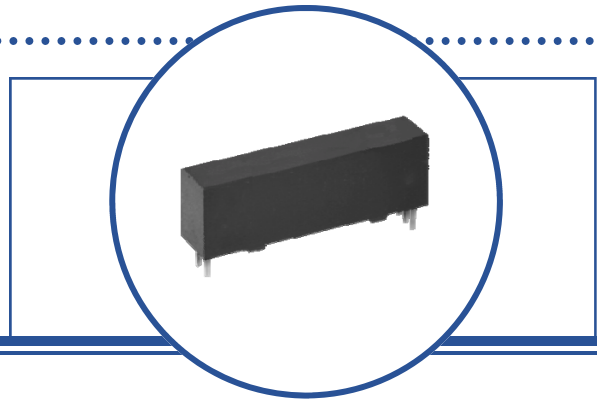


### Features:

- TTL compatible output
- 16 KV isolation
- 500 kbits/s transfer rate
- $t_{PHL} - t_{PLH} \leq 500$  ns
- Creepage path: 0.970" (24.64 mm)
- Air path: 0.970" (24.64 mm)
- UL recognized file No. E58730\*



### Description:

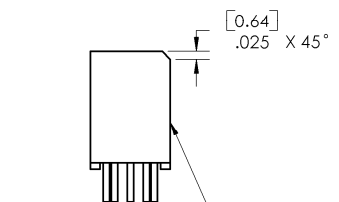
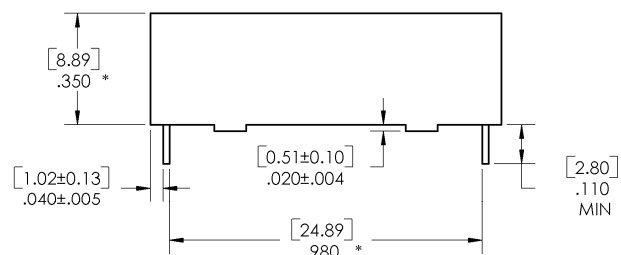
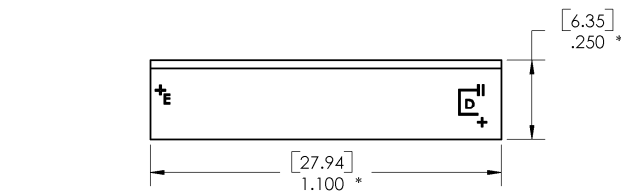
The **OPI1266** is a high voltage isolator that consists of a GaAlAs LED with a peak wavelength of 890 nm, which is coupled with a unique integrated circuit detector. Photons are collected in the detector by a photodiode and amplified by a high-gain linear amplifier that drives a Schottky clamped open collector output transistor. The circuit is temperature, current and voltage compensated. Propagation delay times are matched within 500 nanoseconds over the entire temperature range for timing purposes ( $\Delta T_P = t_{PHL} - t_{PLH}$ ). \*UL recognition is for 5833 VAC for one minute. This design produces maximum DC and AC current isolation between the input and output, while providing TTL/LSTTL circuit compatibility.

### Applications:

- Data transmission for High voltage isolation
- PCBoard power system isolation
- Industrial equipment power isolation
- Medical equipment power isolation
- Office equipment

Ordering Information							
Part Number	LED Peak Wavelength	Sensor Photologic®	Isolation Voltage (,000)	$t_{PLH} / t_{PHL}$ Max (ns)	$I_F$ (mA) Typ / Max	$V_{CE}$ (V) Max	Lead Length / Spacing
OPI1266	890 nm	Open Collector	16	500 / 500	13.5 / 50	7.0	0.12" / 0.98"

Pin #	Function
1	Anode
2	Cathode
3	Vcc
4	Output
5	Ground



Symbolize This Side

DIMENSIONS ARE IN: [MILLIMETERS] INCHES

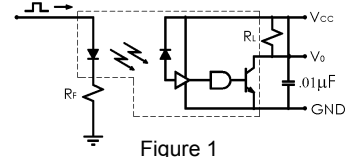
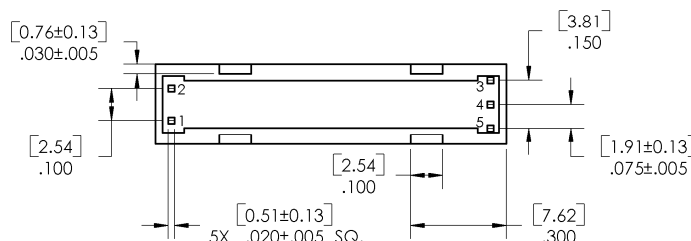


Figure 1

\* REPRESENTS CRITICAL DIMENSION TO BE SAMPLE INSPECTED.



RoHS

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

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

Storage Temperature	-40° C to +85° C
Operating Temperature	-40° C to +70° C
Input-to-Output Isolation Voltage <sup>(1)(2)</sup>	16 KVDC
Lead Soldering Temperature (1/16" (1.6 mm) from case for 5 seconds with soldering iron) <sup>(3)</sup>	260° C

**Input Diode**

Continuous Forward Current	50 mA
Peak Forward Current (1 $\mu\text{s}$ pulse width, 300 pps)	3.0 A
Reverse Voltage	2.0 V
Power Dissipation <sup>(1)</sup>	100 mW

**Output IC**

Maximum Supply Voltage	7 V
Power Dissipation <sup>(1)</sup>	100 mW

**Electrical Characteristics** ( $T_A = 0^\circ\text{C}$  to  $70^\circ\text{C}$  unless otherwise noted)

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
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**Input Diode** (See OP240 for additional information—for reference only.)

$V_F$	Forward Voltage	-	1.2	1.8	V	$I_F = 20\text{ mA}$
$I_R$	Reverse Current	-	-	100	$\mu\text{A}$	$V_R = 2.0\text{ V}$

**Output IC** ( $V_{CC} = 4.75\text{ V}$  to  $5.25\text{ V}$ ) (See OPL550 for additional information—for reference only.)

$I_{OH}$	High Level Output Current	-	-	100	$\mu\text{A}$	$I_F = 0.0\text{ mA}$ , $V_{OH} = 5.25\text{ V}$
$V_{OL}$	Low Level Output Voltage	-	-	0.60	V	$I_F = 13.5\text{ mA}$ , $I_{OL} = 2.6\text{ mA}$
$I_{CCH}$	High Level Supply Current	2.5	-	15	mA	$I_F = 0$ , $V_{CC} = 5.25\text{ V}$
$I_{CCL}$	Low Level Supply Current	-	-	18		$I_F = 13.5\text{ mA}$ , $I_{OL} = 2.6\text{ mA}$ , $V_{CC} = 5.25\text{ V}$

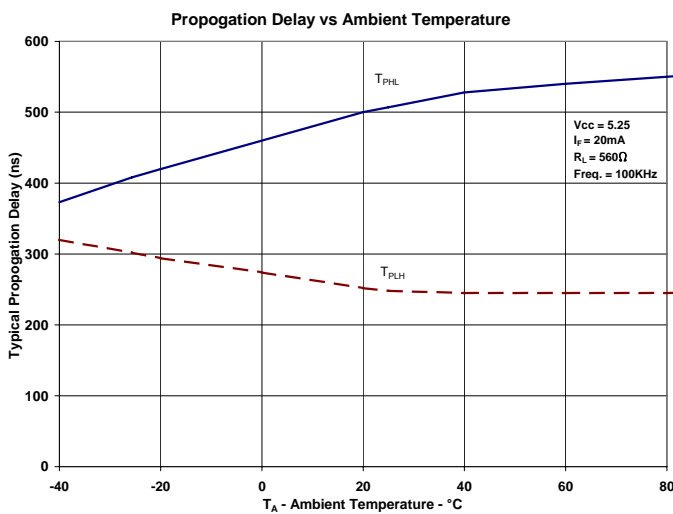
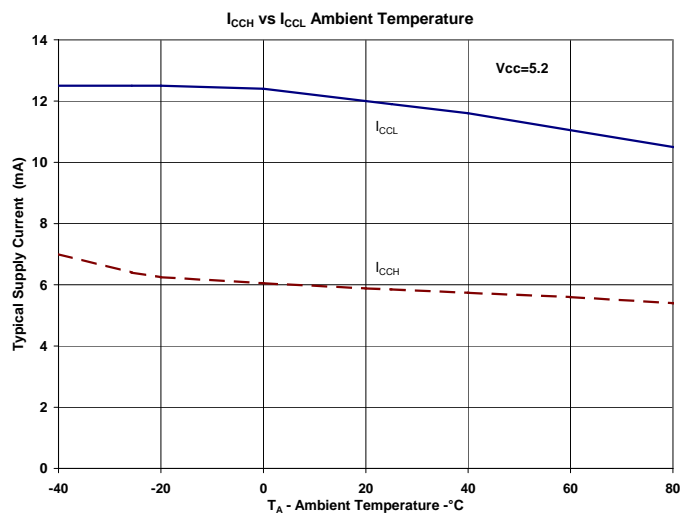
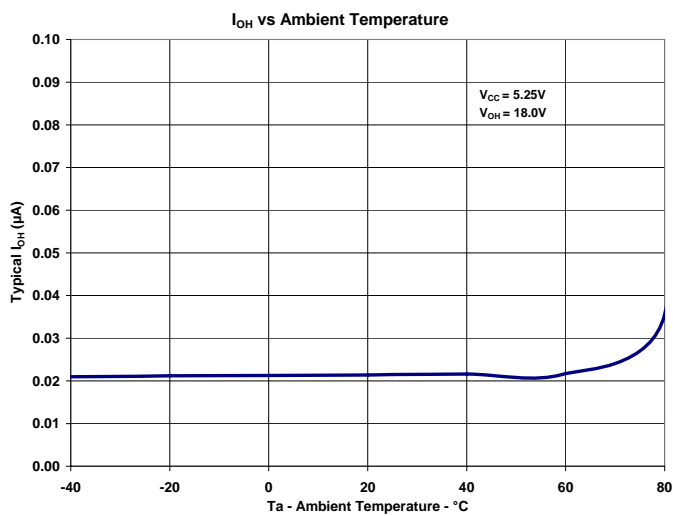
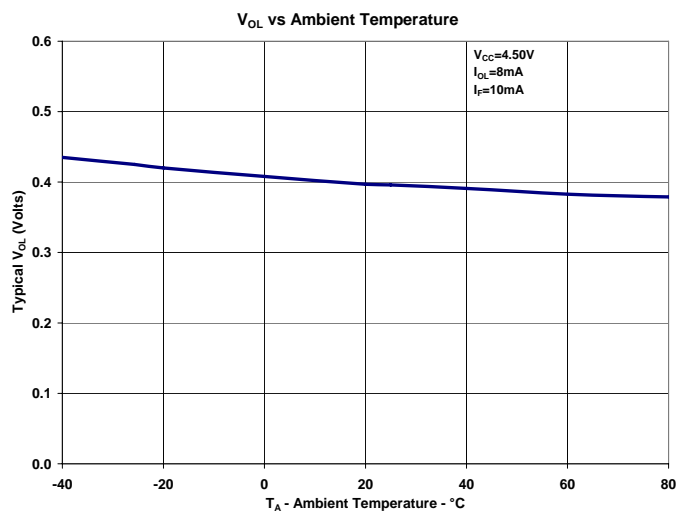
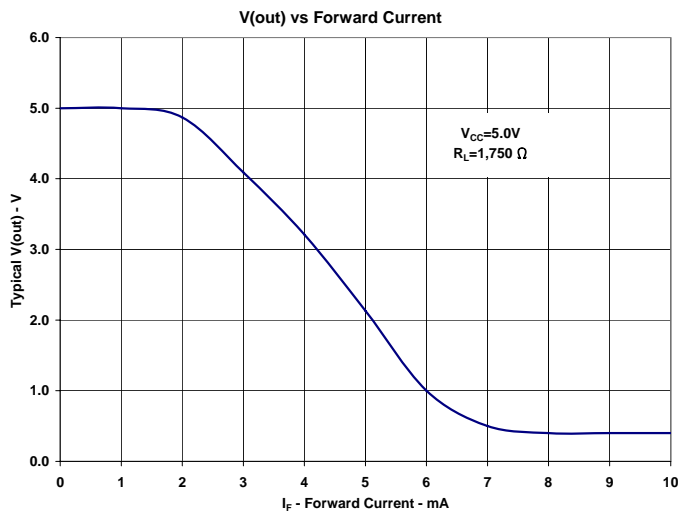
**Coupled Characteristics** ( $V_{CC} = 5\text{ V}$ )

$C_{IO}$	Coupling Capacitance	-	-	2	pF	Input and output leads shorted.
$t_{PLH}$	Propagation Delay to Low Output Level	-	-	800	ns	See Figure 1
$t_{PHL}$	Propagation Delay to High Output Level	-	-	800		
$\Delta T_P^{(4)}$	Difference in Propagation Delays	-500	-	500	ns	See Figure 1
$I_{ISO}$	Isolation Leakage Current	-	-	1	$\mu\text{A}$	VISO = @ 7kV RMS (input and output leads shorted)

Notes:

- (1) Derate linearly 1.33 W/°C above 25°C
- (2) UL registered under E58730.
- (3) RMA flux is recommended. The duration can be extended to 10 seconds maximum when flow soldering.
- (4) Measured with input and output leads shorted. Typical input/output capacitance is 0.05 pF.

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