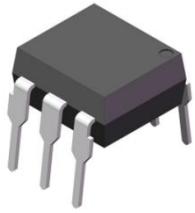
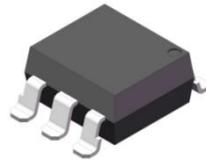


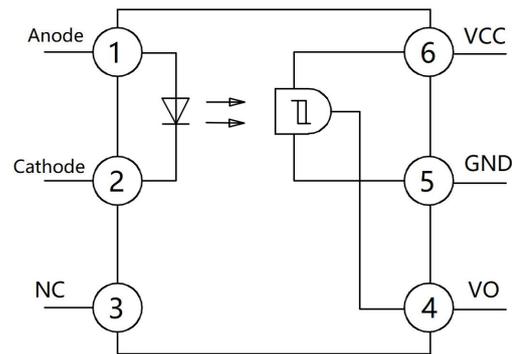
Product packaging logic diagram



DIP6



SMD6



Pin Configuration

Features

- High data rate, 2MHz typical (NRZ)
- High isolation voltage between input and output ($V_{iso} = 5000V_{rms}$)
- Operating Temperature: $-55^{\circ}C \sim 100^{\circ}C$
- Wide supply voltage capability, compatible with all popular logic systems
- Environmentally friendly products, compliant with CQC, UL, and VDE requirements

Mechanical Data

- Case: DIP6, SMD6
- Molding Compound: UL Flammability Classification Rating 94V-0
- Terminals: Matte tin-plated leads; solder ability-per MIL-STD-202, Method 208

Applications

- Fiber optic communication, photoelectric conversion, and digital signal processing are widely used. Can improve data transmission speed and reliability
- In motor control, PLC systems, and industrial robots, Achieve precise control through microsecond-level response and enhance system stability.
- Relying on high-speed optocouplers to achieve real-time data transmission and electrical isolation, ensuring patient safety and data accuracy. Medical imaging equipment and vital signs monitors.
- Spacecraft, satellite communications and radar systems, High-speed digital signal transmission, whose anti-interference capability is crucial in complex environments
- Power system monitoring, frequency converters and renewable energy converters, Ensure the safe operation of equipment.
- In-vehicle entertainment system, BMS (Battery Management System), Improve audio quality and circuit safety.



Ordering Information

XL H11L(X) (M) (G) - (U) (N) (Y)

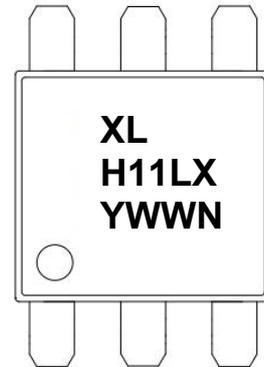
① ② ③ ④ ⑤ ⑥ ⑦

- ① Brand(XL)
- ② Product series(H11L1, H11L2, H11L3)
- ③ Package type(DIP6:None, SMD6:S)
- ④ Halogen option(None :Halogen free)
- ⑤ Lead frame (None: Copper)
- ⑥ Customer option 1 (0-9 or A-Z or none)
- ⑦ Customer option 2 (0-9 or A-Z or none)

Part Number	Package	Shipping Quantity	Marking Code
XLH11LX ¹	DIP6	65pcs / Tube	XLH11LX ¹
XLH11LX ¹ S	SMD6	1000pcs / Tape & Reel	XLH11LX ¹

Marking Information

- " XL" denotes brand.
- " X" denotes Product series : 1,2,3.
- " Y" denotes Year : A(2024), B(2025), C(2026)
- " WW" denotes Week' s number .
- " N" denotes the day of Week.



Maximum Ratings (@T_A = 25°C unless otherwise specified)

Parameter		Symbol	Value	Unit
Input	Forward Current	I _F	60	mA
	Reverse Voltage	V _R	6	V
	Power Dissipation	P _D	120	mW
Output	V ₄₅ Allowed Range	V _O	0 to 16	V
	V ₆₅ Allowed Range	V _{CC}	3 to 16	V
	Output Current	I _O	50	mA
	power dissipation	P _D	150	mW

Thermal Characteristics

Parameter	Symbol	Value	Unit
Total Power Dissipation	P _{TOT}	250	mW
Isolation Voltage *2	V _{ISO}	5000	V _{rms}
Operating Temperature	T _{OPR}	-55 ~ +100	°C
Storage Temperature Range	T _{STG}	-55 ~ +125	°C
Soldering Temperature *3	T _{SOL}	260	°C

Notes:

1. Pulse width ≤ 1 μs, Duty ratio: 0.001
2. 40 to 60% RH, AC for 1 minute. At this time, pins 1, 2 & 3 are shorted, and pins 4, 5 & 6 are shorted together.
3. For 10 seconds

Electrical Characteristics (@ T_A = 25°C unless otherwise specified)

Parameter		Symbol	Test Condition	Min.	Typ.	Max.	Unit	
Input	Forward Voltage	V _F	I _F = 10mA	-	1.24	1.5	V	
	Reverse Current	I _R	V _R = 5V	-	-	10	μA	
	Input Capacitance	C _J	V _R = 0V, f = 1kHz	-	-	100	pF	
Output	Operation Voltage Range	V _{CC}		3	-	15	V	
	Supply Current	I _{CC(off)}	I _F =0mA, V _{CC} =5V	-	0.62	1.5	mA	
	Output Current, High	I _{OH}	I _F =0mA, V _{CC} =V _O =15V	-	-	100	μA	
	Isolation Resistance	R _{ISO}	V _{I-O} =500VDC	10 ¹¹	-	-	Ω	
Transfer Characteristics	Supply Current	I _{CC(on)}	I _F =10mA, V _{CC} =5V	-	0.67	1.5	mA	
	Output Voltage .low	V _{OL}	V _{CC} =5V, I _F =I _{Fon(max)} R _L =270Ω	--	-	0.4	V	
	Turn on Threshold Current	BLH11L1	I _{Fon}	V _{CC} =5V, R _L =270Ω	-	-	1.6	mA
		BLH11L2			-	-	10	
		BLH11L3			-	-	5	
	Turn off Threshold Current	I _{Foff}	V _{CC} =5V, R _L =270Ω	-	1	-	mA	
	Hysteresis Ratio	I _{Foff} / I _{Fon}	V _{CC} =5V, R _L =270Ω	0.5	-	0.9		
	Turn on Time	t _{on}	V _{CC} =5V, I _F =I _{Fon} , R _L =270Ω	-	-	4	μs	
	Fall Time	t _r		-	0.1	-	μs	
	Turn off Time	t _{off}		-	-	4	μs	
Rise Time	t _r	-		0.1	-	μs		
Data Rate		-		2	-	MHz		

Ratings and Characteristics Curves (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

Fig.1 Forward Current vs. Forward Voltage

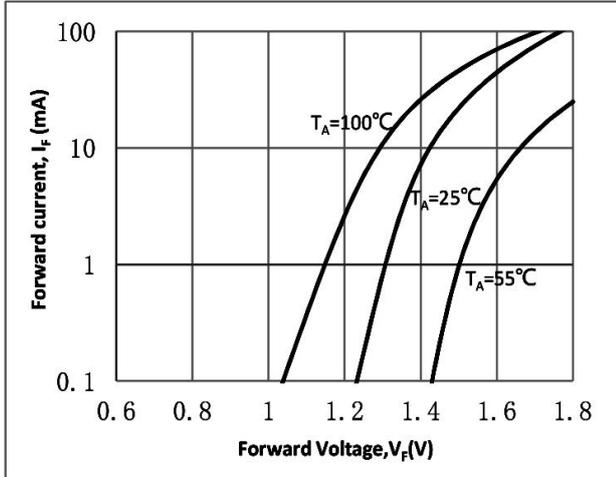


Fig.2 Transfer characteristic

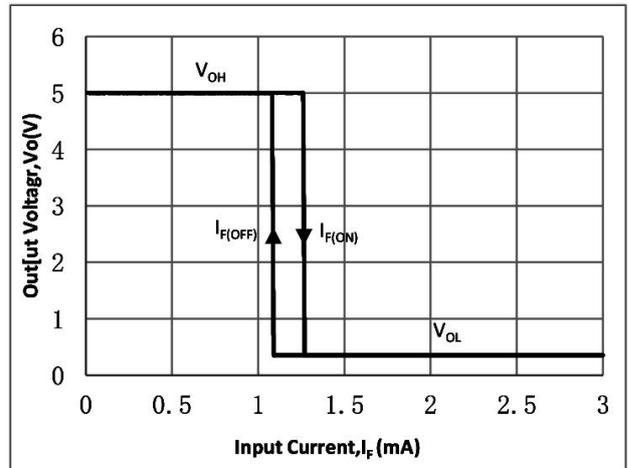


Fig.3 Turn On Threshold Current vs Supply Voltage

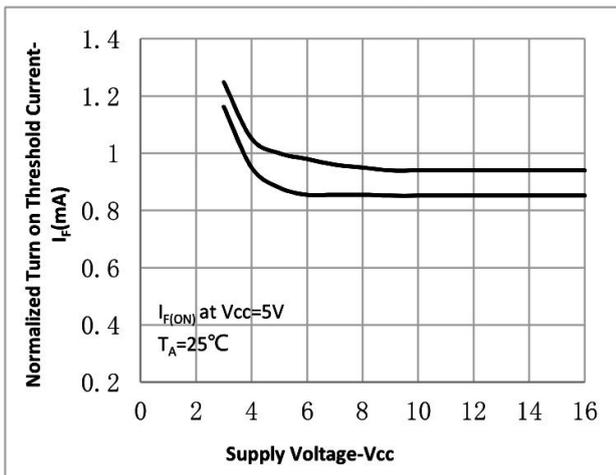


Fig.4 Turn On Threshold Current vs Ambient temperature

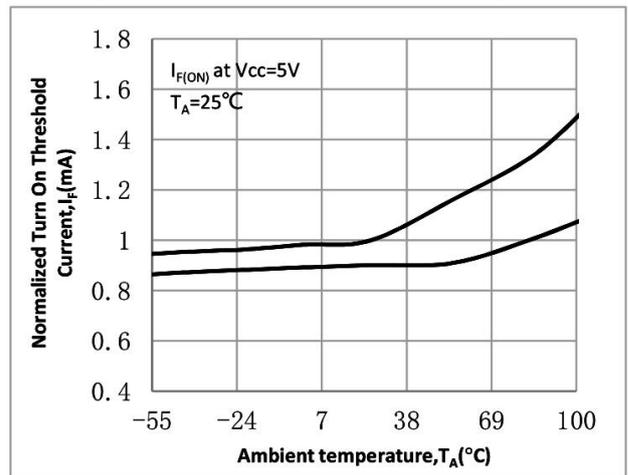


Fig.5 Low Level Output Voltage vs Load Current

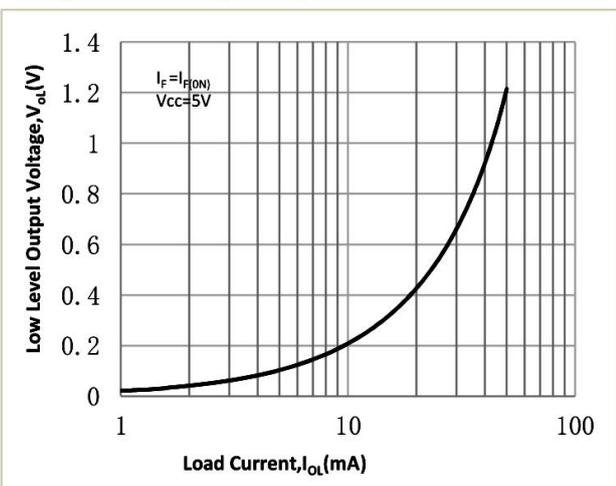
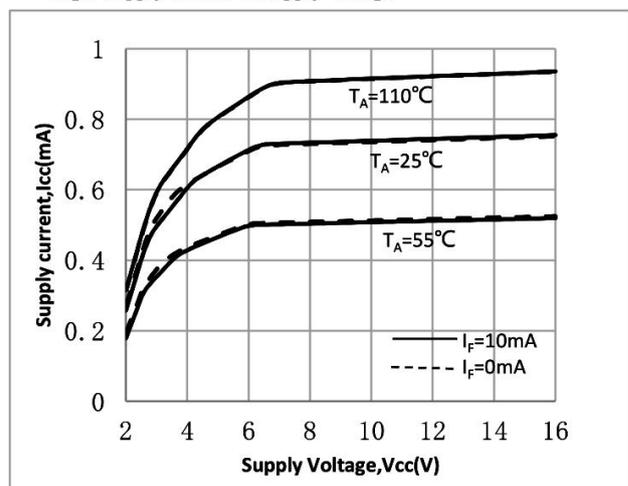
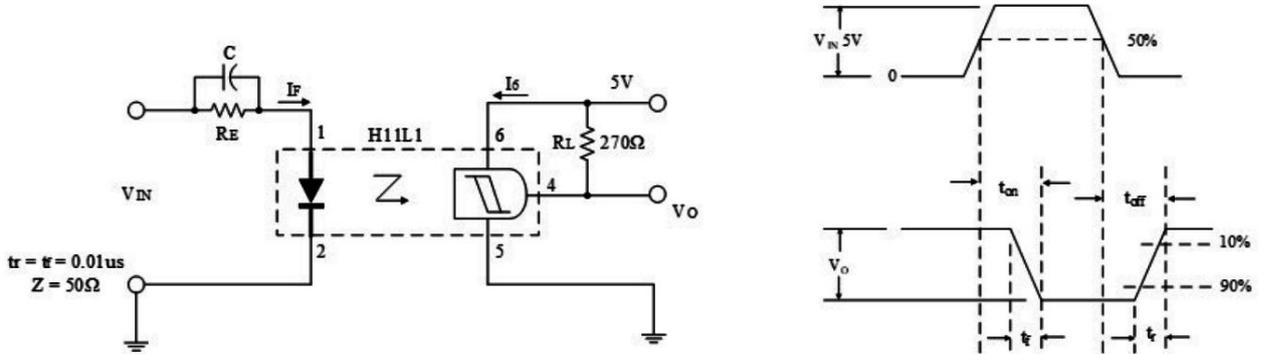


Fig.6 Supply current vs Supply Voltage

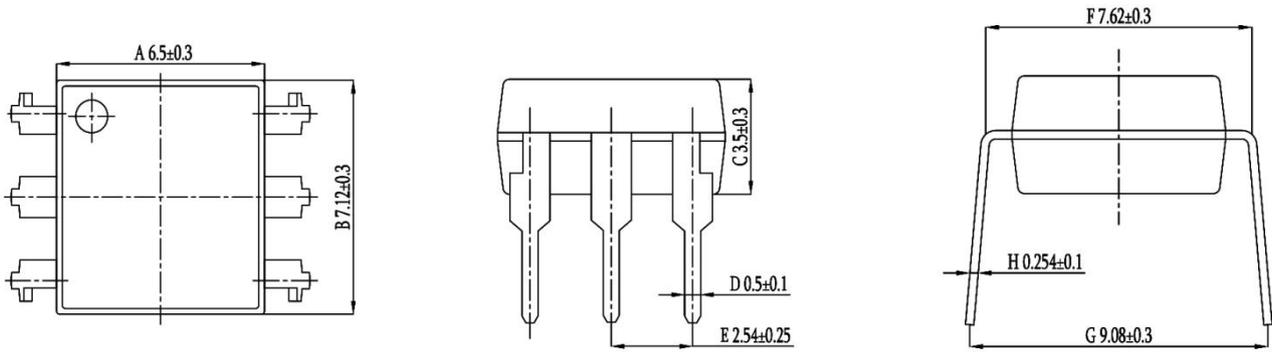


Ratings and Characteristics Curves (@ T_A = 25°C unless otherwise specified)

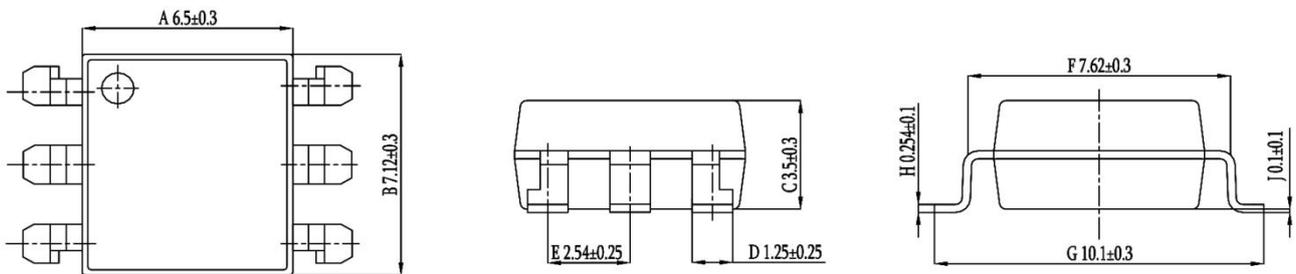
Fig.7 Switching Time Test Circuit & Waveforms



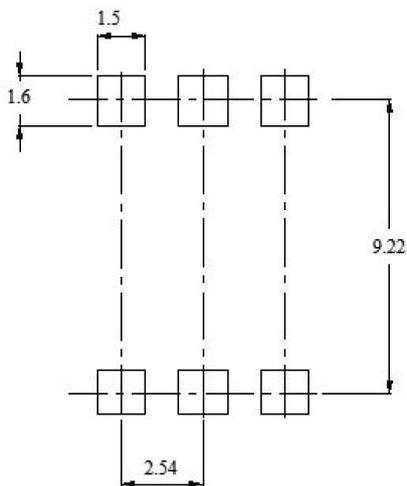
Package Outline Dimensions (unit: mm) DIP6



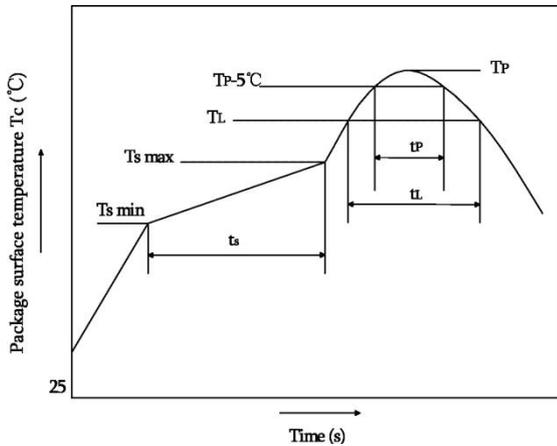
SMD6



SOLDERING FOOTPRINT (unit: mm)



Reflow soldering

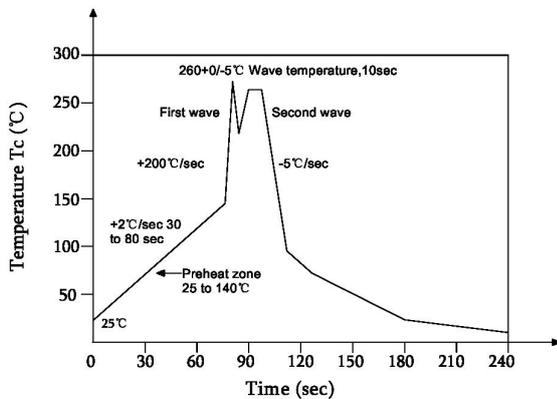


	Symbol	Min	Max	Unit
Preheat temperature	T_s	150	200	$^{\circ}\text{C}$
Preheat time	t_s	60	120	s
Ramp-up rate(T_L to T_P)	-	-	3	$^{\circ}\text{C/s}$
Liquidus temperature	T_L	217		$^{\circ}\text{C}$
Time above T_L	t_L	60	150	s
Peak temperature	T_P	-	260	$^{\circ}\text{C}$
Time during which T_c is between (T_P-5) and T_P	t_p	-	30	s
Ramp-down rate(T_P to T_L)	-	-	6	$^{\circ}\text{C/s}$

Note:

Reflow soldering is recommended at the temperatures and times shown, no more than three times.

Wave soldering



Profile feature	
Average ramp-up rate	$\sim 200^{\circ}\text{C/s}$
Heating rate during preheat	1°C/s to 2°C/s typical; 4°C/s maximum
Final preheat temperature T_s	$\sim 130^{\circ}\text{C}$
Preheat time (25°C to T_s)	$> 60\text{s}$
Peak temperature T_p	260°C
Time within peak temperature t_p	10s
Ramp-down rate	5°C/s maximum

Soldering with hand soldering iron

- Hand soldering iron is only used for product rework or sample testing.
- Hand soldering iron requirements: Temperature: $360^{\circ}\text{C} \pm 5^{\circ}\text{C}$ within 3s.

Packing

Package Type	Packing Form	Quantity per Tube & Reel	Quantity per Box	Quantity per Carton	Antistatic Bag Specification	Box Specification	Carton Specification	Note
DIP6	Tube(500mm)	65pcs/tube	25 tubes /box	12 boxes /ctn	190*670mm	520*105*50mm	545*372*235mm	Straight insert type material tube
SMD6	Reel(φ330mm)	100 pcs/reel	2 reels /box	5 boxes /ctn	380*420mm	350*340*60mm	365*330*370mm	Guard band 200mm /min.

■ **Summary table**

■ **DIP6 (Tube)**

Qty/ tube : 65pcs. Qty/box: 1625pcs.

Qty/ctn : 19500pcs.

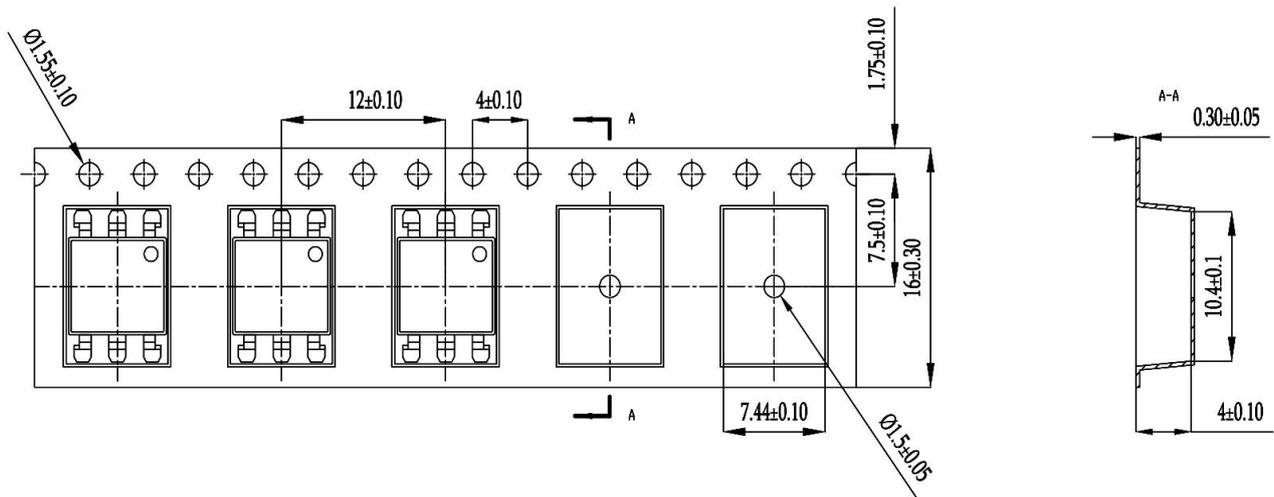
Schematic: (unit:mm)

■ **SMD6 (Reel)**

Qty/reel: 1000pcs. Qty/box: 2000pcs.

Qty/ctn : 10000pcs.

Schematic: (unit:mm)



IMPORTANT NOTICE

XINGLIGHT reserves the right to make changes without further notice to any product herein to make corrections, modifications, improvements, or other changes. XINGLIGHT does not assume any liability arising out of the application or use of any product described herein; neither does it convey any license under its patent rights, nor the rights of others.