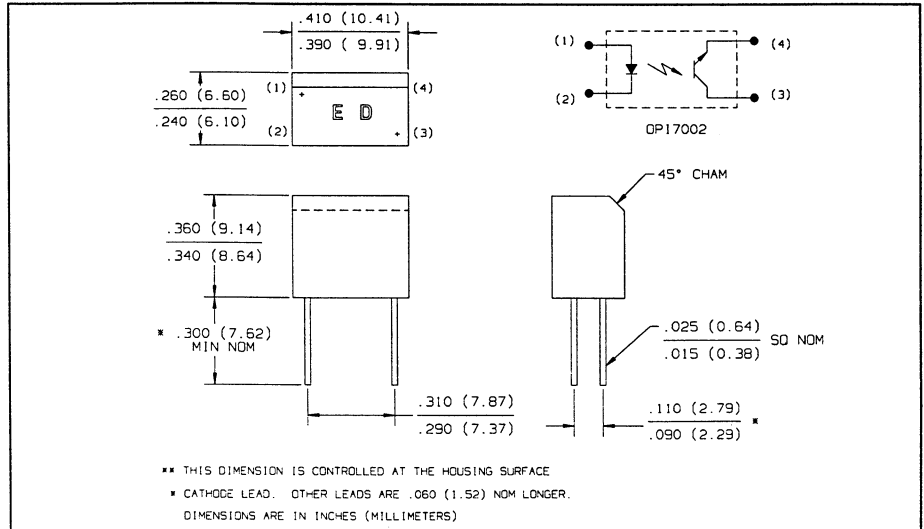
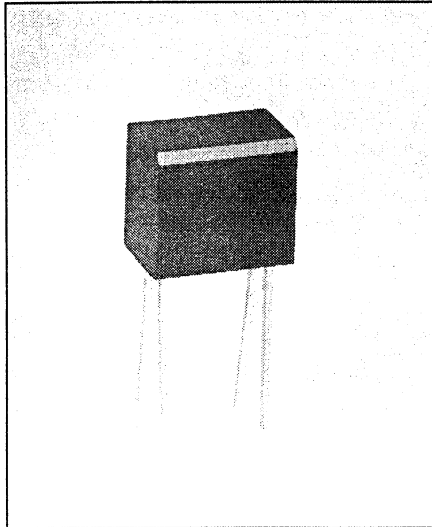


# Optically Coupled Isolators Types OPI7320, OPI7340



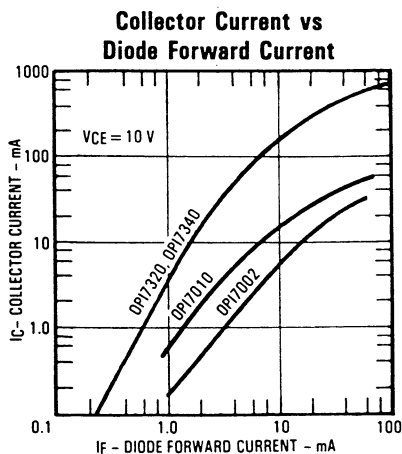
## Features

- 6kV electrical isolation
- Low cost plastic housing
- UL recognized File No. E58730<sup>(4)</sup>
- Photodarlington output

## Description

The OPI7320 and OPI7340 each consist of an infrared emitting diode coupled to an NPN silicon photodarlington in a high dielectric plastic housing. This device is designed for applications requiring a high current transfer ratio. Pin spacing is compatible with standard dual-in-line packages.

## Typical Performance Curves



## Absolute Maximum Ratings (TA = 25° C unless otherwise noted)

Input-to-Output Isolation Voltage . . . . . ± 6 kVDC<sup>(1)(4)</sup>  
 Operating and Storage Temperature Range . . . . . -40° C to +85° C  
 Lead Soldering Temperature [1/16 inch (1.6 mm) from case for 5 sec. with soldering iron]. . . . . 260° C<sup>(2)</sup>

## Input Diode

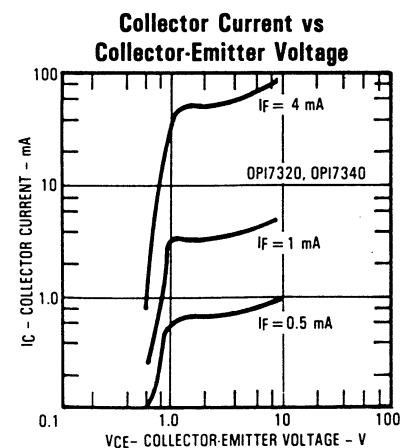
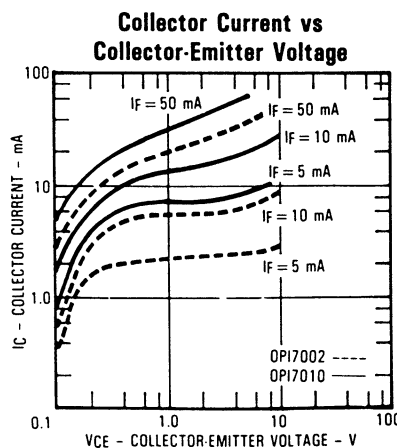
Forward DC Current . . . . . 50 mA  
 Peak Forward Current (1 μs pulse width, 300 pps) . . . . . 3.0 A  
 Reverse Voltage . . . . . 2.0 V  
 Power Dissipation . . . . . 100 mW<sup>(3)</sup>

## Output Photodarlington

Collector-Emitter Voltage . . . . . 15 V  
 Emitter-Collector Voltage . . . . . 5.0 V  
 Power Dissipation . . . . . 100 mW<sup>(3)</sup>

## Notes:

- (1) Measured with input and output leads shorted.
- (2) RMA flux is recommended. Duration can be extended to 10 sec. max. when flow soldering. Max. 20 grams force may be applied to leads when soldering.
- (3) Derate linearly 1.66 mW/° C above 25° C.
- (4) UL recognition is for 3500 VAC, 1 minute only.



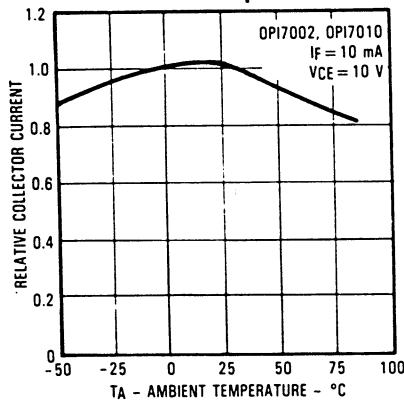
# Types OPI7320, OPI7340

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

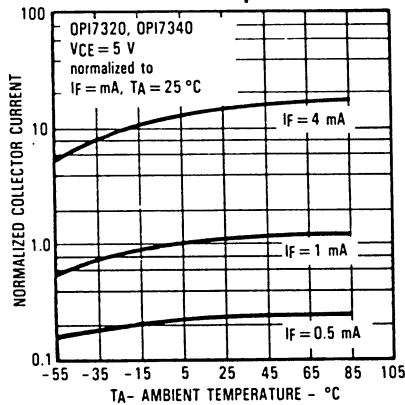
SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
<b>Input Diode</b>						
$V_F$	Forward Voltage			1.70	V	$I_F = 10\text{ mA}$
$I_R$	Reverse Current			100	$\mu\text{A}$	$V_R = 2\text{ V}$
<b>Output Photodarlington</b>						
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	15.0			V	$I_C = 1\text{ mA}, I_F = 0$
$V_{(BR)ECO}$	Emitter-Collector Breakdown Voltage	5.0			V	$I_E = 100\ \mu\text{A}, I_F = 0$
$I_{CEO}$	Collector Dark Current			100	nA	$V_{CE} = 10\text{ V}, I_F = 0$
<b>Coupled</b>						
$I_C/I_F$	DC Current Transfer Ratio	OPI7320 OPI7340	200 400		%	$I_F = 5\text{ mA}, V_{CE} = 5\text{ V}$ $I_F = 5\text{ mA}, V_{CE} = 5\text{ V}$
$V_{(SAT)}$	Collector-Emitter Saturation Voltage			1.00	V	$I_F = 5\text{ mA}, I_C = 2\text{ mA}$
$V_{ISO}$	Isolation Voltage	6			kVDC	(See Note 1)
$t_{ON}$	Turn-On Time		150		$\mu\text{s}$	$V_{CE} = 10\text{ V}, I_C = 10\text{ mA}, R_L = 100\ \Omega$
$t_{OFF}$	Turn-Off Time		125		$\mu\text{s}$	$V_{CE} = 10\text{ V}, I_C = 10\text{ mA}, R_L = 100\ \Omega$
$C_{IO}$	Capacitance Input-to-Output		0.20		pF	$V_{IO} = 0, f = 1\text{ MHz}^{(1)}$

## Typical Performance Curves

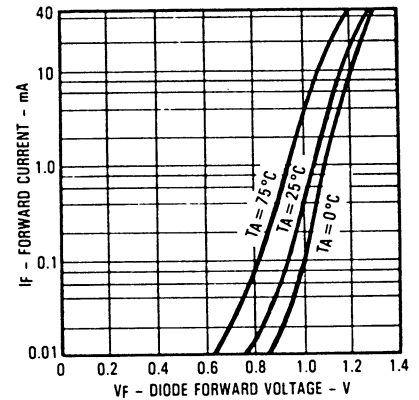
Relative Collector Current vs Ambient Temperature



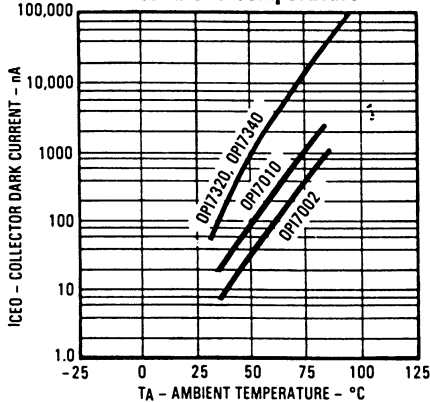
Normalized Collector Current vs Ambient Temperature



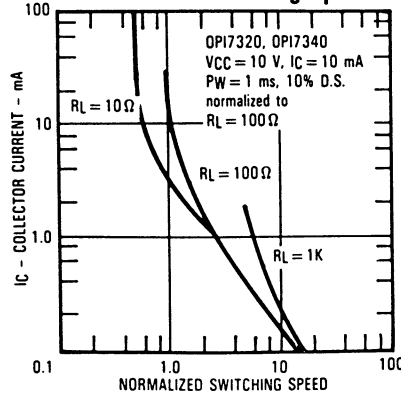
Diode Forward Current vs Diode Forward Voltage



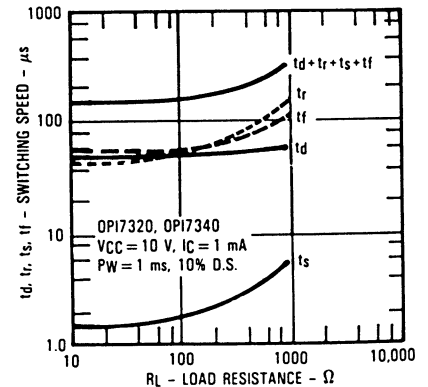
Collector Dark Current vs Ambient Temperature



Collector Current vs Normalized Switching Speed



Switching Speed vs Load Resistance



OPTICALLY COUPLED ISOLATORS

Optek reserves the right to make changes at any time in order to improve design and to supply the best product possible.

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