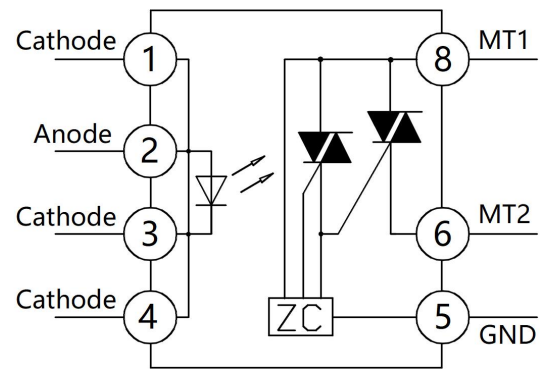
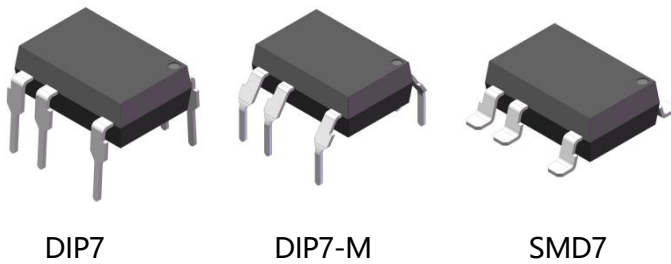


XLR0213,XLR1213,XLR2213,XLR3213

Product packaging logic diagram



Pin Configuration

Features

- Peak Breakdown Voltage: 600V
- Peak Current Load: 0.3A, 0.6A, 0.9A and 1.2A
- High isolation voltage between input and output (Viso = 5000Vrms)
- Operating Temperature: -55°C~100°C
- Environmentally friendly products, compliant with CQC, UL, and VDE requirements

Mechanical Data

- Case: DIP7、DIP7-M、SMD7
- Molding Compound: UL Flammability Classification Rating 94V-0
- Terminals: Matte tin-plated leads; solder ability-per MIL-STD-202, Method 208

Applications

- Industrial Automation and Control.
- PLC and frequency converter, servo drive system, industrial robot.
- Zero crossing products are used for AC voltage regulation.
- Household appliances and consumer electronics: Motor forward and reverse heating control, speed regulation, etc
- Used for dimming control in lighting systems.
- Power System and Energy Management: Used for rectification, transformer protection, and power grid monitoring, Applied to uninterruptible power supply (UPS) and power protection equipment.
- Medical and Special Scenarios: Used for isolation and circuit protection of devices such as heart rate monitors and X-ray machines.



XLR0213,XLR1213,XLR2213,XLR3213

Ordering Information

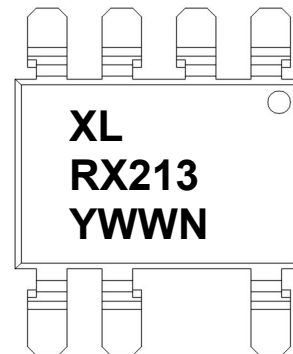
XL RX213 (X) (X) - (U) (N) (Y)
 ① ② ③ ④ ⑤ ⑥ ⑦

- ① Brand(XL)
- ② Product series(X:0,1,2,3)
- ③ Package type (DIP7: DIP7-M: M, SMD7: 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
XLRX213	DIP7	65pcs / Tube	XLRX213
XLRX213M	DIP7-M	65pcs / Tube	XLRX213
XLRX213S	SMD7	1000pcs / Tape & Reel	XLRX213

Marking Information

- " XL" denotes brand
- " X" denotes IFT digit: 0, 1, 2, 3
- " Y" denotes Year : A(2024), B(2025), C(2026)
- " WW" denotes Week' s number
- " N" denotes the day of Week



XLR0213, XLR1213, XLR2213, XLR3213

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

Parameter		Symbol	Value	Unit	
Input	Forward Current	I _F	50	mA	
	Reverse Voltage	V _R	5	V	
	Power Dissipation	P _D	75	mW	
Output	Power Dissipation	P _C	300	mW	
	Off-state Output Terminal Voltage	V _{DRM}	600	V	
	Peak repetitive surge current	XLR0213	I _{TSM}	3	A
		XLR1213		6	
		XLR2213		9	
		XLR3213		12	
	Turn-on current (root mean square value)	XLR0213	I _{T(RMS)}	0.3	A
		XLR1213		0.6	
XLR2213		0.9			
XLR3213		1.2			

Thermal Characteristics

Parameter	Symbol	Value	Unit
Total Power Dissipation	P _{TOT}	375	mW
Isolation Voltage *1	V _{ISO}	5000	V _{rms}
Operating Temperature	T _{OPR}	-40 ~ +85	°C
Storage Temperature Range	T _{STG}	-40 ~ +125	°C
Soldering Temperature *2	T _{SOL}	260	°C

Notes:

1. 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.
2. For 10 seconds

XLR0213,XLR1213,XLR2213,XLR3213

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

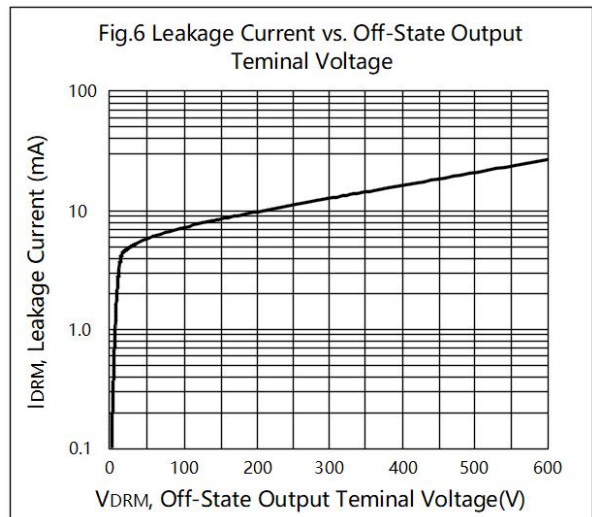
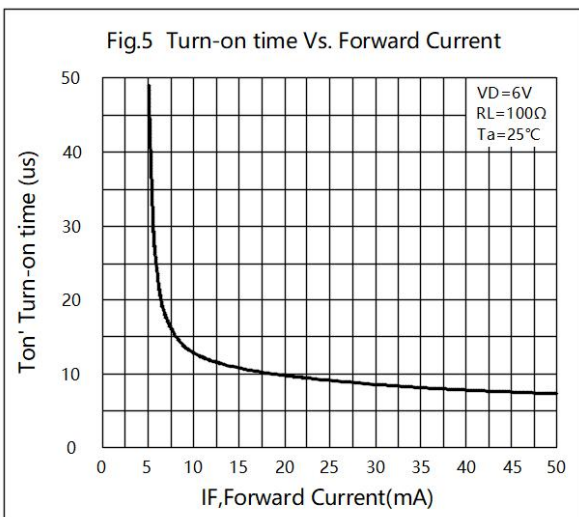
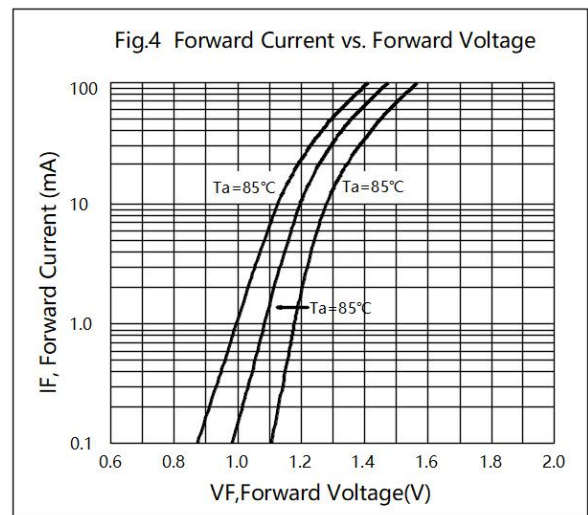
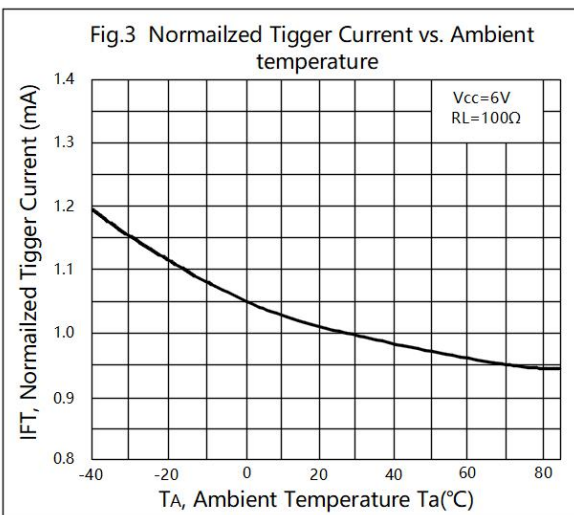
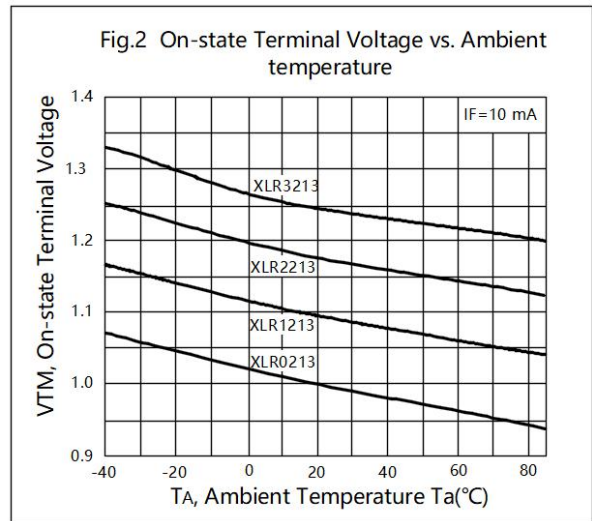
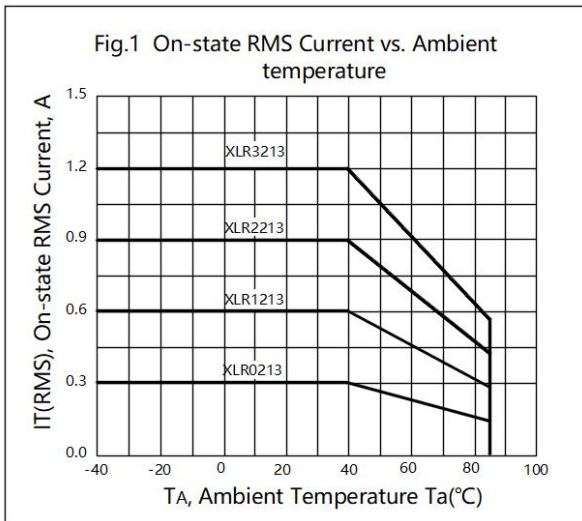
Parameter		Symbol	Test Condition	Min.	Typ.	Max.	Unit
Input	Forward Voltage	VF	IF=10mA	-	-	1.4	V
	Reverse Leakage current	IR	VR=5V	-	-	10	μA
	Input Capacitance	CIN	f=1kHz	-	45	-	PF
Output	Peak Blocking Current	IDRM	VDRM =600 V IF=0mA	-	-	100	μA
	Peak on-state voltage	V _{TM}	ITM = 100mA peak, IF = Rated IFT	-	-	2.5	V
	Critical Rate of Rise off-state voltage	dv /dt	VPEAK = Rated VDRM	200	-	-	V/μs
Transfer Characteristics	LED trigger current	IFT	Main terminal voltage = 3V	-	-	10	mA
	Holding Current	IH	Terminal Voltage from "ON" to "OFF" "ON" state IF=0mA	-	-	25	mA
	Turn On Time	Ton	IF= 20mA, VD= 6V, RL=100Ω	-	10	100	us
	Isolation Resistance	RIO	VIO=500VDC	1X10 ¹¹	-	-	Ω
	Isolation Capacitance	CIO	f=1MHz	-	0.25	-	PF

Notes:

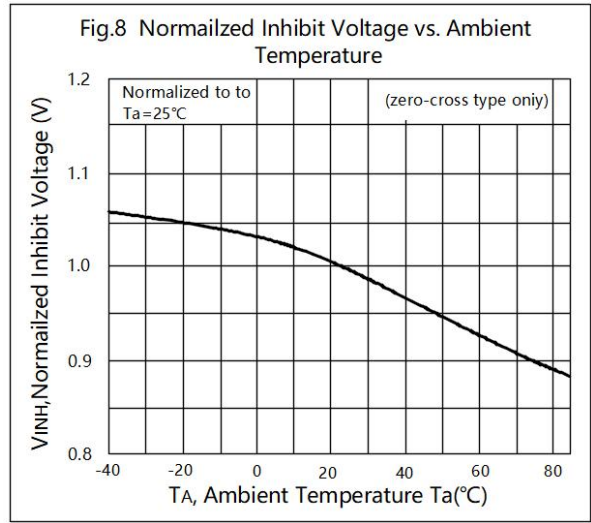
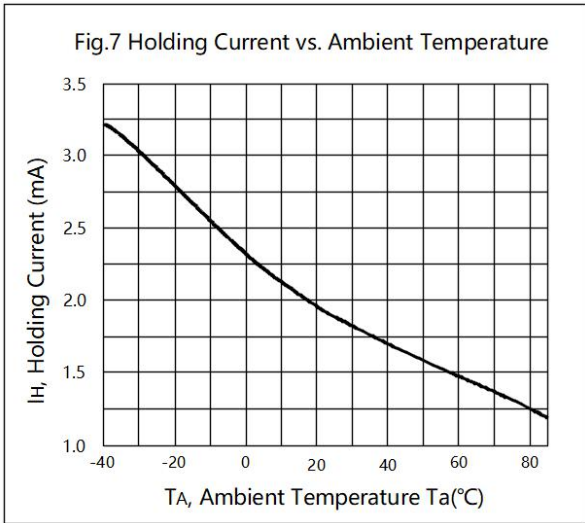
1. The additional test voltage should be within dv/dt rated value.
2. This is static dv/dt, dv/dt is converted with changes of loading for the driven thyristor.
3. It is guaranteed that all devices trigger when IF value is less than or equal to the maximum value of IFT.

XLR0213, XLR1213, XLR2213, XLR3213

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



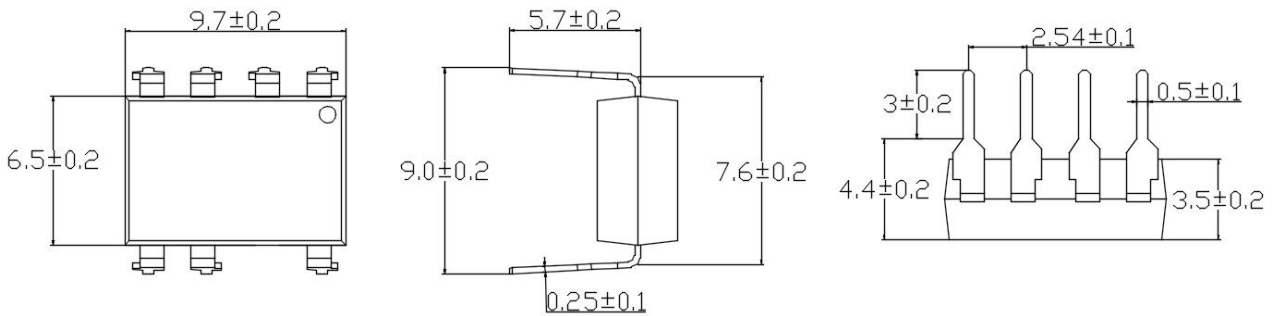
Ratings and Characteristics Curves (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)



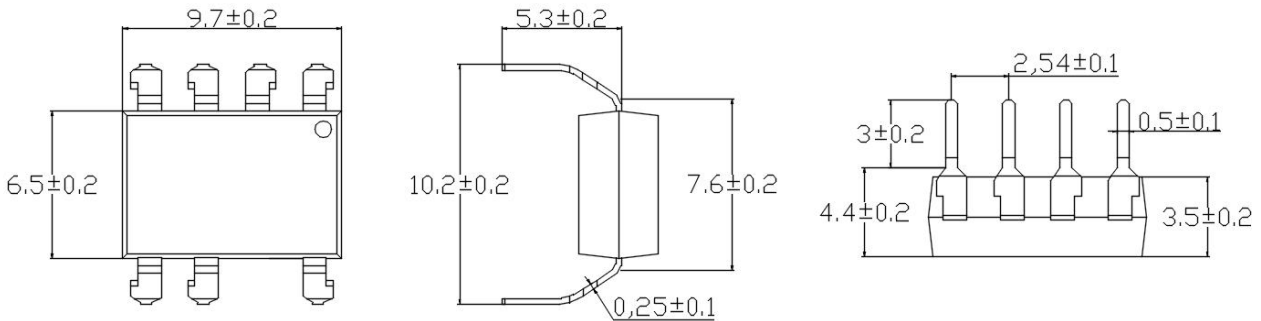
XLR0213, XLR1213, XLR2213, XLR3213

Package Outline Dimensions (unit: mm)

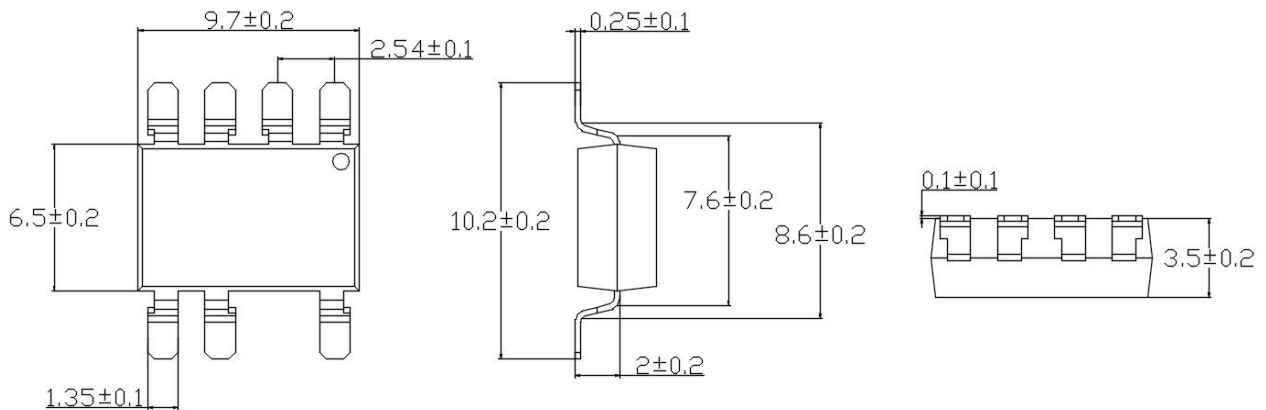
DIP7



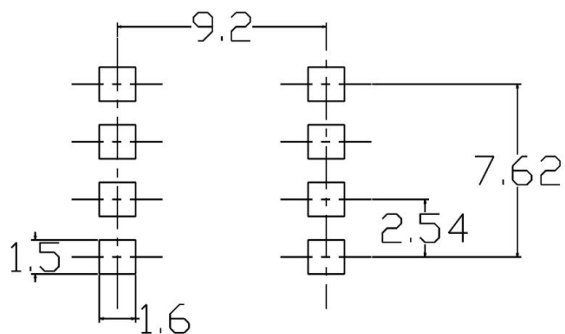
DIP7-M



SMD7

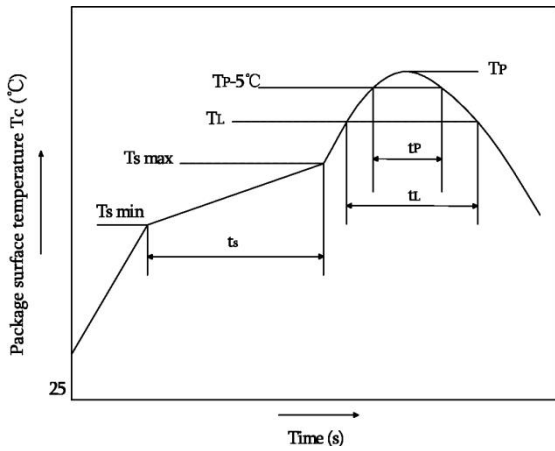


SOLDERING FOOTPRINT (unit: mm)



XLR0213,XLR1213,XLR2213,XLR3213

Reflow soldering

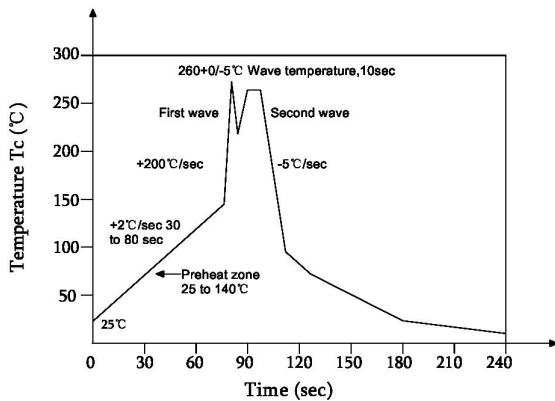


	Symbol	Min	Max	Unit
Preheat temperature	Ts	150	200	°C
Preheat time	ts	60	120	s
Ramp-up rate(T _L to T _P)	-	-	3	°C/s
Liquidus temperature	T _L	217		°C
Time above T _L	t _L	60	150	s
Peak temperature	T _P	-	260	°C
Time during which T _c is between (T _P -5) and T _P	t _p	-	30	s
Ramp-down rate(T _P to T _L)	-	-	6	°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

- Hand soldering iron is only used for product rework or sample testing.
- Hand soldering iron requirements: Temperature: 360 °C+5°C within 3s.

XLR0213,XLR1213,XLR2213,XLR3213

Packing

Package Type	Packing Form	Quantity per Tube & Reel	Quantity per Box	Quantity per Carton	Antistatic Bag Specification	Box Specification	Carton Specification	Note
DIP7	Tube(500mm)	65pcs/tube	50 tubes /box	10 boxes /ctn	190*670mm	520*105*50mm	545*372*235mm	Straight insert type material tube
DIP7-M	Tube(500mm)	65pcs/tube	50 tubes /box	10 boxes /ctn	190*670mm	520*105*50mm	545*372*235mm	Seagull foot (M foot) tube
SMD7	Reel(φ330mm)	1000pcs/reel	2 reels /box	5 boxes /ctn	380*420mm	350*340*60mm	365*330*370mm	Guard band 200mm /min.

■ Summary table

■ DIP7/DIP7-M (Tube)

Qty/tube: 65pcs. Qty/box: 3250pcs.

Qty/ctn: 32500pcs.

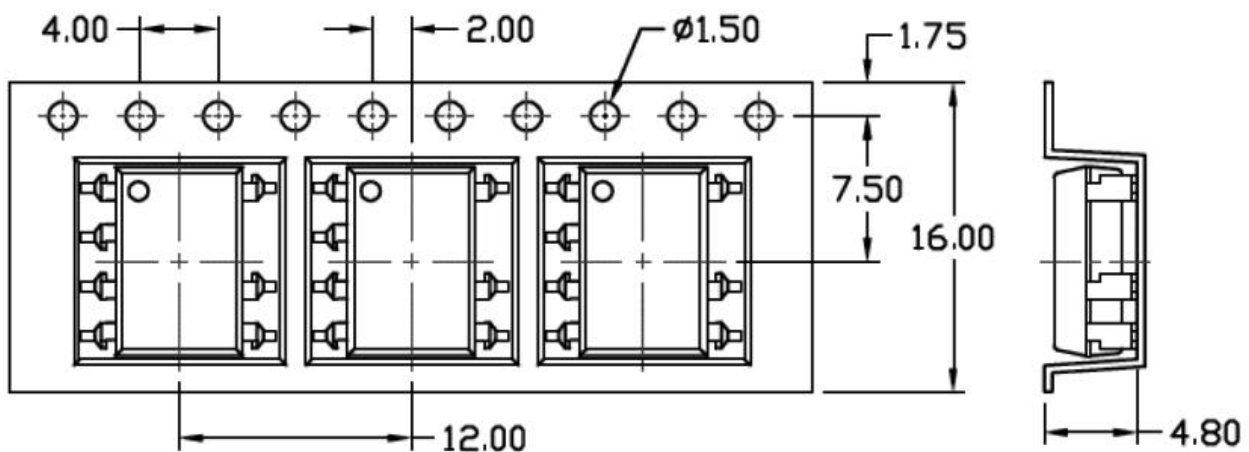
Schematic: (unit:mm)

■ SMD7 (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.