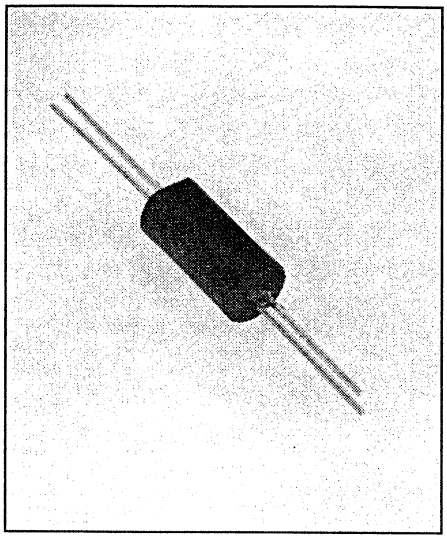
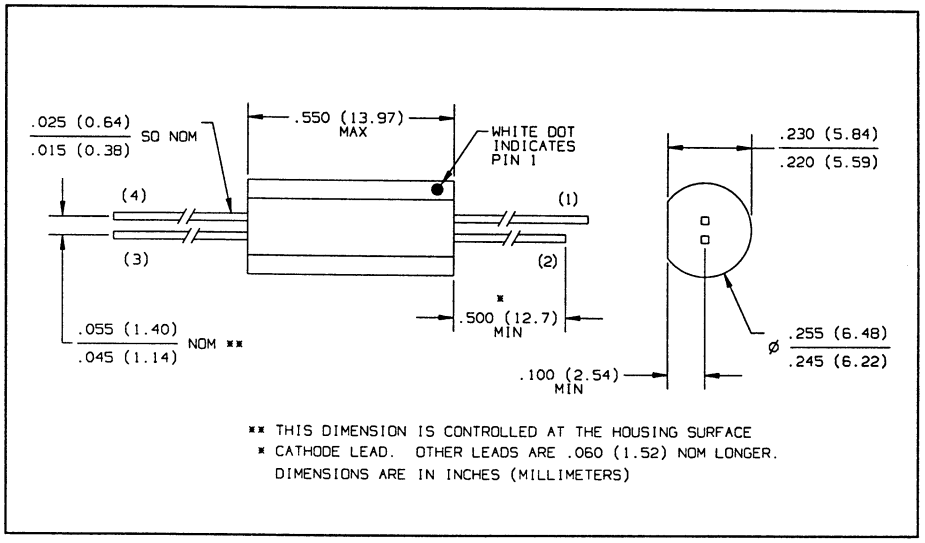
Optically Coupled Isolators
Types OPI1264, OPI1264A, OPI1264B, OPI1264C





Features

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

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

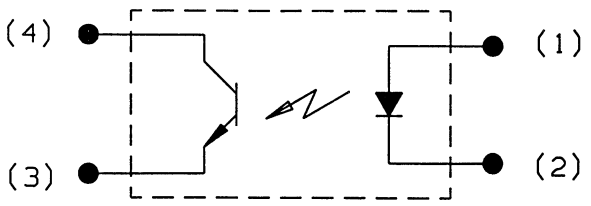
K8900 series

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

Input-to-Output Isolation Voltage	± 10 kVDC(1)(6)
Storage Temperature Range	-40° C to +100° C
Operating 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(2)
Input Diode	
Forward DC Current	40 mA(3)
Reverse DC Voltage	2.0 V
Power Dissipation	50 mW(4)
Output Photosensor	
Collector-Emitter Voltage	30 V
Emitter-Collector Voltage	5.0 V
Power Dissipation	100 mW(5)

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/° C above 25° C.
(4) Derate linearly 0.83 mW/° C above 25° C.
(5) Derate linearly 1.66 mW/° C above 25° C.
(6) UL recognition is for 3500 VAC, 1 minute only.

Schematic



OPI1264

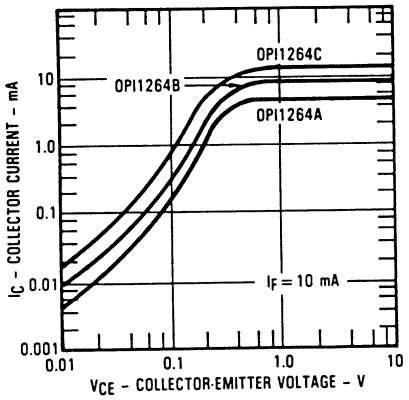
Types OPI1264, OPI1264A, OPI1264B, OPI1264C

Electrical Characteristics (T_A = 25° C unless otherwise noted)

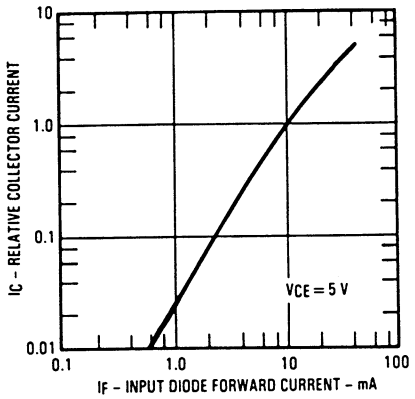
SYMBOL	PARAMETER		MIN	TYP	MAX	UNITS	TEST CONDITIONS
Input Diode							
V_F	Forward Voltage				1.60	V	I_F = 20 mA
I_R	Reverse Current				100	µA	V_R = 2.0 V
Output Phototransistor							
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage		30			V	I_C = 100 µA
$V_{(BR)ECO}$	Emitter-Collector Breakdown Voltage		5			V	I_E = 100 µA
I_{CEO}	Collector-Emitter Dark Current				100	nA	V_{CE} = 15 V, Ee = 0
Coupled							
I_C/I_F	DC Current Transfer Ratio	OPI1264	12.5			%	I_F = 10.0 mA, V_{CE} = 5.0 V
		OPI1264A	25				
		OPI1264B	50		125		
		OPI1264C	100				
V_{ISO}	Isolation Voltage		10			kVDC	(See Note 1)
$V_{CE(SAT)}$	Collector-Saturation Voltage				0.40	V	I_F = 10.0 mA, I_C = 1.6 mA
I_{CEO}	Collector-Emitter Dark Current				200	nA	I_F = 0, V_{CE} = 20 V

Typical Performance Curves

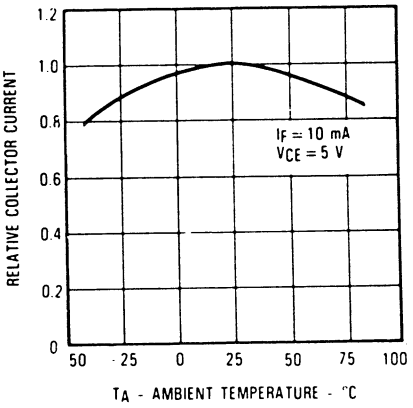
Collector Current vs Collector-Emitter Voltage



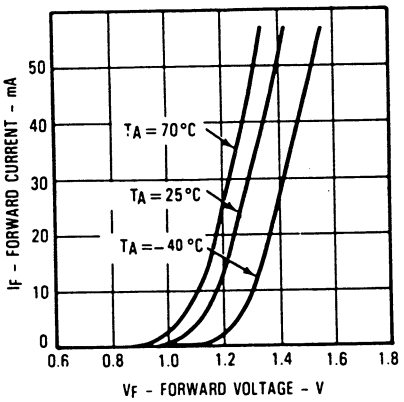
Relative Collector Current vs Diode Forward Current



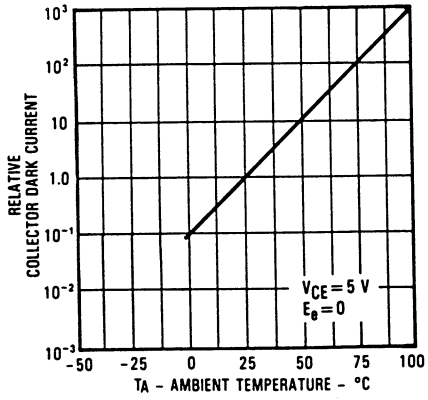
Relative Collector Current vs Ambient Temperature



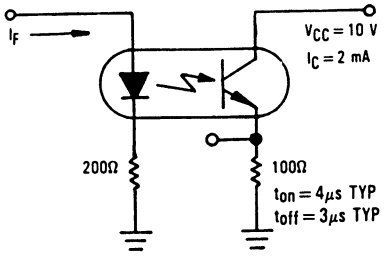
Diode Forward Current vs Diode Forward Voltage



Collector Dark Current vs Ambient Temperature



Switching Time Test Circuit



The input waveform is supplied by a generator with the following characteristics: ZOUT = 50Ω, t_r ≤ 15 ns, duty cycle ≈ 1%, pulse width ≈ 100 µs.

OPTICALLY COUPLED ISOLATORS