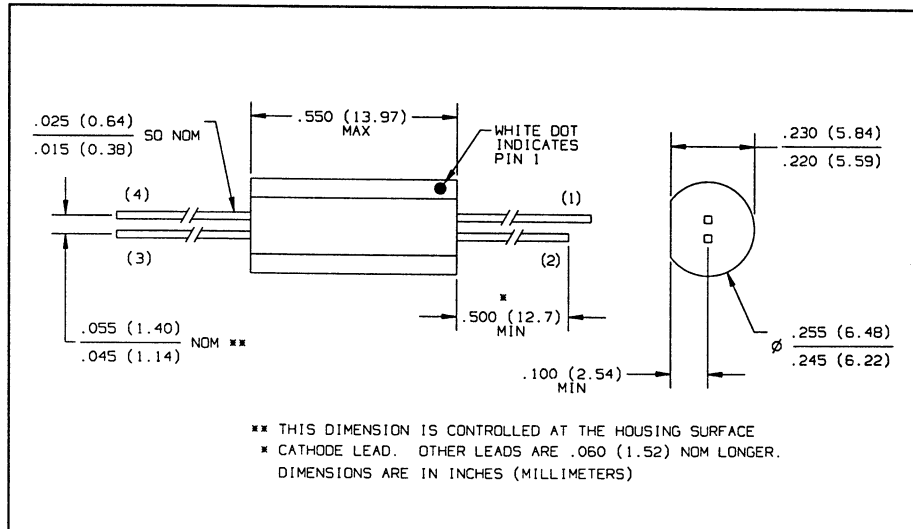
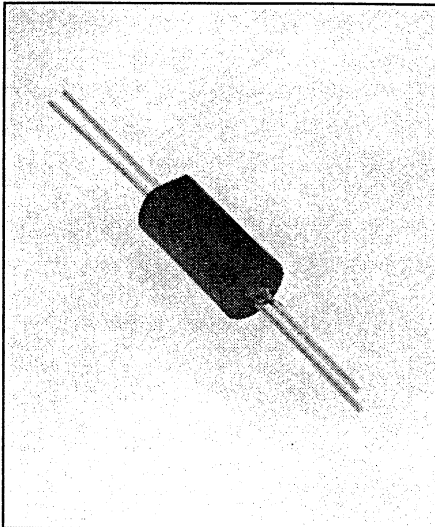


# Optically Coupled Isolators

## Types OPI1264, OPI1264A, OPI1264B, OPI1264C



### Features

- 10kV electrical rating
- High current transfer ratio
- Low cost plastic module
- UL recognized File NO. E58730<sup>(6)</sup>

### Description

The OPI1264 series are optically coupled isolators, each consisting of an infrared emitting diode coupled to an NPN silicon phototransistor and sealed in a precast opaque housing. The isolators are designed for applications requiring high voltage isolation between input and output.

### Replaces

K8900 series

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

Input-to-Output Isolation Voltage	$\pm 10 \text{ kVDC}^{(1)(6)}$
Storage Temperature Range	$-40^\circ \text{C}$ to $+100^\circ \text{C}$
Operating Temperature Range	$-40^\circ \text{C}$ to $+85^\circ \text{C}$
Lead Soldering Temperature [1/16 inch (1.6 mm) from case for 5 sec. with soldering iron]	$260^\circ \text{C}^{(2)}$

### Input Diode

Forward DC Current	40 mA <sup>(3)</sup>
Reverse DC Voltage	2.0 V
Power Dissipation	50 mW <sup>(4)</sup>

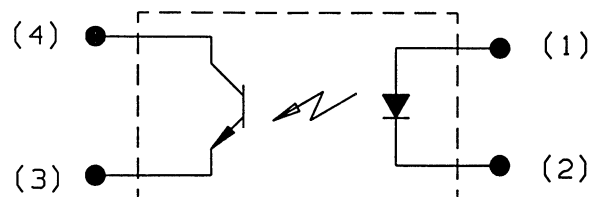
### Output Photosensor

Collector-Emitter Voltage	30 V
Emitter-Collector Voltage	5.0 V
Power Dissipation	100 mW <sup>(5)</sup>

### Notes:

- (1) Measured with input and output leads shorted. Typical input/output capacitance is 0.06pf.
- (2) RMA flux is recommended. Duration can be extended to 10 sec. max. when flow soldering.
- (3) Derate linearly 0.67 mA/ $^\circ \text{C}$  above  $25^\circ \text{C}$ .
- (4) Derate linearly 0.83 mW/ $^\circ \text{C}$  above  $25^\circ \text{C}$ .
- (5) Derate linearly 1.66 mW/ $^\circ \text{C}$  above  $25^\circ \text{C}$ .
- (6) UL recognition is for 3500 VAC, 1 minute only.

### Schematic



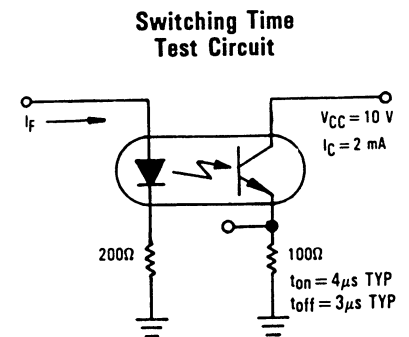
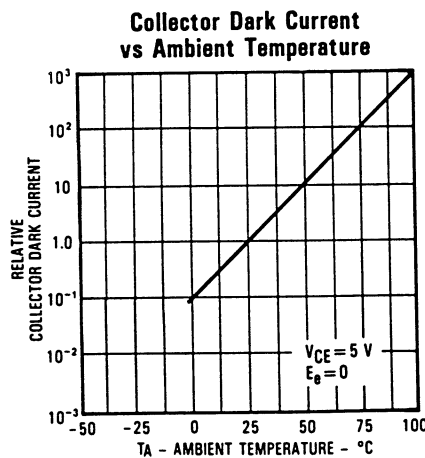
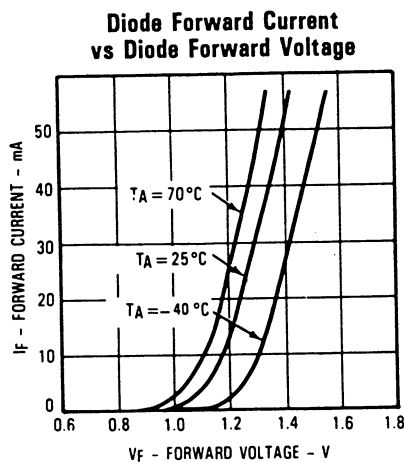
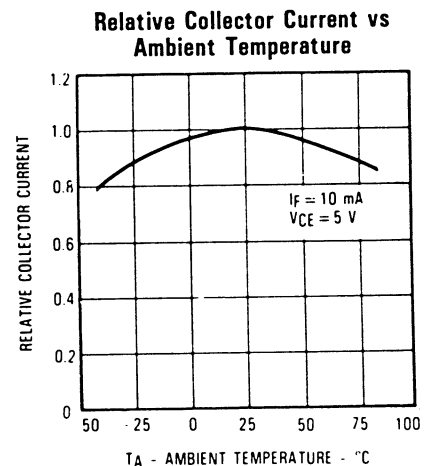
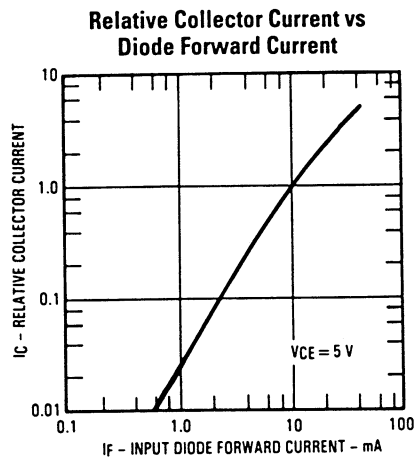
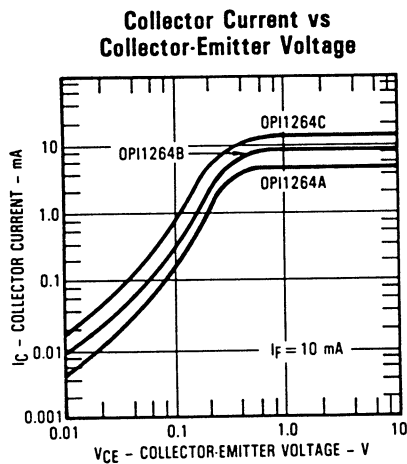
OPI1264

# Types OPI1264, OPI1264A, OPI1264B, OPI1264C

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			1.60	V	$I_F = 20\text{ mA}$
$I_R$	Reverse Current			100	$\mu\text{A}$	$V_R = 2.0\text{ V}$
<b>Output Phototransistor</b>						
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	30			V	$I_C = 100\text{ }\mu\text{A}$
$V_{(BR)ECO}$	Emitter-Collector Breakdown Voltage	5			V	$I_E = 100\text{ }\mu\text{A}$
$I_{CEO}$	Collector-Emitter Dark Current			100	nA	$V_{CE} = 15\text{ V}, E_e = 0$
<b>Coupled</b>						
$I_C/I_F$	DC Current Transfer Ratio	OPI1264 OPI1264A OPI1264B OPI1264C	12.5 25 50 100	125	%	$I_F = 10.0\text{ mA}, V_{CE} = 5.0\text{ V}$
$V_{ISO}$	Isolation Voltage	10			kVDC	(See Note 1)
$V_{CE(SAT)}$	Collector-Saturation Voltage			0.40	V	$I_F = 10.0\text{ mA}, I_C = 1.6\text{ mA}$
$I_{CEO}$	Collector-Emitter Dark Current			200	nA	$I_F = 0, V_{CE} = 20\text{ V}$

## Typical Performance Curves



The input waveform is supplied by a generator with the following characteristics:  $Z_{OUT} = 50\text{ }\Omega$ ,  $t_r \leq 15\text{ ns}$ , duty cycle  $\approx 1\%$ , pulse width  $\approx 100\text{ }\mu\text{s}$ .

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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