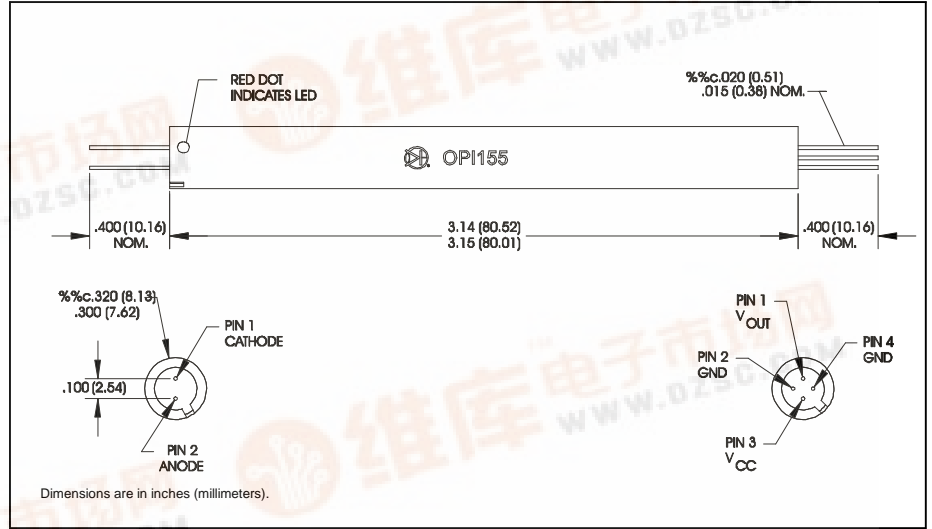




Product Bulletin OPI155  
November 2000

# High Speed Optically Coupled Isolator Type OPI155



## Features

- 50 kV electrical isolation
- High speed >5MBd
- Hermetically sealed LED and photosensor

## Description

The OPI155 contains a high speed monolithic photo-IC comprised of a photodiode and DC amplifier driving an open collector output Schottky transistor. It is optically coupled by means of an internal light pipe and mounted in a high dielectric plastic housing. The LED and sensor are in hermetically sealed packages. It is designed for applications requiring high speed and high voltage isolation between input and output.

## Absolute Maximum Ratings (T<sub>A</sub> = 25° C unless otherwise noted)

Input-to-Output Isolation Voltage	±50 kV
Storage Temperature Range	-40° C to +85° C
Operating Temperature	-40° C to +85° C
Lead Soldering Temperature (1/16 inch [1.6 mm] from case for 5 sec. with soldering iron)	260° C

## Input Diode

Continuous Forward Current	50 mA
Reverse Voltage	3.0 V
Power Dissipation	200 mW

## Output Phototransistor

Supply Voltage	-0.5 to 7.0 V
Output Voltage	-0.5 to 18.0 V
Output Current	25 mA
Open Collector Power Dissipation	40 mW

## Notes:

- (1) RMA flux is recommended. Duration can be extended to 10 seconds maximum when flow soldering.
- (2) Derate linearly mW/°C above 25° C.
- (3) Measured with input and output leads shorted and relative humidity of less than 50%.

This device is susceptible to damage from electrostatic discharge (ESD). Normal static precautions should be taken in the handling of this device to prevent ESD damage.



# Type OPI155

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		1.2	1.55	V	$I_F = 10 \text{ mA}$
$I_R$	Reverse Current		.1	100	$\mu\text{A}$	$V_R = 3.0 \text{ V}$
<b>Output Sensor</b>						
$I_{OH}$	High Level Output Current			250	$\mu\text{A}$	$V_O = 18 \text{ V}$ , $I_F = 0$ , $V_{CC} = \text{Open}$
$I_{CCH}$	High Level Supply Current			6.5	mA	$V_{CC} = 5.25 \text{ V}$ , $I_F = 0$ , $V_O = \text{Open}$
$I_{CCL}$	Low Level Supply Current			10	mA	$V_{CC} = 5.25 \text{ V}$ , $I_F = 10 \text{ mA}$ , $V_O = 0$
$V_{OL}$	Low Level Output Voltage			0.50	V	$V_{CC} = 5.25 \text{ V}$ , $I_F = 10 \text{ mA}$ , $I_O = 8 \text{ mA}$
<b>Switching Characteristics</b>						
$T_{phl}$	Propagation Delay, high to low		120	150	ns	$V_{CC} = 5 \text{ V}$ , $I_F = 10 \text{ mA}$ , $R_L = 360\Omega$
$T_{plh}$	Propagation Delay, low to high		70	100	ns	$V_{CC} = 5 \text{ V}$ , $I_F = 10 \text{ mA}$ , $R_L = 360\Omega$