CE} = 10\text{V}$				30				600	%
$I_F = 10\text{mA}; V_{CE} = 10\text{V}$		30	100	100	200	20		600		%	
$V_{CE(SAT)}$	Collector to Emitter Saturation voltage	$I_C = 2\text{mA}; I_F = 50\text{mA}$		0.4		0.4		0.4		1.0	volts
$t_r$ or $t_f$	Rise or Fall time	$R_L = 100\Omega; I_{CE} = 2\text{mA}; V_{CC} = 10\text{V}$		5		5		2.5	100 Typical		$\mu\text{sec}$
		$R_L = 1000\Omega; I_{CE} = 2\text{mA}; V_{CC} = 10\text{V}$					3				$\mu\text{sec}$
Capacitance: LED (Emitter)—Detector				2		2		2		2	$\rho\text{F}$



# CLAIREX ELECTRONICS

A DIVISION OF CLAIREX® CORPORATION

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