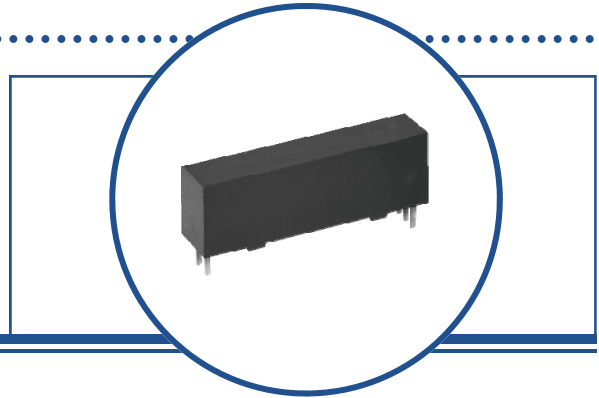


## Features:

- TTL compatible output
- 16 KV isolation
- 2Mbit/s
- $t_{PHL} - t_{PLH} \leq 500$  ns
- Creepage path: 0.970" (24.64 mm)
- Air path: 0.970" (24.64 mm)



## Description:

The **OPI1268** is a high voltage isolator with a digital output that is capable of high speed data transmission. The input of the OPI1268 consists of a high-efficiency GaAlAs LED with a peak wavelength of 850 nm, which is optically coupled to the output optical IC. A photodiode in the output IC detects the incoming modulated light and converts it to a proportionate current. This current is fed into a high-gain linear amplifier which is temperature, current and voltage compensated. The result is a highly stable digital output with an open collector inverter configuration. This device produces DC and AC voltage isolation between the input and output circuitry while providing TTL signal integrity.

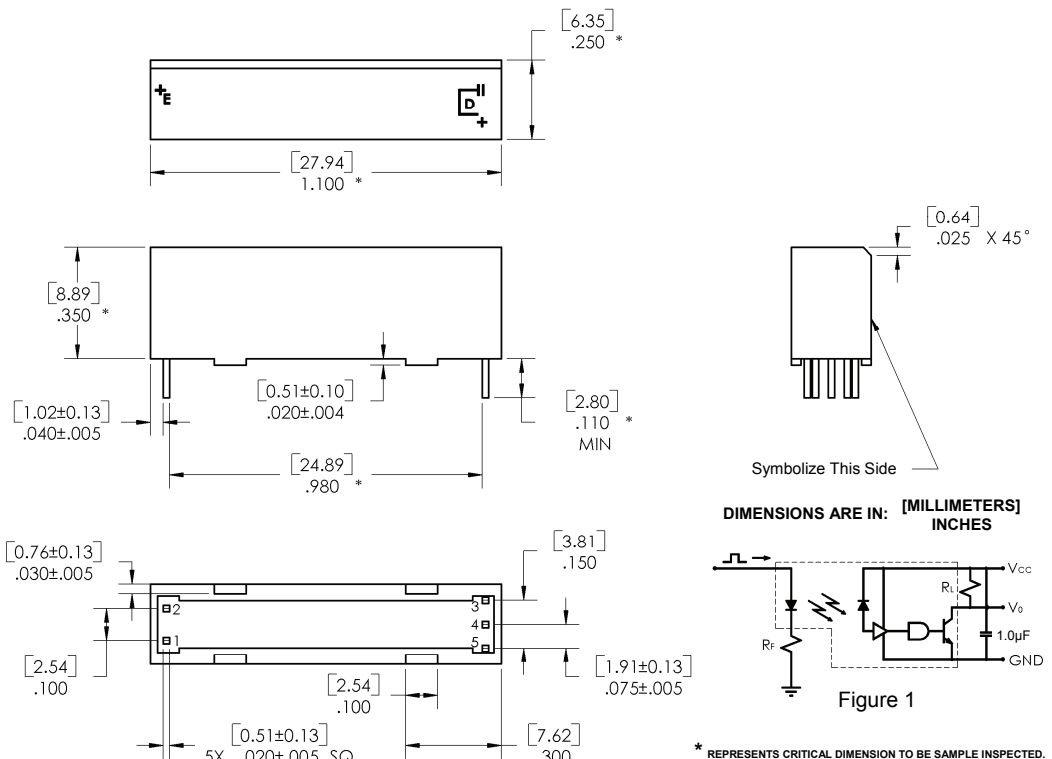
## Applications:

- 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
OPI1268	850 nm	Open Collector	16	100 / 200	10 / 50	18	0.12" / 0.98"

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



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 +100° C
Operating Temperature	-40° C to +100° C
Input-to-Output Isolation Voltage <sup>(1)</sup>	16 KVDC
Lead Soldering Temperature (1/16" (1.6 mm) from case for 5 seconds with soldering iron) <sup>(2)</sup>	260° C

**Input Diode**

Continuous Forward Current	30 mA
Peak Forward current (1 $\mu\text{s}$ pulse width, 300 pps)	3.0 A
Reverse Voltage	3.0 V
Power Dissipation <sup>(1)</sup>	100 mW

**Output IC**

Maximum Supply Voltage	7 V
Power Dissipation <sup>(1)</sup>	40 mW
Maximum Output Voltage	18 V
Maximum Output Current	25 mA

**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**

$V_F$	Forward Voltage	-	1.3	1.6	V	$I_F = 20\text{ mA}$
$I_R$	Reverse Current	-	0.1	100	$\mu\text{A}$	$V_R = 2.0\text{ V}$

**Output IC** ( $V_{CC} = 4.5\text{ V}$  to  $5.25\text{ V}$ ) (See OPL550 for additional information—for reference only.)

$I_{OH}$	High Level Output Current	-	0.20	10	$\mu\text{A}$	$I_F = 0.0\text{ mA}$ , $V_{OH} = 18.0\text{ V}$ , $V_{CC} = 5.25\text{ V}$
$V_{OL}$	Low Level Output Voltage	-	0.44	0.55	V	$I_F = 10.0\text{ mA}$ , $I_{OL} = 8.0\text{ mA}$ , $V_{CC} = 4.5\text{ V}$
$I_{CCH}$	High Level Supply Current	-	4.2	7	mA	$I_F = 0$ , $V_{CC} = 5.25\text{ V}$
$I_{CCL}$	Low Level Supply Current	-	6.7	10		$I_F = 10.0\text{ mA}$ , $V_{CC} = 5.25\text{ V}$

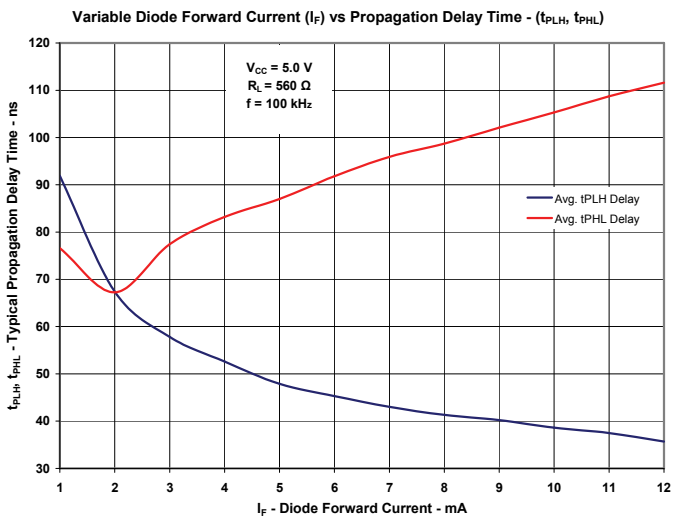
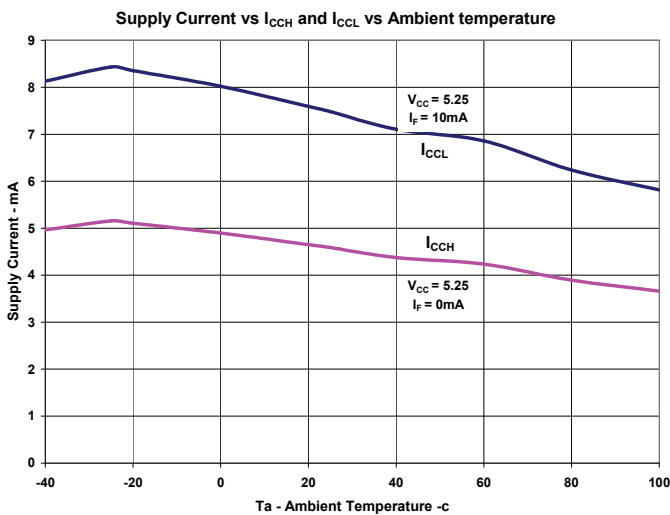
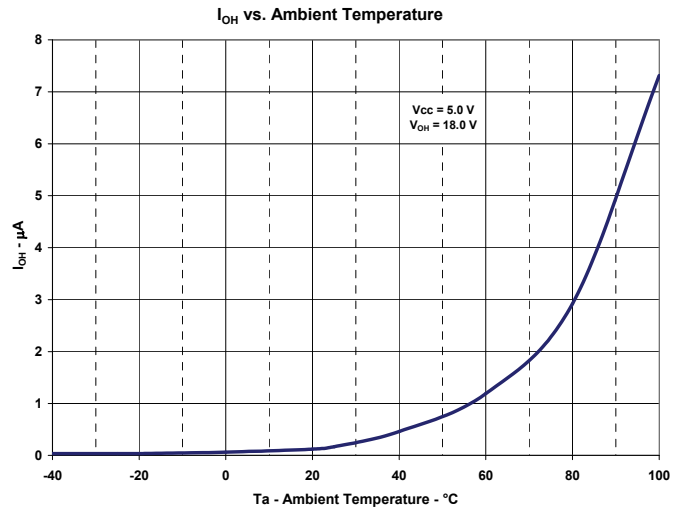
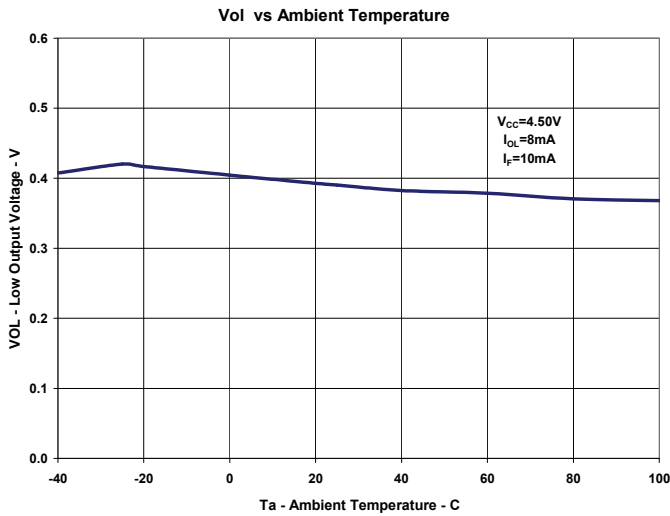
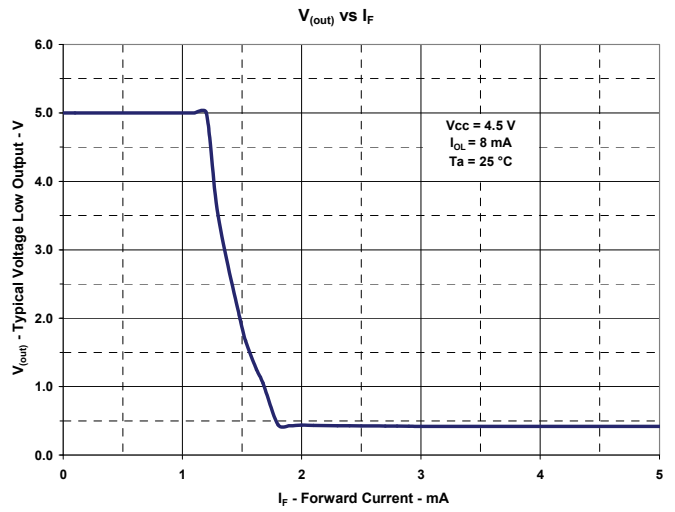
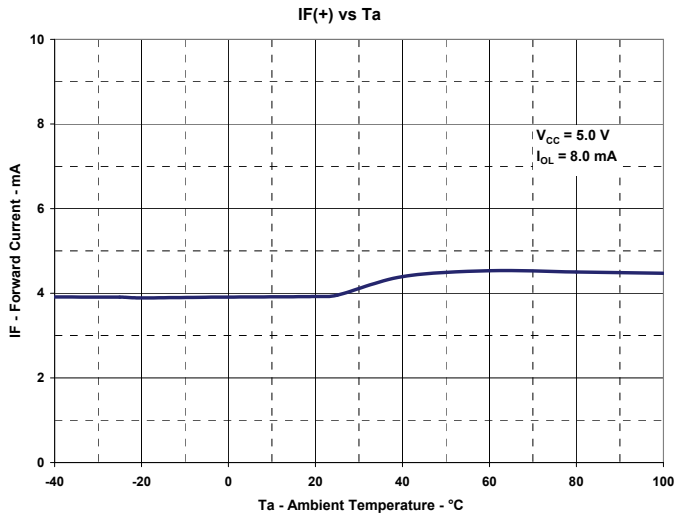
**Coupled Characteristics** ( $V_{CC} = 5\text{ V}$ )

$C_{IO}$	Coupling Capacitance	-	-	2	pF	Input and output leads shorted.
$t_{PLH}$	Propagation Delay to Low Output Level	-	-	200	ns	See Figure 1
$t_{PHL}$	Propagation Delay to High Output Level	-	-	100		
$I_{ISO}$	Isolation Leakage Current	-	-	1	$\mu\text{A}$	VISO = @ 7kV RMS (input and output leads shorted)
$I_{F+}$	LED Positive Going Threshold Current	0.8	1.7	5.0	mA	$V_{CC} = 5\text{ V}$ , $I_{OL} = 8.0\text{ mA}$

Notes:

- (1) Derate linearly 1.33 W/°C above 25°C
- (2) RMA flux is recommended. The duration can be extended to 10 seconds maximum when flow soldering.

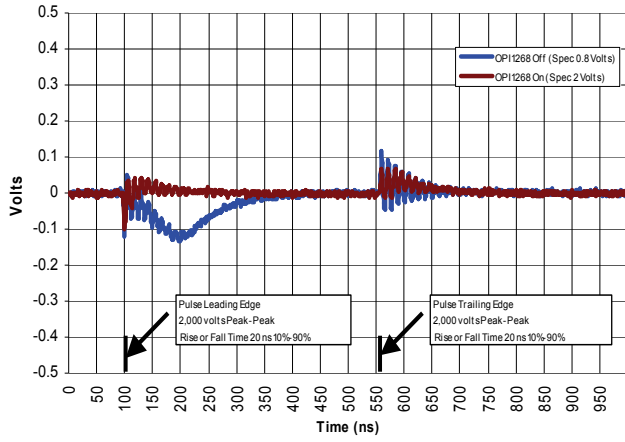
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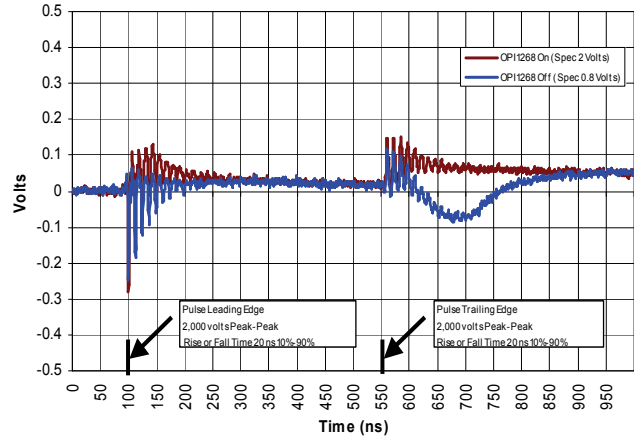
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dV/dT

OPI1268 dV/dT Emitter



OPI1268 dV/dT Sensor



Notes:

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