Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

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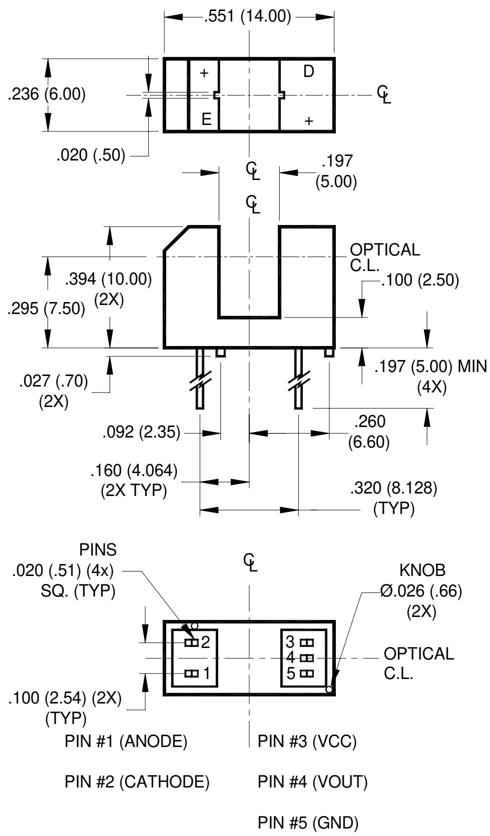
QVE00120

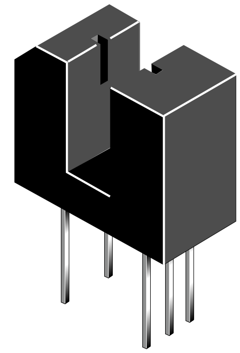
OPTOLOGIC® OPTICAL INTERRUPTER SWITCH

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.



FEATURES

- No contact switching
- 5.0 mm wide slot
- 0.5 mm aperture width
- Opaque black plastic housing
- Output configuration: Buffer open-collector
- TTL/CMOS compatible output
- Locating knobs on housing base for accurate mounting

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.
5. Soldering iron 1/16" (1.6mm) from housing.
6. As long as leads are not under any stress or spring tension.

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
Lead Temperature (Solder Iron)(3,4,5,6)	T_{SOL-I}	240 for 5 sec	°C
Lead Temperature (Solder Flow)(3,4,5,6)	T_{SOL-F}	260 for 10 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

QVE00120

OPTOLOGIC® OPTICAL INTERRUPTER SWITCH

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	I_F = 15 mA or 0 mA, V_{CC} = 16 V	I_{CC}	—		5	mA
Low Level Output Voltage	I_F = 15 mA, V_{CC} = 5 V, R_L = 360 Ω	V_{OL}	—		0.4	V
High Level Output Current	I_F = 0 mA, V_{CC} = 5 V, V_{OH} = 30 V	I_{OH}	—		100	μA
Turn on Threshold Current	V_{CC} = 5 V, R_L = 360 Ω	$I_F(+)$	—		15	mA
Turn off Threshold Current	V_{CC} = 5 V, R_L = 360 Ω	$I_F(-)$	0.50		—	mA
Hysteresis Ratio		$I_F(+)$ / $I_F(-)$		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

TYPICAL PERFORMANCE CURVES

Fig. 1 Output Voltage vs. Input Current

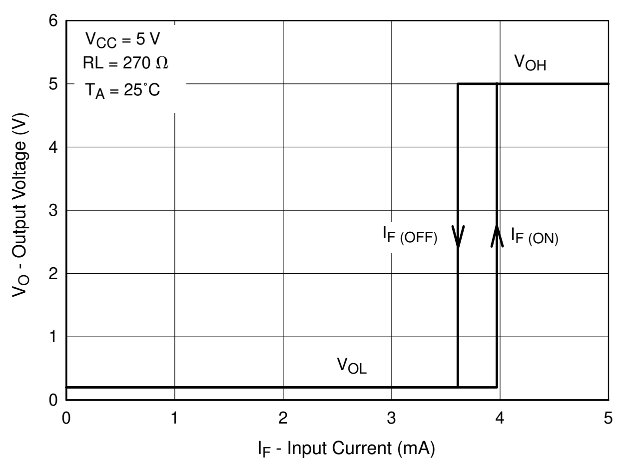


Fig. 2 Normalized Threshold Current vs. Shield Distance

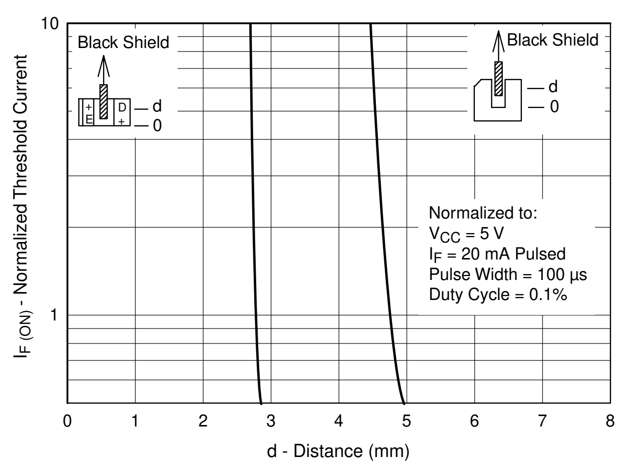


Fig. 3 Normalized Threshold Current vs. Supply Voltage

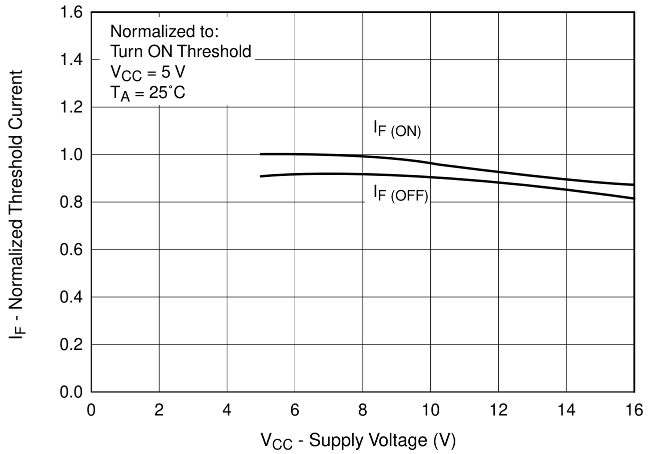


Fig. 4 Normalized Threshold Current vs. Ambient Temperature

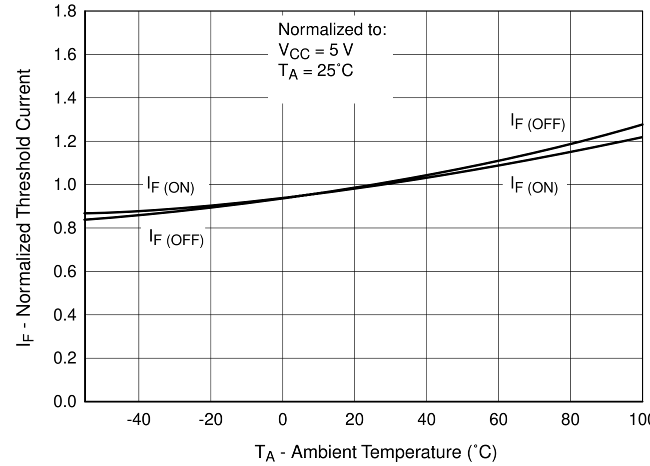


Fig. 5 Forward Current vs. Forward Voltage

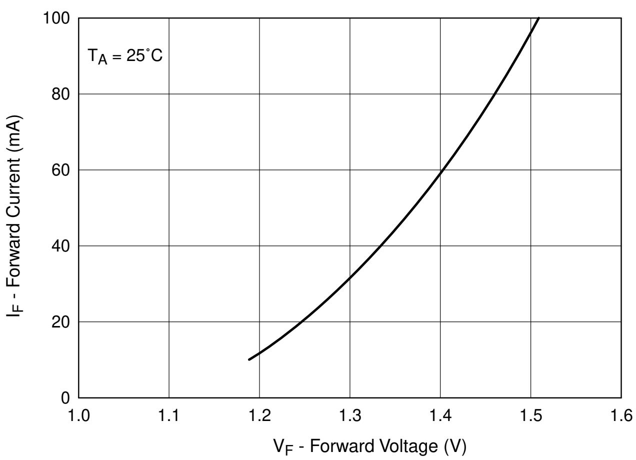


Fig. 6 Low Output Voltage vs. Output Current

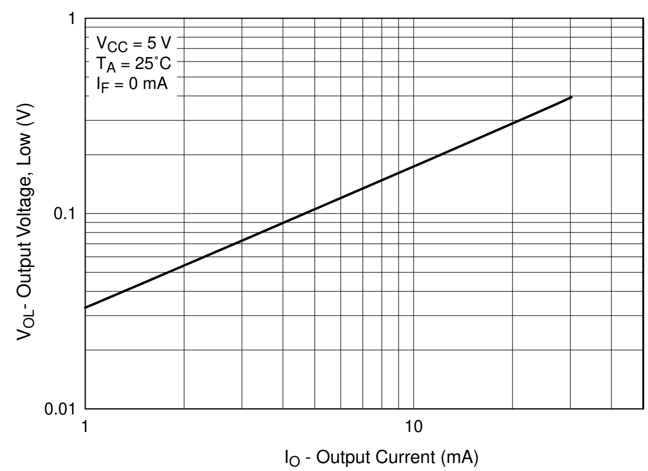


Fig. 7 Response Time vs. Forward Current

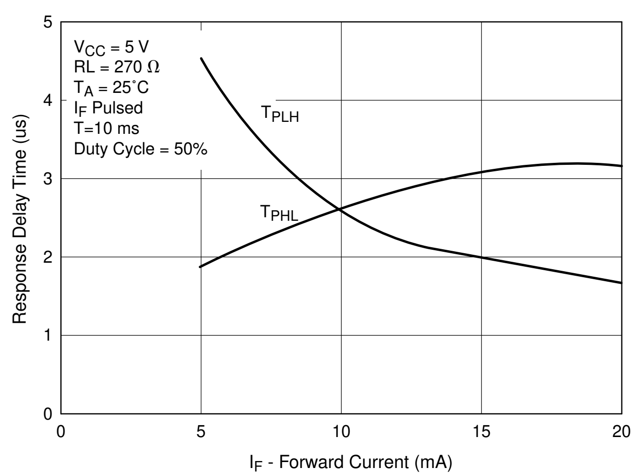
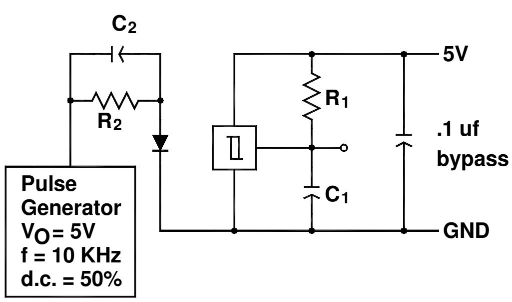


Fig. 8 Switching Speed Test Circuit



$R_1 = 270\ \Omega$ $C_1 = 15$ pf C_1 and C_2 include probe and
$R_2 = 360\ \Omega$ $C_2 = 20$ pf stray wire capacitance

Fig. 9 Typical Operating Circuit

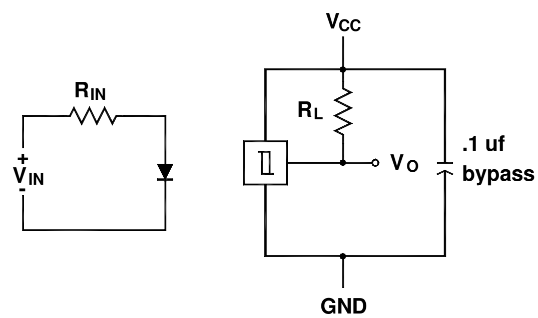


Fig. 10 Switching Test Curve for Buffers

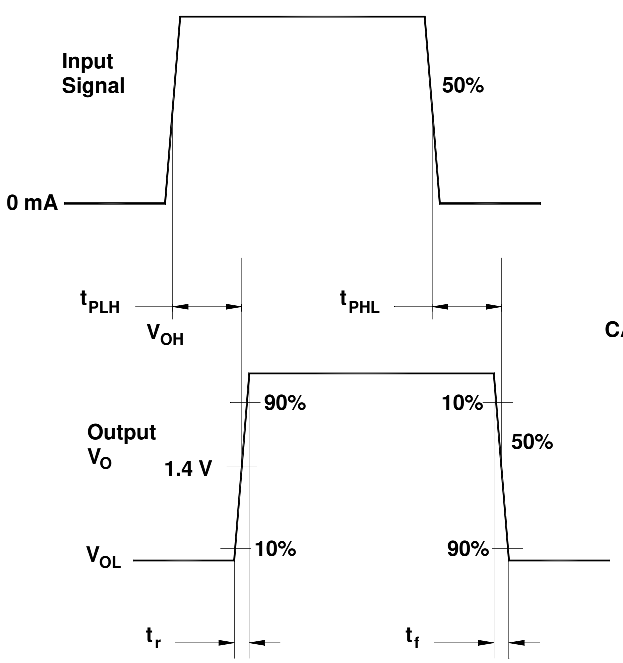
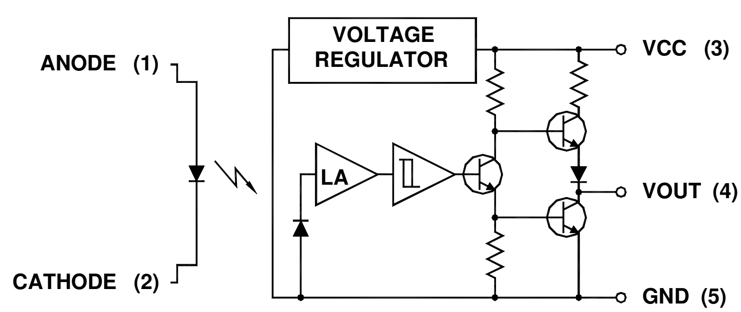


Fig. 11 Switching Test Curve for Inverters



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