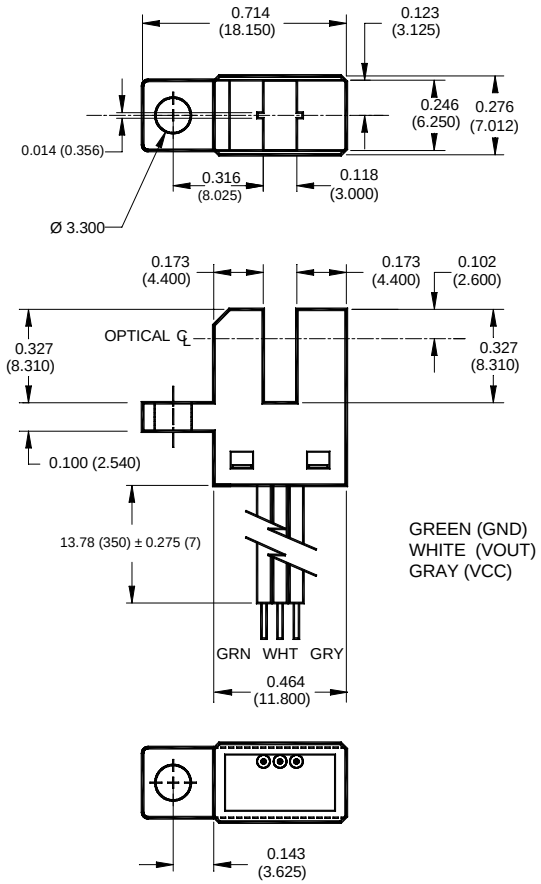
FAIRCHILD
SEMICONDUCTOR™

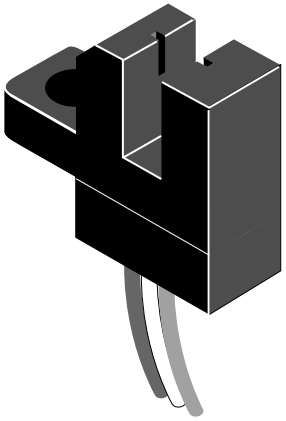
QVE00112
OPTOLOGIC® OPTICAL INTERRUPTER SWITCH

PACKAGE DIMENSIONS



NOTES:

1. Dimensions for all drawings are in inches (millimeters).
2. Tolerance of ± .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°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°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 mA	V_F	—	—	1.7	V
Reverse Leakage Current	V_R = 5 V	I_R	—	—	10	μA
COUPLED						
Operating Supply Current	V_{CC} = 16 V	I_{CC}	—	—	12	mA
Low Level Output Voltage	V_{CC} = 5 V, R_L = 360 Ω	V_{OL}	—		0.4	V
High Level Output Current	V_{CC} = 5 V, V_{OH} = 30 V (Light Path Blocked)	I_{OH}	—	—	100	μA
Hysteresis Ratio			—	1.2	—	
Propagation Delay	V_{CC} = 5 V, R_L = 360 Ω	t_{PLH}, t_{PHL}	—	5	—	μs
Output Rise and Fall Time	V_{CC} = 5 V, R_L = 360 Ω	t_r, t_f	—	70	—	ns

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

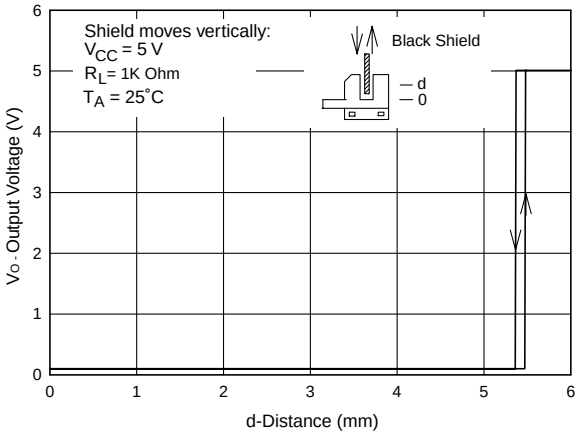


Fig. 2 Output Voltage vs. Shield Distance (Horizontal)

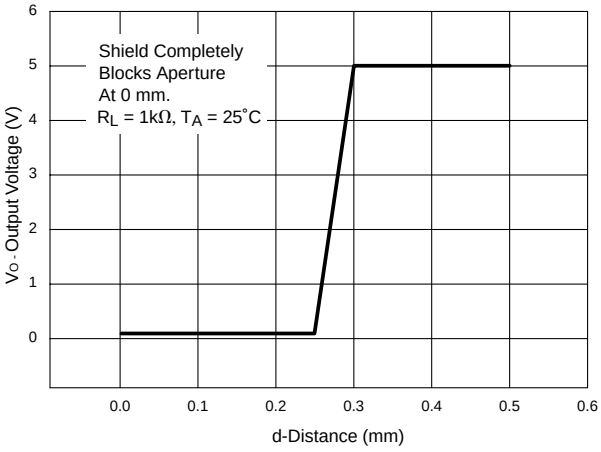


Fig. 3 Supply Current vs. Supply Voltage

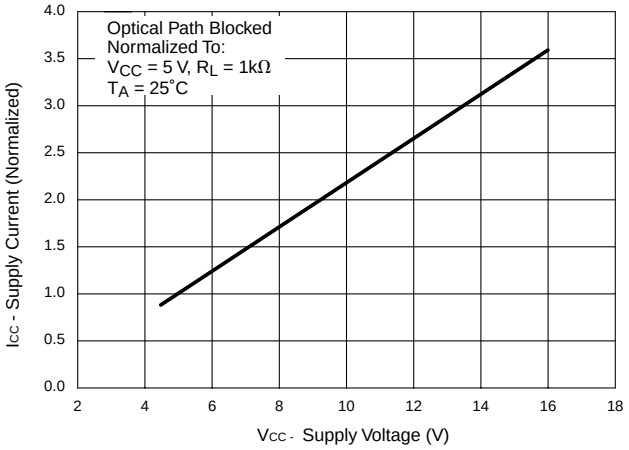


Fig. 4 Supply Current vs. Supply Voltage

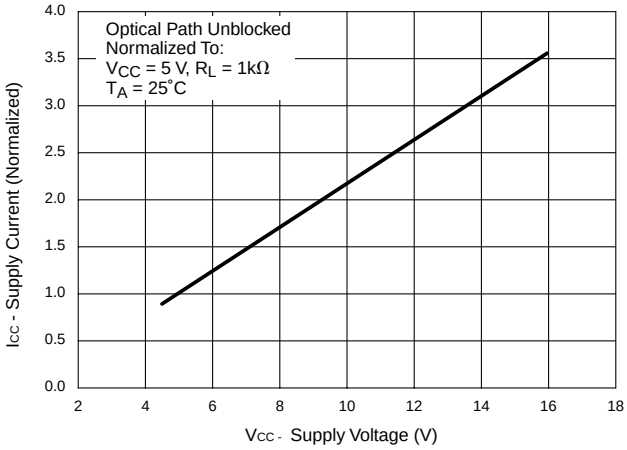


Fig. 5 Low Level Output Voltage vs. Supply Voltage

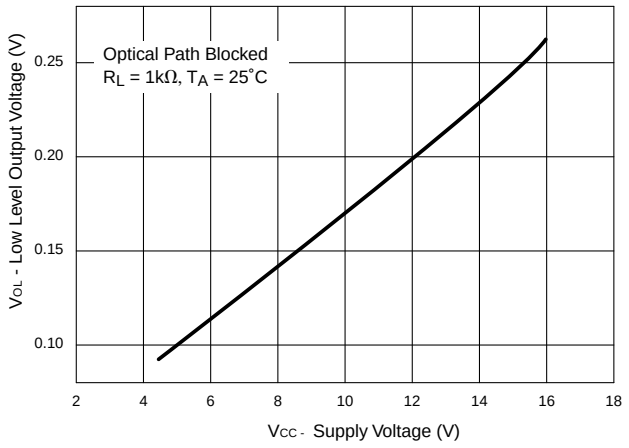


Fig. 6 Low Level Output Voltage vs. Load Resistance

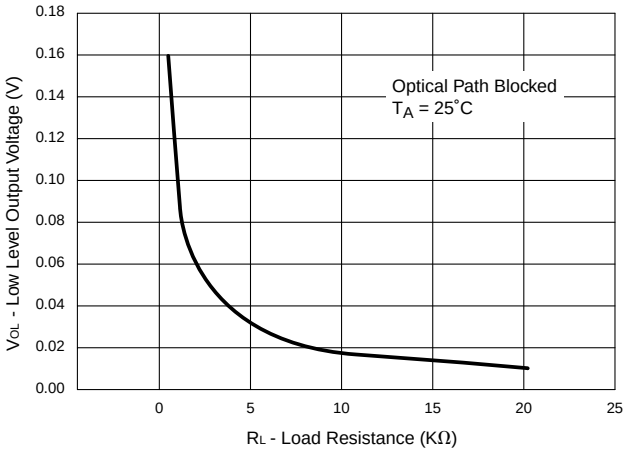


Fig. 7 Schematic

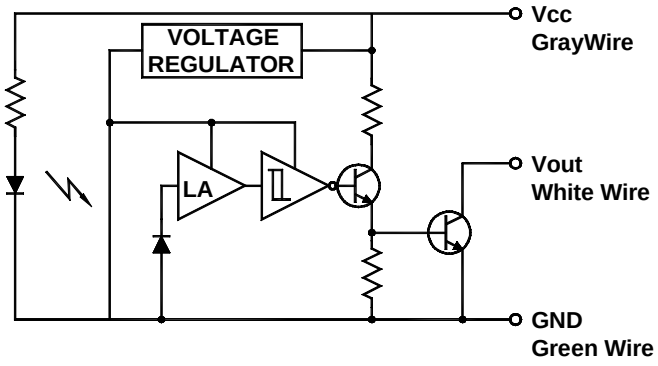
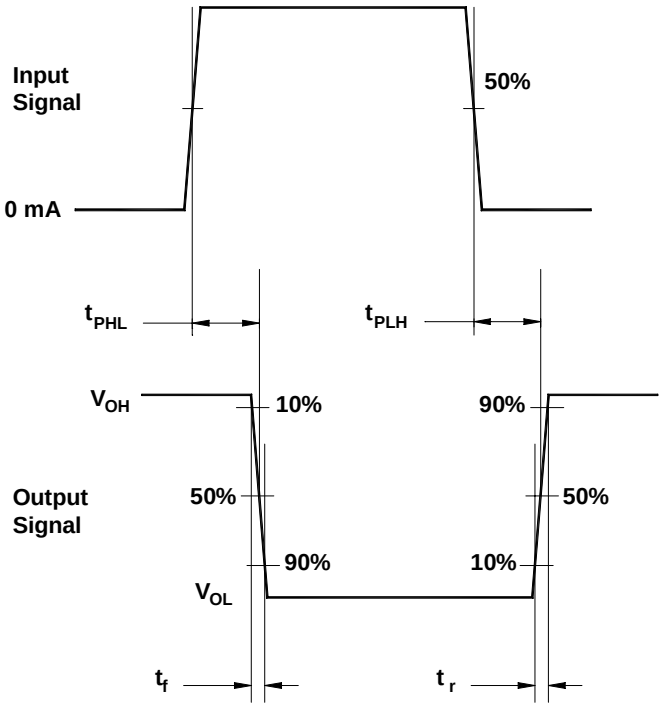


Fig. 8 Switching Test Curve for Inverters



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