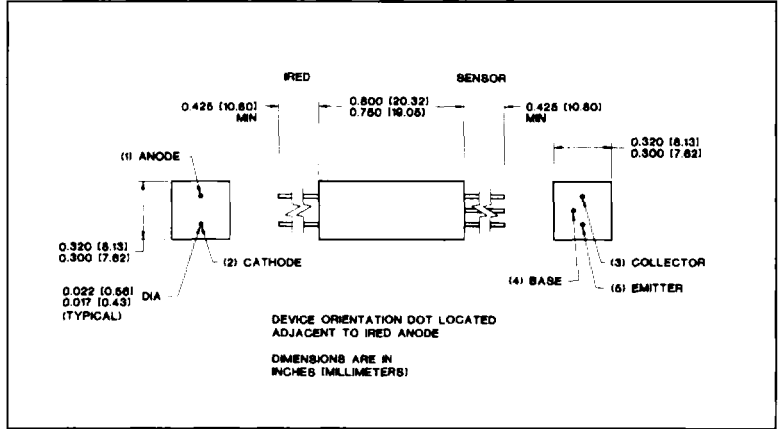
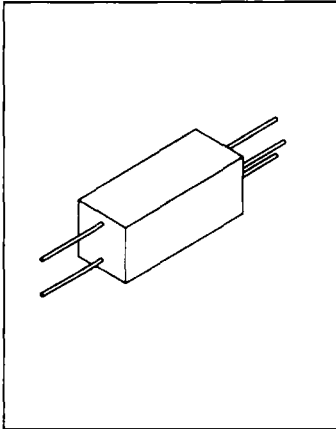


# C-101 Series

## Optically Coupled Isolators



### Features

- 10KV I/O isolation
- high current-transfer-ratio (CTR)
- hermetically-sealed components
- UL listed
- replaces CLA60 family of isolators

### Description

The C-101 series of optically coupled isolators consists of a Gallium Arsenide infrared-emitting diode and a Silicon NPN phototransistor, coaxially mounted in an injection-molded, black plastic housing, sealed against all external sources of optical radiation. The series is designed for applications simultaneously requiring high voltage isolation and component hermeticity. Call OptoSwitch for applications assistance.

### Absolute Maximum Ratings ( $T_A = 25^\circ\text{C}$ unless otherwise stated.)

Storage and Operating Temperature .....  $-55^\circ\text{C}$  to  $+100^\circ\text{C}$   
 Lead Soldering Temperature<sup>(1)</sup> .....  $240^\circ\text{C}$ <sup>(2)</sup>

### IRED

Continuous Forward Current ..... 150mA  
 Peak Forward Current (1 $\mu\text{s}$  pulse width, 300pps) ..... 3A  
 Reverse Voltage ..... 3V  
 Power Dissipation ..... 200mW<sup>(3)</sup>

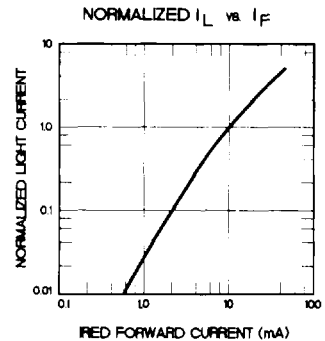
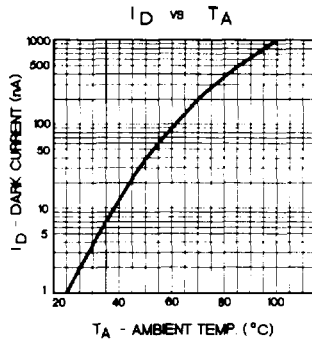
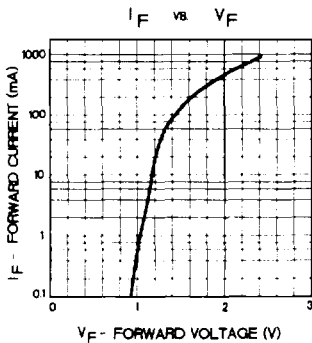
### Sensor

Collector-Emitter Voltage ..... 40V  
 Emitter-Collector Voltage ..... 6V  
 Power Dissipation ..... 250mW<sup>(3)</sup>

### Notes:

1. 0.06" (1.5mm) from the case for 5 seconds maximum.
2.  $260^\circ\text{C}$  maximum when wave soldering.
3. Derate linearly from  $25^\circ\text{C}$  at  $-2.00 \text{ mW}/^\circ\text{C}$ .

### Fundamental Characteristics



OptoSwitch • 1500 International Parkway, Suite 100 • Richardson, Texas 75081 • Phone: 214-479-1122 • 800-448-2900  
 CLAROSTAT Sensors and Controls

# C-101 Series

## Optically Coupled Isolators



### Electrical Characteristics ( $T_A = 25^\circ\text{C}$ unless otherwise stated)

Symbol	Parameter	min	max	units	Test Conditions
<b>Input Diode</b>					
$V_F$	Forward Voltage	-	1.50	V	$I_F = 10\text{mA}$
$I_R$	Reverse Current	-	10	$\mu\text{A}$	$V_R = 3.0\text{V}$
<b>Output Phototransistor</b>					
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	30	-	V	$I_C = 1.0\mu\text{A}$
$V_{(BR)ECO}$	Emitter-Collector Breakdown Voltage	5.0	-	V	$I_E = 100\mu\text{A}$
$I_D$	Dark Current	-	50	nA	$V_{CE} = 10\text{V}$
<b>Coupled</b>					
CTR <sup>(1)</sup>	DC Current-Transfer-Ratio				
	C-101-A <sup>(2)</sup>	10	-	%	$I_F = 10\text{mA}, V_{CE} = 5\text{V}$
	C-101-B <sup>(2)</sup>	20	70	%	$I_F = 10\text{mA}, V_{CE} = 5\text{V}$
	C-101-C <sup>(2)</sup>	40	-	%	$I_F = 10\text{mA}, V_{CE} = 5\text{V}$
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	-	0.4	V	$I_F = 10\text{mA}, I_C = 0.8\text{mA}$
$V_{ISO}$	Isolation Voltage	10	-	kVDC	

### Notes:

1. Current-Transfer-Ratio is defined as the quotient of output current and input current;  $CTR = I_{out}/I_{in}$ . Other ranges of current transfer ratio can be specified; call OptoSwitch for applications assistance.
2. The C-101 family replaces the CLA60 family of isolators previously manufactured by Clairex Electronics. Replacement is exact with identical or improved characteristics; use the following guide:

#### Previous Part Number

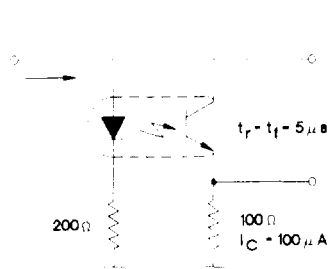
CLA60  
CLA60AA  
CLA60AB

#### Current Part Number

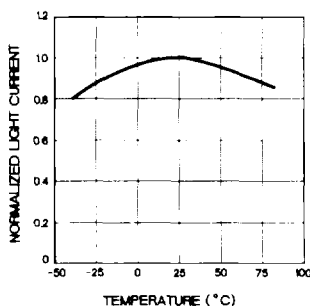
C-101-C  
C-101-B  
C-101-A

### Typical Characteristics

SWITCHING TEST CIRCUIT



$I_L$  vs TEMPERATURE



LIGHT CURRENT vs  $V_{CE}$

