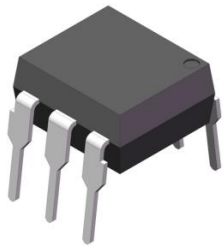
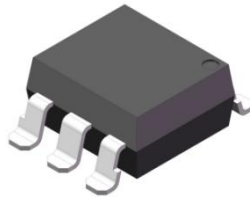
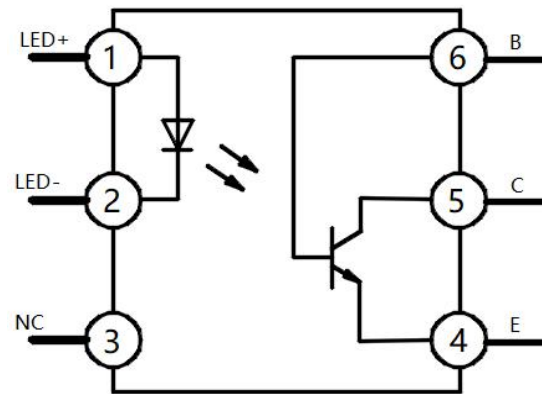


Product packaging logic diagram

DIP6



SMD6



Pin Configuration

Features

- Current transfer ratio
(CTR: $\geq 20\%$ at $I_F = 10\text{mA}$, $V_{CE} = 10\text{V}$)
- High isolation voltage between input and output ($V_{iso} = 5000\text{V}_{rms}$)
- Operating Temperature: $-55^\circ\text{C} \sim 100^\circ\text{C}$
- 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

- Industrial automation equipment (PLC module, sensor interface)
- Measurement instrument signal isolation
- Design and application of smart meters and switching power supplies
- Photo voltaic inverters, energy storage system applications
- Main control circuit for household appliances (air conditioning, refrigerator, water heater);



Ordering Information

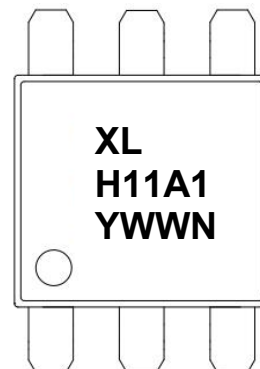
XL H11A1 (M) (G) - (U) (N) (Y)
① ② ③ ④ ⑤ ⑥ ⑦

- ① Brand(XL)
② Product series(H11A1)
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
XLH11A1	DIP6	65pcs / Tube	XLH11A1
XLH11A1S	SMD6	1000pcs / Tape & Reel	XLH11A1

Marking Information

- " XL" denotes brand.
- " H11A1" denotes Product series.
- " 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
	Forward Peak Current*1	I _{FP}	1	A
	Reverse Voltage	V _R	6	V
	Power Dissipation	P _D	100	mW
Output	Collector Power Dissipatio	P _C	300	mW
	Collected Current	I _C	100	mA
	Collector-Base Voltage	V _{CBO}	70	V
	Collector-Emitter Voltage	V _{CEO}	30	V
	Eemitter- Collector Voltage	V _{ECO}	7	V

Thermal Characteristics

Parameter	Symbol	Value	Unit
Total Power Dissipation	P _{TOT}	350	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 ≤ 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	-	1.2	1.5	V
	Reverse Current	I _R	V _R = 3V	-	-	10	μA
	Input Capacitance	C _t	V = 0V, f = 1kHz	-	50	-	pF
Output	Collector Dark Current	I _{CEO}	V _{CE} = 10V	-	-	50	nA
	Collector-Base Breakdown Voltage	B _V C _{BO}	I _B = 0.1mA, I _F = 0	70	-	-	V
	Collector-Emitter Breakdown Voltage	B _V C _{EO}	I _C = 0.1mA, I _F = 0	30	-	-	V
	Emitter-Collector Breakdown Voltage	B _V E _{CO}	I _E = 0.01mA, I _F = 0	7	-	-	V
Transfer Characteristics	Current Transfer Ratio	CTR	I _F = 10mA, V _{CE} = 10V	20	-	-	%
	Collector-Emitter Saturation Voltage	V _{CE(sat)}	I _F = 50mA, I _C = 2mA	-	-	0.5	V
	Isolation Resistance	R _{ISO}	DC500V, 40~60%R.H.	5*10 ¹⁰	10 ¹¹	-	Ω
	Isolation Capacitance	C _f	V = 0, f = 1MHz	-	1	2.5	pF
	Response Time (Rise)	T _r	V _{CE} = 10V	-	3	10	μs
	Response Time (Fall)	T _f	I _C = 2mA, R _L = 100Ω	-	3	10	μs

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

Fig.1 Forward Current vs. Forward Voltage

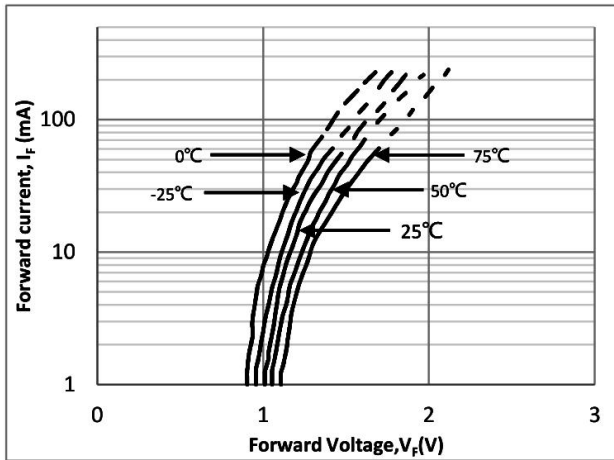


Fig.2 Collector Current vs. Collector-emitter Voltage

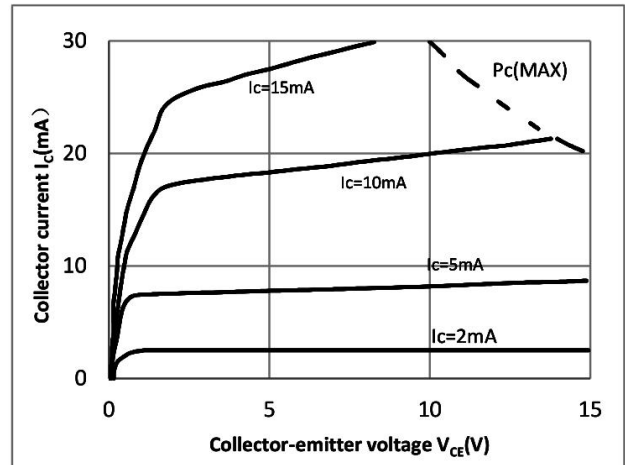


Fig.3 Forward Current vs. Forward Voltage

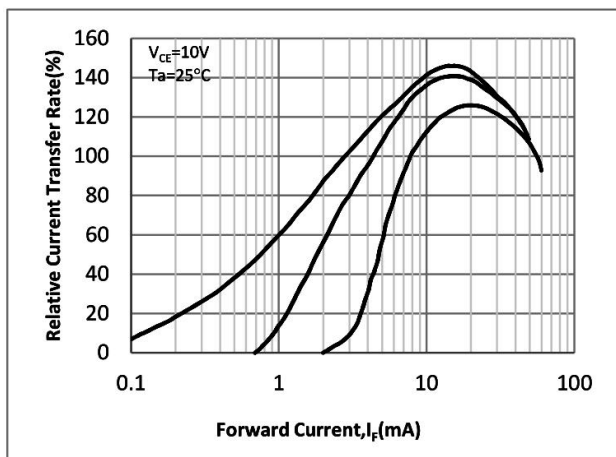


Fig.4 Collector-emitter Saturation Voltage vs. Forward Current

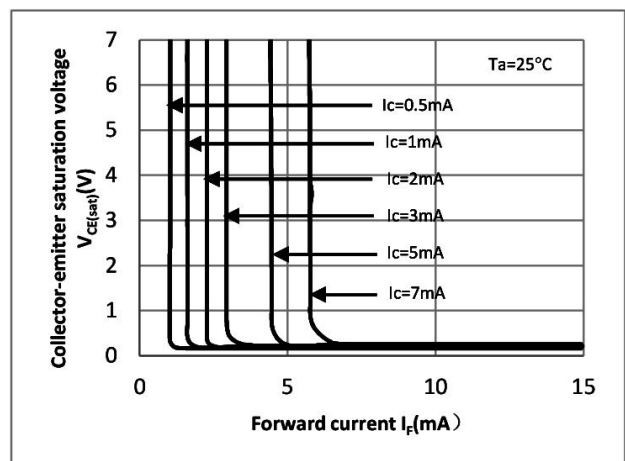


Fig.5 Collector Dark Current vs. Ambient Temperature

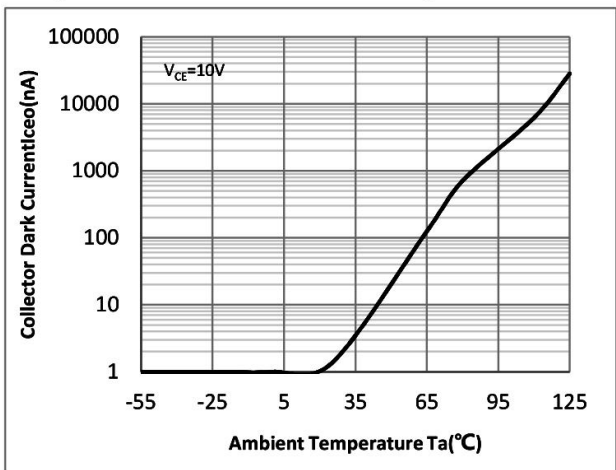
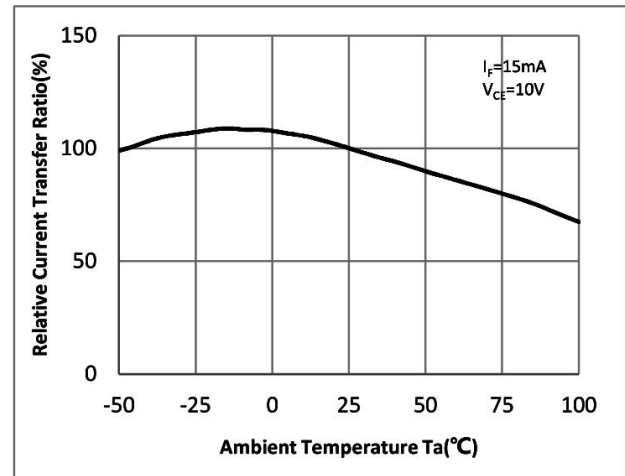


Fig.6 Relative Current Transfer Ratio vs. Ambient Temperature



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

Fig.7 Response Time vs. Load Resistance

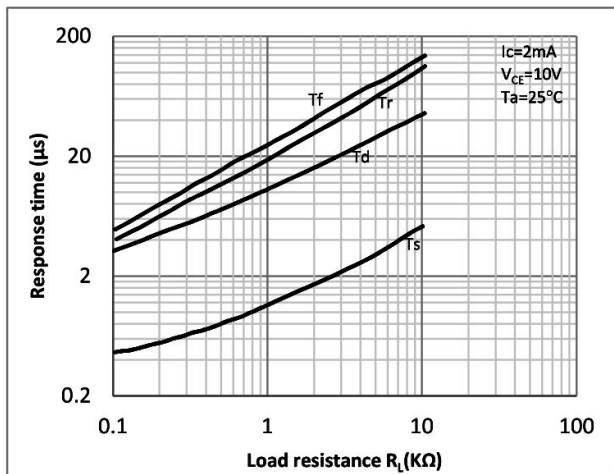
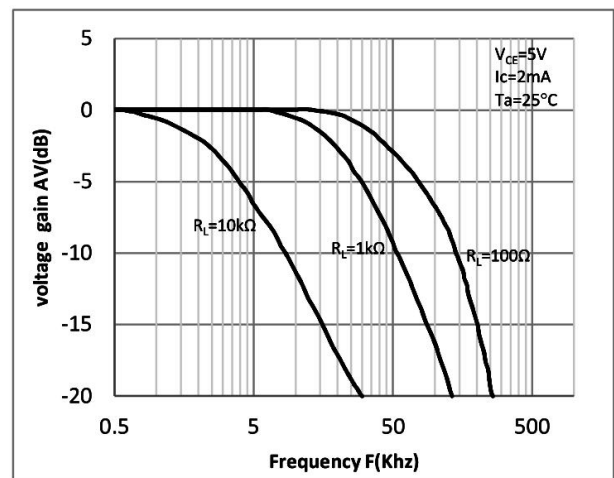
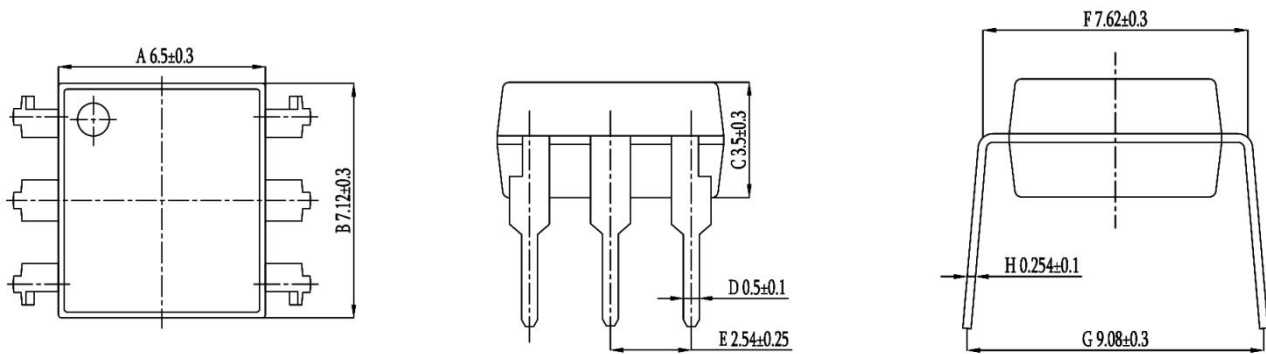


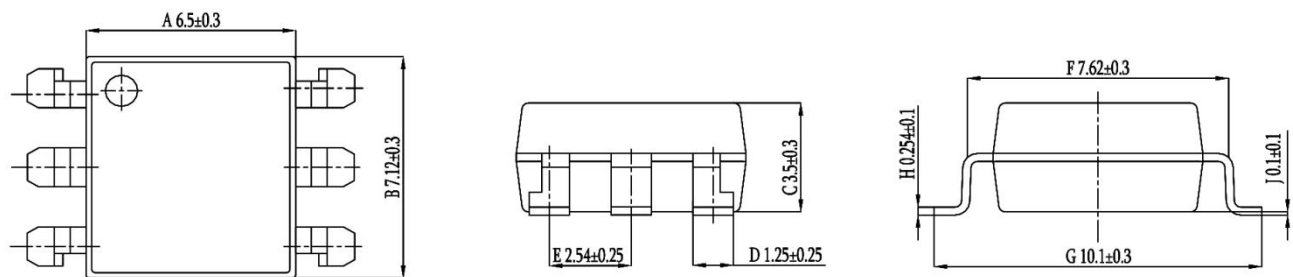
Fig.8 Frequency Response



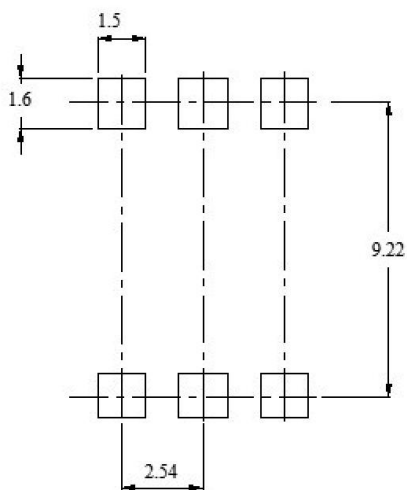
Package Outline Dimensions (unit: mm) DIP6



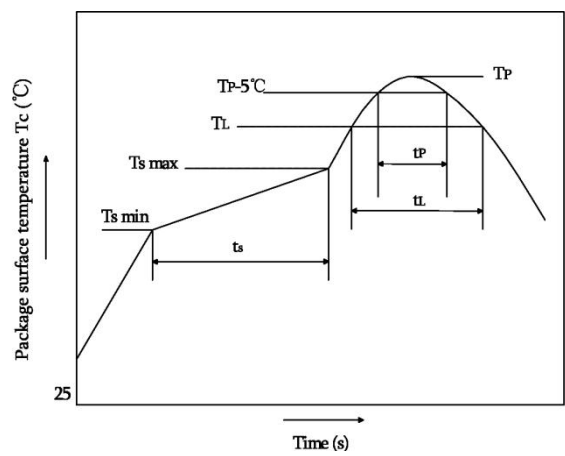
SMD6



SOLDERING FOOTPRINT (unit: mm)



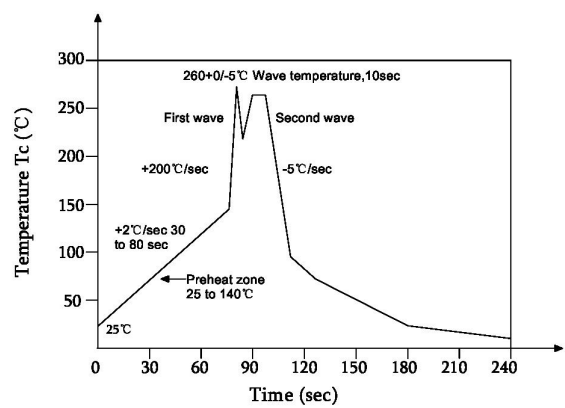
Reflow soldering



	Symbol	Min	Max	Unit
Preheat temprayure	Ts	150	200	°C
Preheat time	ts	60	120	s
Ramp-up ratea(TL to TP)	-	-	3	°C/s
Liquidus temperature	TL	217		°C
Time above TL	tL	60	150	s
Peak temperature	Tp	-	260	°C
Time during which Tc is between (TP-5) and TP	tp	-	30	s
Ramp-down rate(TP to TL)	-	-	6	°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	~200°C/s
Heating rate during preheat	1°C/s to 2°C/s typical; 4°C/s maximum
Final preheat temperature Ts	~130°C
Preheat time (25°C to Ts)	>60s
Peak temperature Tp	260°C
Time within peak temperature tp	10s
Ramp-down rate	5°C/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 °C+5°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 redls/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.

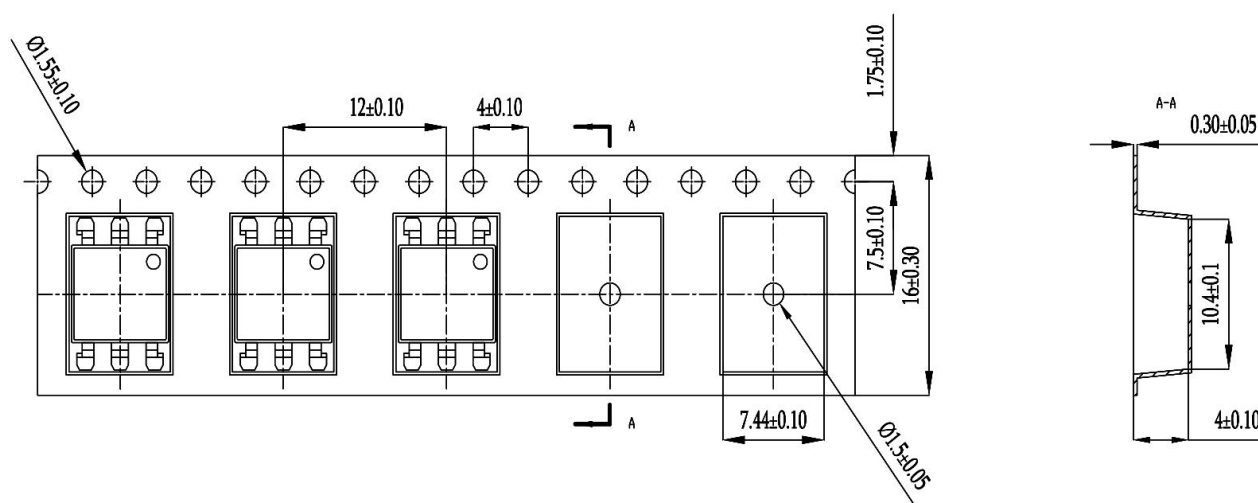
Schematic: (unit:mm)

■ SMD6 (Reel)

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

Qty/ctn : 10000pcs.

Schematic: (unit:mm)



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