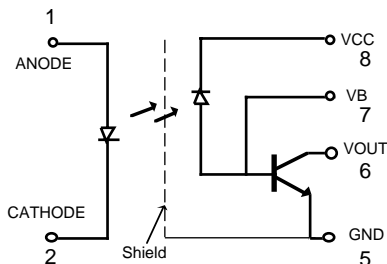
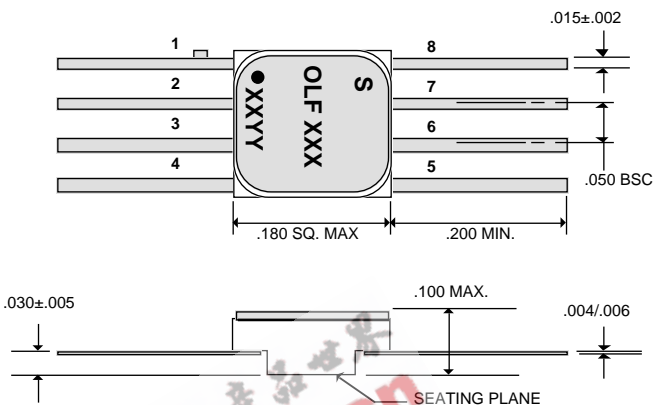




ISO LINK



SCHEMATIC



PACKAGE OUTLINE

Features

- ◆ *Hermetic SMT package*
- ◆ *Electrical parameters guaranteed over -55°C to +125°C ambient temp. range*
- ◆ *1000 Vdc electrical isolation*
- ◆ *High-Speed, 1 Mbit/s typical*
- ◆ *Open collector output*
- ◆ *300 Khz bandwidth*
- ◆ *Similar to 6N135/136, 4N55*
- ◆ *Radiation tolerant*
- ◆ *100% hi-rel screenings are offered*

Description

The OLF300 is suitable for interfacing TTL to LSTTL, TTL or CMOS as well as wide bandwidth analog applications. Each OLF300 has a light emitting diode and an integrated photo-diode transistor detector mounted and coupled in a custom 8-pin hermetic flat pack package providing 1000 Vdc electrical isolation between input and output. The integrated photo-diode transistor improves switching speed by orders of magnitude as compared to standard photo transistors, by reducing the base to collector capacitance. The internal shield provides excellent common-mode immunity performance.

NOTES:

1. Measured between pins 1, 2 and 6 shorted together and pins 3, 4, and 5 shorted together. $T_A = 25^\circ\text{C}$ and duration = 1 second.
2. Current transfer ratio is defined as the ratio of output collector current, I_C to the forward LED current, I_F , times 100%.

Absolute Maximum Ratings

Coupled	
Input to Output Isolation Voltage ¹	± 1000 Vdc
Storage Temperature Range	-65°C to +150°C
Operation Temperature Range	-55°C to +125°C
Lead Temperature 1.6 mm from case for 10 sec.	240°C
Input Diode	
Average Input Current	20 mA
Peak Forward Current (≤ 1mS duration)	40 mA
Reverse Voltage	5.0 V
Power Dissipation	36 mW
Output Detector	
Average Output Current	8 mA
Peak Output Current	16 mA
Supply Voltage, Vcc	-0.5 V to 18 V
Output Voltage, Vout	-0.5 V to 18 V
Power Dissipation	50 mW

ELECTRICAL CHARACTERISTIC (T_A = - 55 °C to +125 °C, Unless Otherwise Specified)

Parameter	Symbol	Min	Typ.	Max	Units	Test Conditions	Fig.	Note
Current Transfer Ratio	CTR	9	25		%	I _F =16 mA, V _O =0.4 V, V _{CC} =4.5 V	2	2
Logic High Output Current	I _{OH}		.05	100	μA	I _F =0mA, V _O =V _{CC} =15V		
Logic Low Supply Current	I _{CCL}		40	200	μA	I _F =10mA, V _{CC} =15V, V _O =open		
Logic High Supply Current	I _{CCH}		.05	10	μA	I _F =0mA, V _{CC} =15V, V _O =open		
Input Forward Voltage	V _F		1.7	2.5	V	I _F =10 mA		
Input Reverse Breakdown Voltage	B _{VR}	3			V	I _R =10 μA	1	
Input to Output Leakage Current	I _{I-O}			1.0	μA	Relative Humidity ≤ 45%, T _A = 25°C, V _{I-O} = 1000 Vdc		1
Propagation Delay Time Logic High to Low	t _{PHL}		0.3	2.0	μS	I _F =16 mA, V _{CC} = 5V, R _L =8.2 KΩ, C _L =50pF	3,4	
Logic Low to High	t _{PLH}		0.8	6.0	μS		3,4	
Common Mode Transient immunity								
Logic High Level	CM _H		>1		KV	I _F =0, R _L =8.2KΩ, VCM=10V p-p		
Logic Low Level	CM _L		>1		KV	I _F =16, R _L =8.2KΩ, VCM=10V p-p		

ALL TYPICAL @ T_A = 25°C

TYPICAL PERFORMANCE CURVES

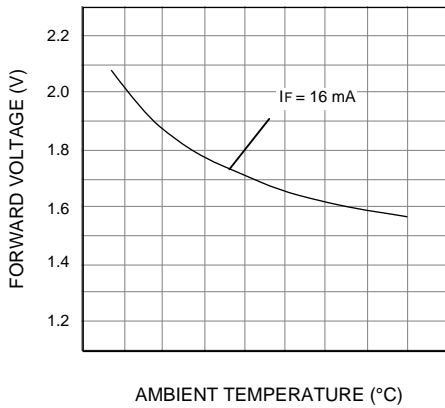


Fig. 1 - LED Forward Characteristics

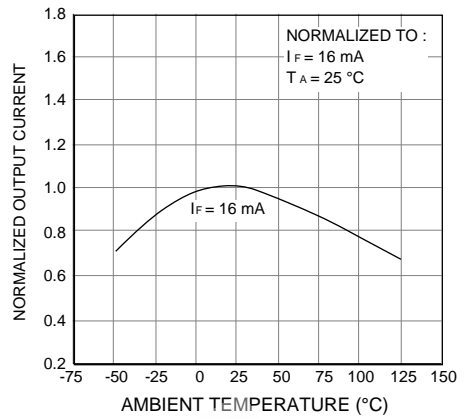


Fig. 2 - Normalized Output Current vs. I_F vs. Temperature

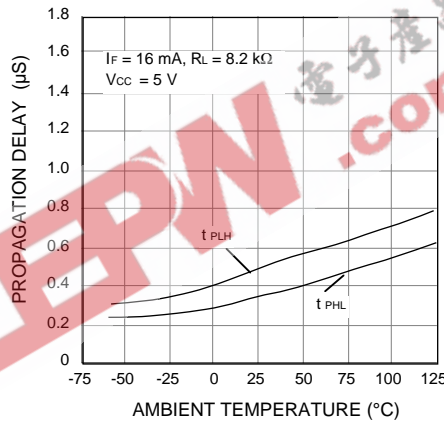


Fig. 3 - Propagation Delay vs. Temperature

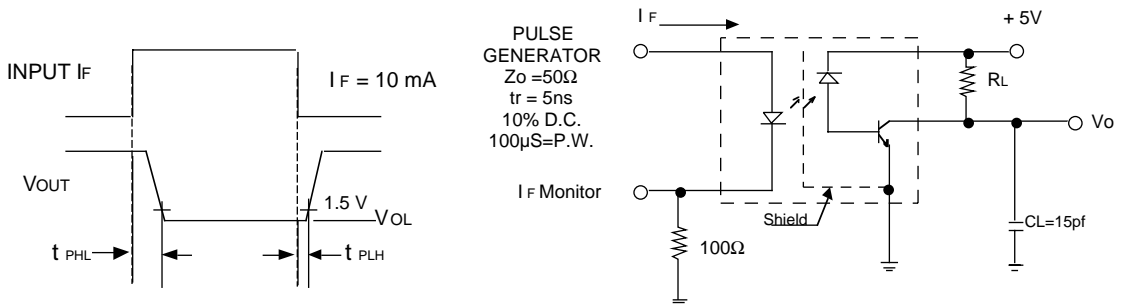


Fig. 4 - Switching Test Circuit