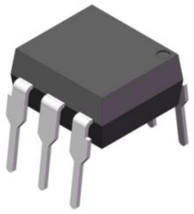
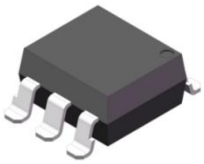
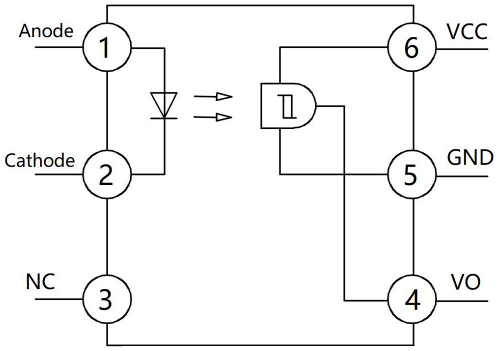
Product packaging logic diagram



DIP6



SMD6



Pin Configuration

Features

- Very high speed：2 MBit/s
- High isolation voltage between input and output (Viso =5000Vrms)
- Operating Temperature: -55℃~100℃
- 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

- Widely used in communications and networking, industrial automation and control, motor drive and energy management, medical equipment, and automotive electronics fields.
- Communications and Networking：Fiber optic communication, data center.

Industrial Automation and Control：PLC and frequency converter, Servo drive system, Industrial robot.

- Motor Drive and Energy Management:Motor control, Motor protection,Power electronics,Consumer Electronics.
- Emerging Technology Fields：Intelligent Transportation System,Medical equipment,Automatic production line.
- Automotive Electronics：In-vehicle Network System,Battery Management System (BMS),EV Charging Station.

Ordering Information

XL	H11L(X)	(X)	(X)	-	(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.
- "H11LX" 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	75	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}	225	mW
Isolation Voltage [*2]	V_{ISO}	5000	Vrms
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≤1μs, 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		$I_{CC(off)}$	IF=0mA, Vcc=5V	-	0.62	1.5	mA
	Output Current, High		I_{OH}	I_F=0mA, Vcc=Vo=15V	-	-	100	μA
	Isolation Resistance		R_{ISO}	V_{I-O}=500VDC	10^{11}	-	-	Ω
Transfer Characteristics	Supply Current		$I_{CC(on)}$	I_F=10mA, Vcc=5V	-	0.67	1.5	mA
	Output Voltage .low		V_{OL}	Vcc=5V, I_F=$I_{Fon(max.)}$ R_L=270Ω	--	-	0.4	V
	Turn on Threshold Current	XLH11L1	I_{Fon}	Vcc=5V, R_L=270Ω	-	-	1.6	mA
		XLH11L2			-	-	10	
		XLH11L3			-	-	5	
	Turn off Threshold Current		I_{Foff}	Vcc=5V, R_L=270Ω	-	1	-	mA
	Hysteresis Ratio		I_{Foff} /I_{Fon}	Vcc=5V, R_L=270Ω	0.5	-	0.9	
	Turn on Time		t_{on}	Vcc=5V, I_F=I_{Fon}, R_L=270Ω	-	500	-	ns
	Fall Time		t_r		-	100	-	ns
	Turn off Time		t_{off}		-	500	-	ns
	Rise Time		t_r		-	100	-	ns

Switching Characteristics (@ T_A = -40°C～85°C, V_{CC}= 5V, I_F= 7.5mA, unless otherwise specified)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Propagation Delay Time to Output HIGH Level	T_{PLH}	C_L=15pF R_L=350Ω T_A=25°C	-	41	-	ns
Propagation Delay Time to Output Low Level	T_{PHL}		-	50	-	ns
Pulse Width Distortion	$\lvert T_{PHL}–T_{PLH} \rvert$		-	5	35	ns
Output Rise Time (10–90%)	t_r		-	30	-	ns
Output Rise Time (90–10%)	t_f		-	10	-	ns
Enable Propagation Delay Time to Output HIGH Level	t_{ELH}	I_F=7.5mA, V_{EH}=3.5V R_L=350Ω, C_L=15pF	-	15	-	ns
Enable Propagation Delay Time to Output LOW Level	t_{EHL}		-	40	-	ns
Common Mode Transient Immunity (at Output HIGH Level)	$\lvert CM_H \rvert$	T_A=25°C,I_F=0mA $\lvert V_{CM} \rvert$=50V(Peak) V_{OH}=2.0V,R_L=350Ω	5000	10000	-	V/µs
Common Mode Transient Immunity (at Output LOW Level)	$\lvert CM_L \rvert$	$_F$=7.5mA, V_{OL}=0.8V R_L=350Ω, T_A=25°C	5000	10000	-	V/µs

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

Fig.1 Forward Current vs. Forward Voltage

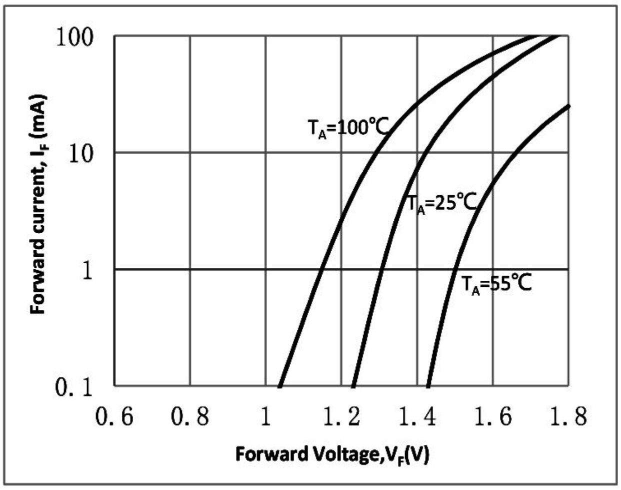


Fig.2 Transfer characteristic

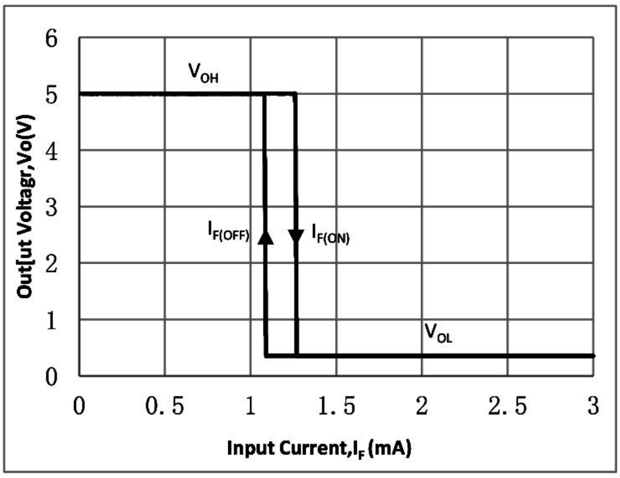


Fig.3 Turn On Threshold Current vs Supply Voltage

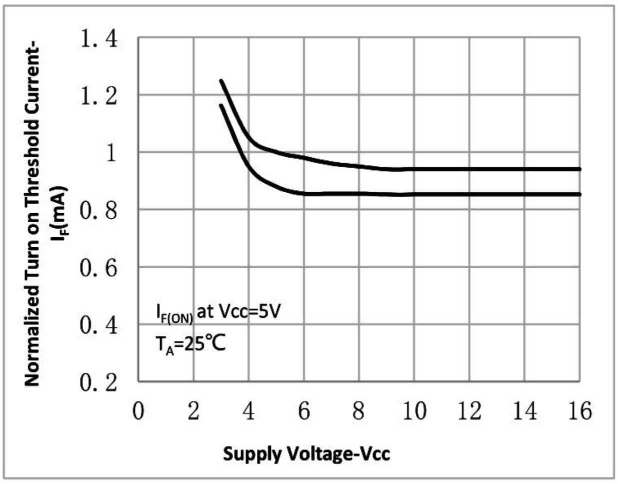


Fig4 Turn On Threshold Current vs Ambient temperature

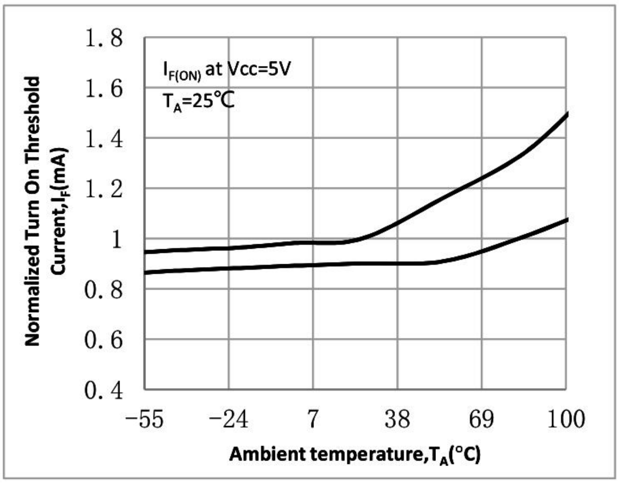


Fig.5 Low Level Output Voltage vs Load Current

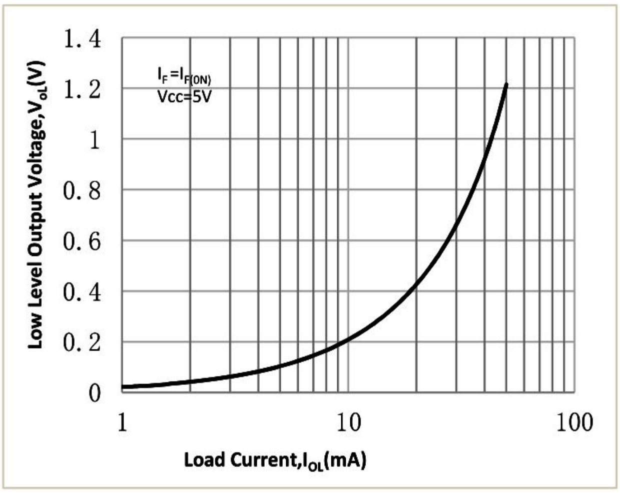
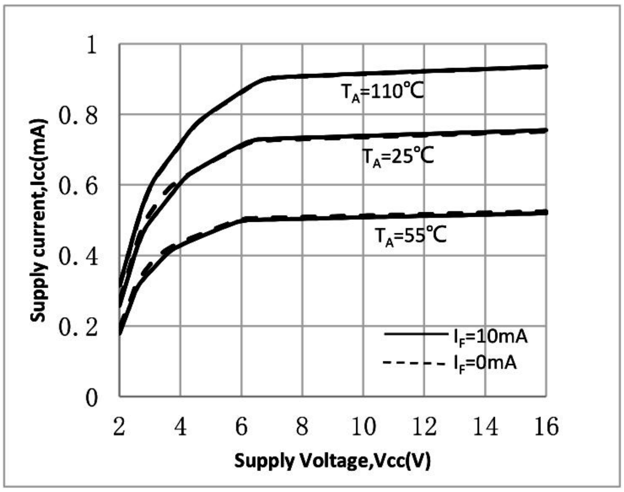
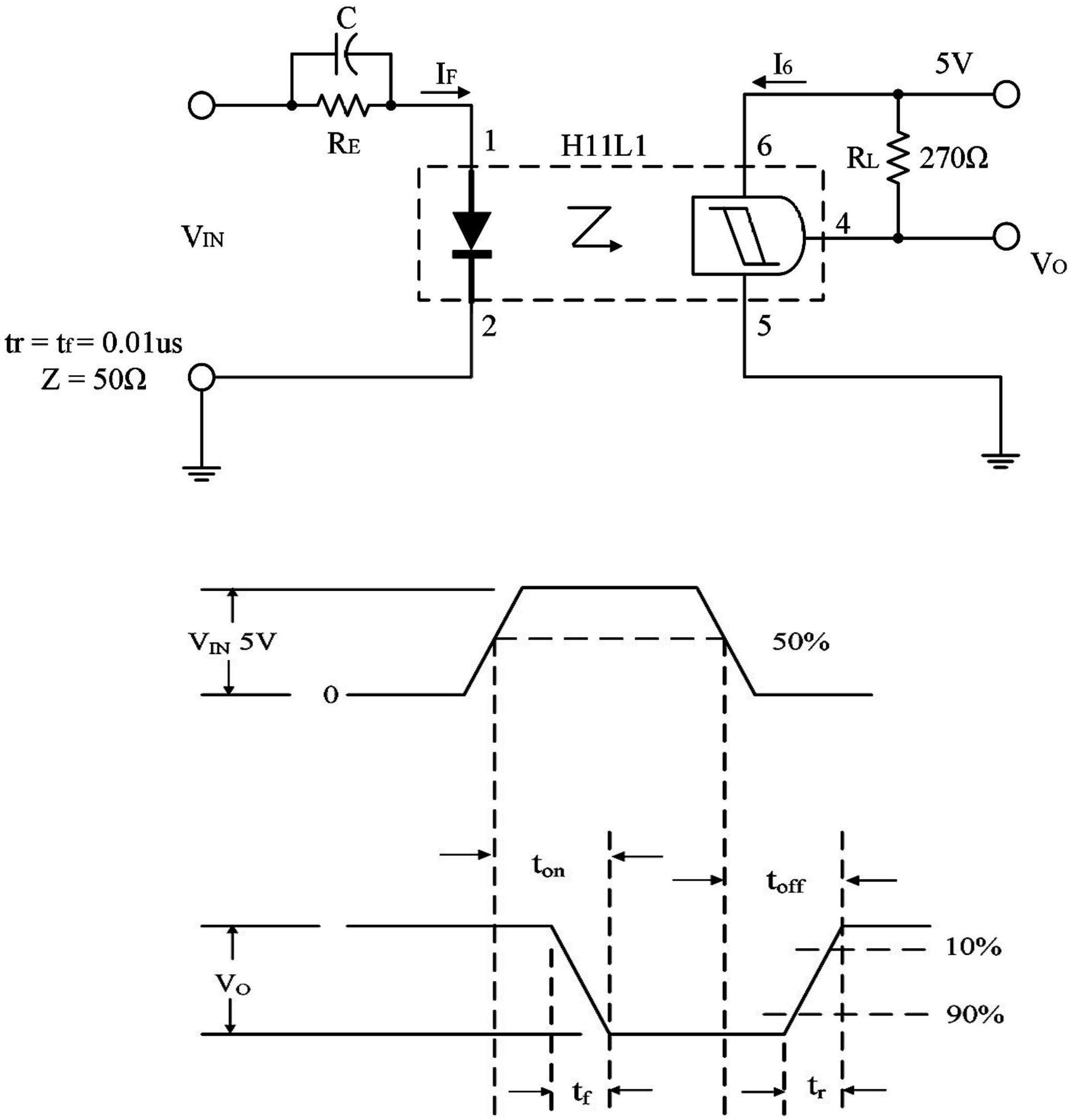


Fig.6 Supply current vs Supply Voltage



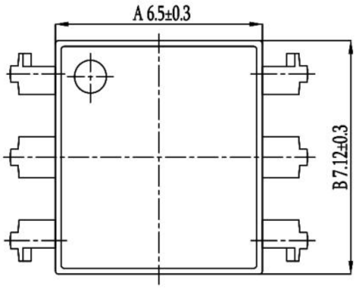
Ratings and Characteristics Curves (@ TA = 25°C unless otherwise specified)

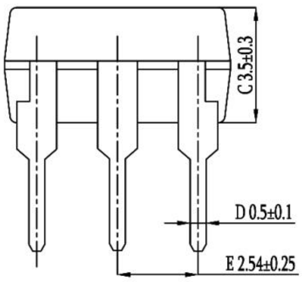
Fig.7 switching Time Test Circuit & Waveforms

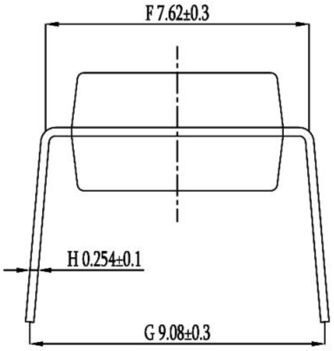


Package Outline Dimensions (unit: mm)

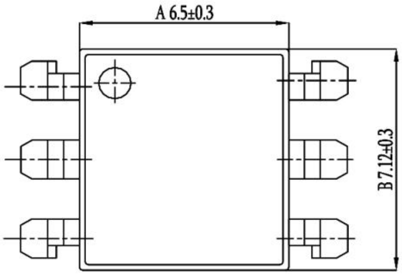
DIP6

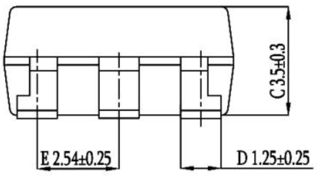


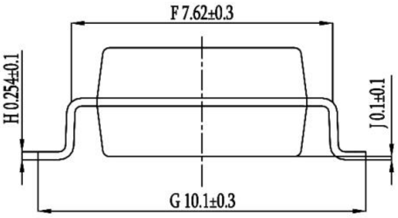




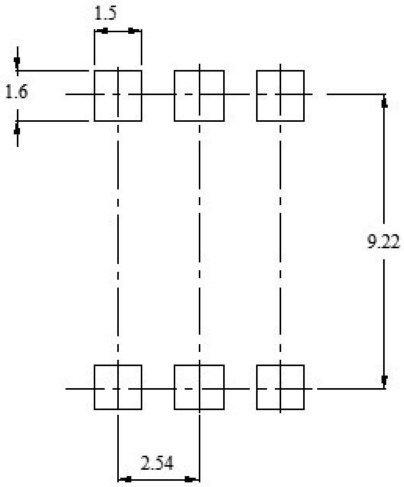
SMD6



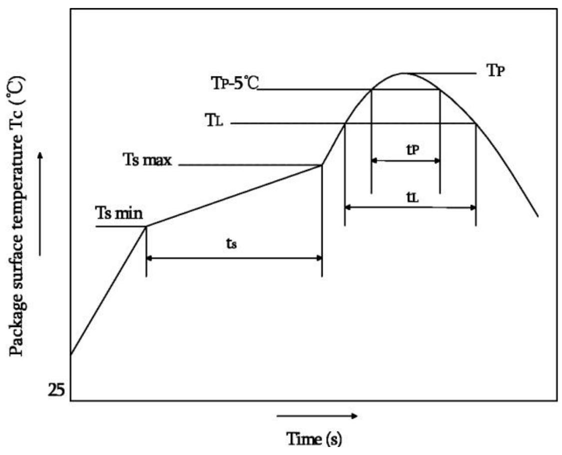




SOLDERING FOOTPRINT (unit: mm)



Reflow soldering

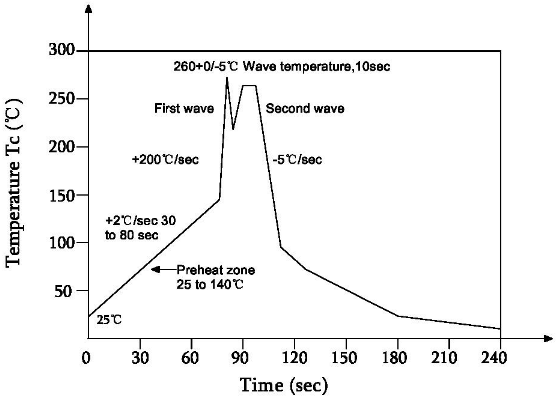


	Symbol	Min	Max	Unit
Preheat temperayure	Ts	150	200	℃
Preheat time	ts	60	120	s
Ramp-up ratea(T_L to T_P)	-	-	3	℃/s
Liquidus temperature	T_L	217		℃
Time above T_L	t_L	60	150	s
Peak temperature	Tp	-	260	℃
Time during which Tc is between (T_P-5) and T_P	t_p	-	30	s
Ramp-down rate(T_P to T_L)	-	-	6	℃/s

Note:

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

Wave soldering



Profile feature	
Average ramp-up rate	~200℃/s
Heating rate during preheat	1℃/s to 2℃/s typical;4℃/s maximum
Final preheat temperature Ts	~130℃
Preheat time (25℃ to Ts)	>60s
Peak temperature Tp	260℃
Time within peak temperature tp	10s
Ramp-down rate	5℃/s maximum

Soldering with hand soldering iron

A. Hand soldering iron is only used for product rework or sample testing.

B. Hand soldering iron requirements:Temperature:360 ℃+5℃ 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	50 tubes /box	10 boxes /ctn	190*670mm	520*105*50mm	545*372*235mm	Straight insert type material tube
SMD6	Reel(ф330mm)	1000 pcs/reel	2 reels /box	10 boxes /ctn	380*420mm	350*340*60mm	365*330*370mm	Guard band 200mm /min.

- **Summary table**
- **DIP6 (Tube)**

Qty/ tube：65pcs. Qty/box：3250pcs.

Qty/ctn：32500pcs.

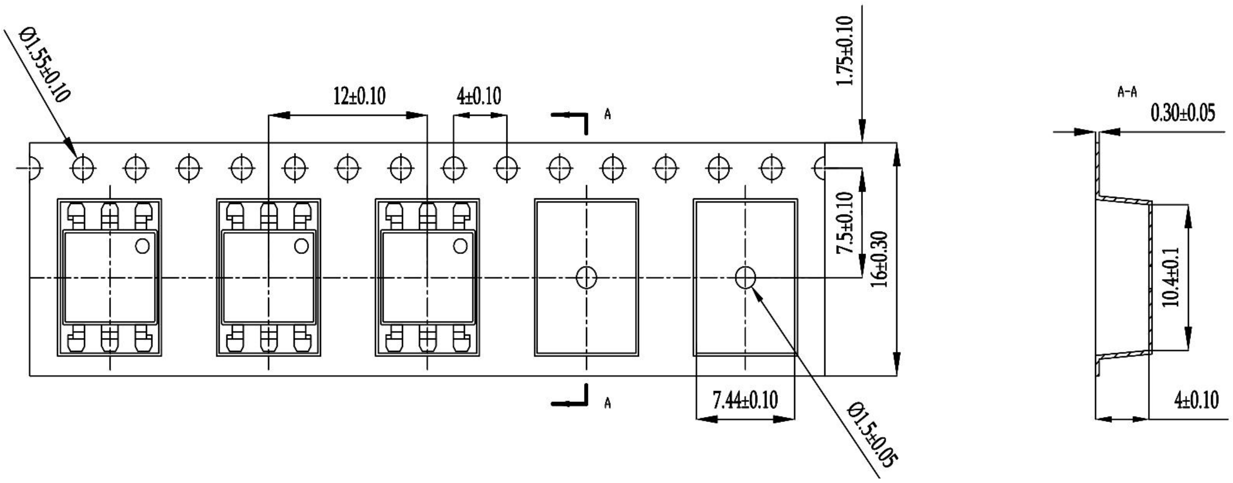
Schematic： (unit:mm)

- **SMD6 (Reel)**

Qty/reel：1000pcs. Qty/box：2000pcs.

Qty/ctn：20000pcs.

Schematic： (unit:mm)



Attention

- XINGLIGHT implements dynamic technical updates. Specifications are subject to change. Refer to the official website for the latest version.
- Users must strictly adhere to specified conditions. Failures caused by misuse (overload, high temperature, incompatible circuits) are excluded from warranty.
- Contact technical support for customized validation in critical applications (medical devices, industrial control).
- This document is valid until Dec 31, 2026. Updates will be notified on the official website.
- For further clarification on technical specifications or application solutions, please contact us through official channels.