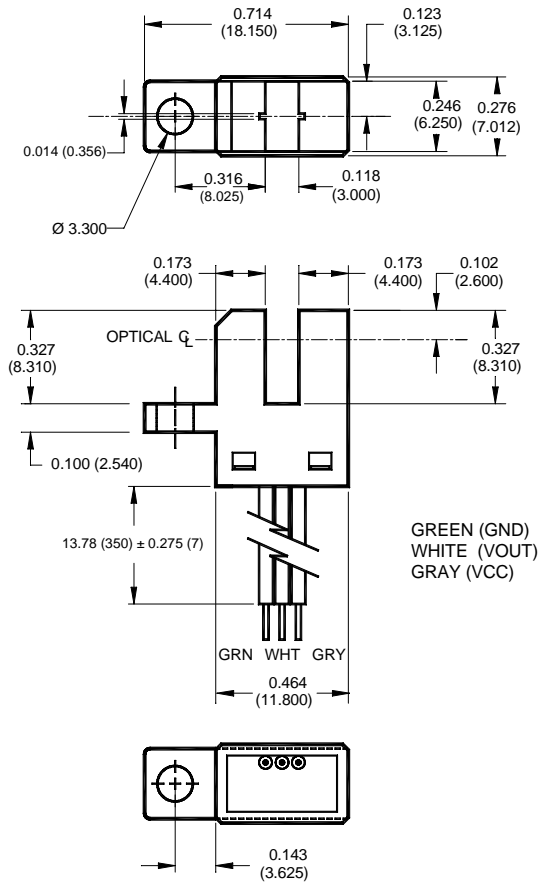
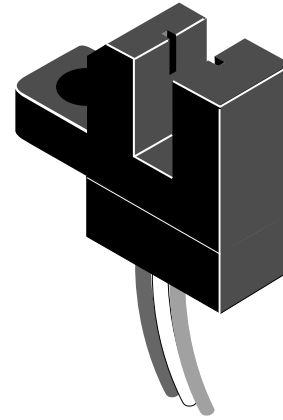


PACKAGE DIMENSIONS



NOTES:

1. Dimensions for all drawings are in inches (millimeters).
2. Tolerance of $\pm .010$ (.25) on all non-nominal dimensions unless otherwise specified.
3. Wire gauge: 24 AWG, 7 strand, pre-tinned copper.



FEATURES

- No contact switching
- Mounting tab
- Wire leads for remote connection
- 3 mm slot
- Output configuration: Inverter open-collector
- TTL/CMOS compatible output
- Aperture width: .014"

NOTES (Applies to Max Ratings and Characteristics Tables.)

1. Derate power dissipation linearly 1.67 mW/°C above 25°C.
2. Derate power dissipation linearly 2.50 mW/°C above 25°C.
3. RMA flux is recommended.
4. Methanol or isopropyl alcohols are recommended as cleaning agents.

ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Rating	Units
Operating Temperature	T_{OPR}	-40 to +85	°C
Storage Temperature	T_{STG}	-40 to +85	°C
Soldering Temperature (Iron) ^(3,4)	T_{SOL-I}	240 for 5 sec	°C
EMITTER			
Continuous Forward Current	I_F	50	mA
Reverse Voltage	V_R	5	V
Power Dissipation ⁽¹⁾	P_D	100	mW
SENSOR			
Output Current	I_O	50	mA
Supply Voltage	V_{CC}	16	V
Output Voltage	V_O	30	V
Power Dissipation ⁽²⁾	P_D	150	mW

ELECTRICAL / OPTICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$)

PARAMETER	TEST CONDITIONS	SYMBOL	MIN.	TYP.	MAX.	UNITS
Operating Supply Voltage		V_{CC}	4.5	—	16	V
INPUT DIODE						
Forward Voltage	$I_F = 20\text{ mA}$	V_F	—	—	1.7	V
Reverse Leakage Current	$V_R = 5\text{ V}$	I_R	—	—	10	μA
COUPLED						
Operating Supply Current	$V_{CC} = 16\text{ V}$	I_{CC}	—	—	12	mA
Low Level Output Voltage	$V_{CC} = 5\text{ V}$, $R_L = 360\ \Omega$	V_{OL}	—	—	0.4	V
High Level Output Current	$V_{CC} = 5\text{ V}$, $V_{OH} = 30\text{ V}$ (Light Path Blocked)	I_{OH}	—	—	100	μA
Hysteresis Ratio			—	1.2	—	
Propagation Delay	$V_{CC} = 5\text{ V}$, $R_L = 360\ \Omega$	t_{PLH} , t_{PHL}	—	5	—	μs
Output Rise and Fall Time	$V_{CC} = 5\text{ V}$, $R_L = 360\ \Omega$	t_r , t_f	—	70	—	ns

Fig. 1 Output Voltage Vs. Shield Distance (Vertical)

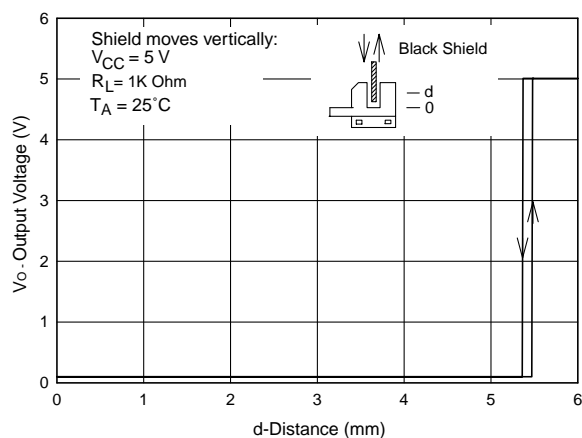


Fig. 2 Output Voltage vs. Shield Distance (Horizontal)

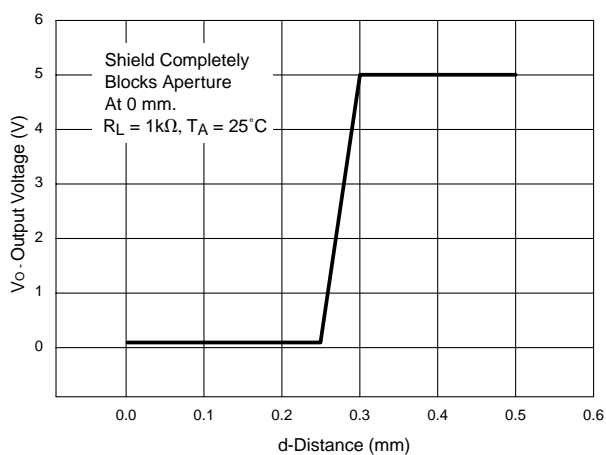


Fig. 3 Supply Current vs. Supply Voltage

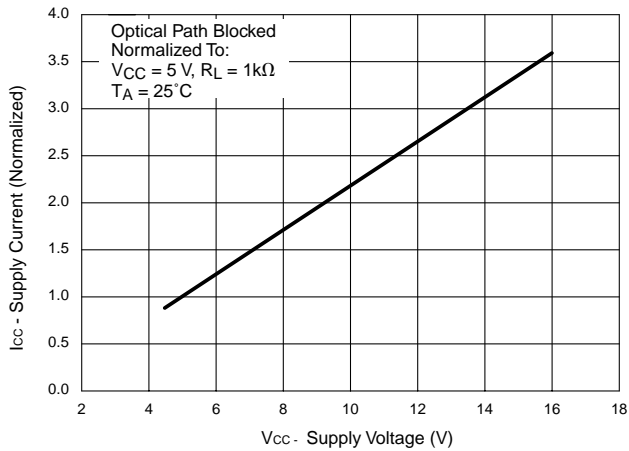


Fig. 4 Supply Current vs. Supply Voltage

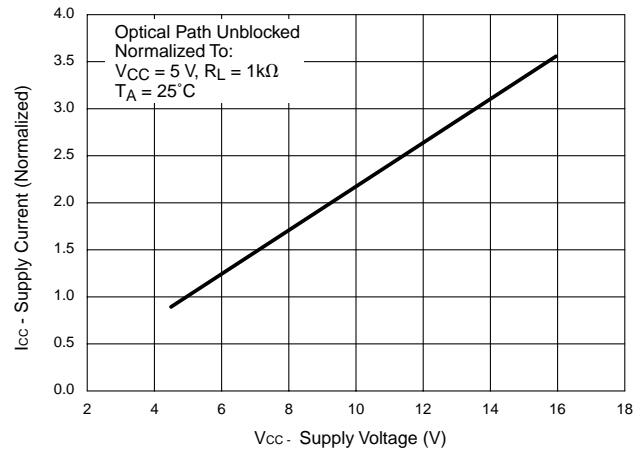


Fig. 5 Low Level Output Voltage vs. Supply Voltage

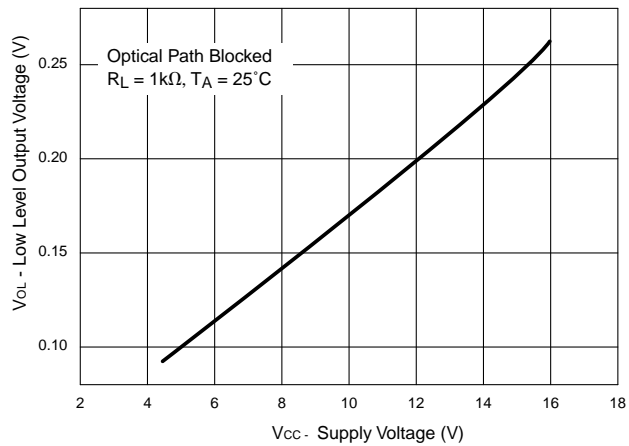
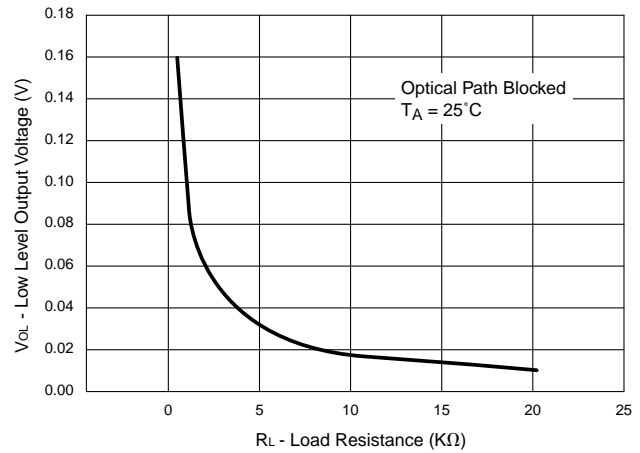


Fig. 6 Low Level Output Voltage vs. Load Resistance



The schematic diagram illustrates the internal circuitry of a GrayWire VCC and White Wire Vout driver. The circuit is powered by a VCC source (GrayWire) and grounded to GND (Green Wire). A voltage regulator is connected to VCC and GND, providing a stable supply to the logic components. The logic consists of a microcontroller (LA) and a driver IC (represented by a square symbol with a triangle). The microcontroller's output is connected to the driver IC, which in turn drives the White Wire (Vout) through a transistor. A diode is connected in parallel with the output to protect against reverse voltage. The circuit also includes several resistors for current limiting and signal conditioning.

The diagram illustrates the timing characteristics of a CMOS inverter. The top trace, labeled "Input Signal", shows a square wave transitioning from 0 mA to a high level and back. The bottom trace, labeled "Output Signal", shows the corresponding inverted square wave. Key parameters are marked: t_{PHL} (propagation delay high-to-low) and t_{PLH} (propagation delay low-to-high) are measured from the 50% input level to the 50% output level. t_f (fall time) and t_r (rise time) are measured between the 90% and 10% output levels. The output voltage levels are labeled V_{OH} (high) and V_{OL} (low). Percentages (10%, 50%, 90%) indicate the signal levels at which the timing points are measured.

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