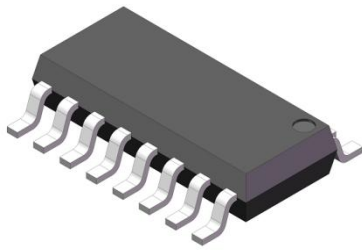


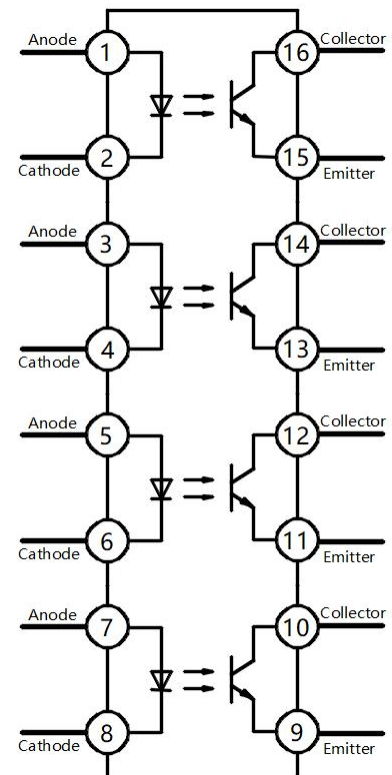
Product packaging logic diagram



SSOP16

Features

- Current transfer ratio
(CTR: 50~600% at $I_F = 5\text{mA}$, $V_{CE} = 5\text{V}$)
- High isolation voltage between input and output
($V_{iso} = 3750\text{Vrms}$)
- Collector - emitter breakdown voltage $BV_{CEO} \geq 80\text{V}$
- Operating Temperature: $-55^\circ\text{C} \sim 110^\circ\text{C}$
- Environmentally friendly products, compliant with CQC, UL, and VDE requirements



Pin Configuration

Mechanical Data

- Case: SSOP16
- 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);



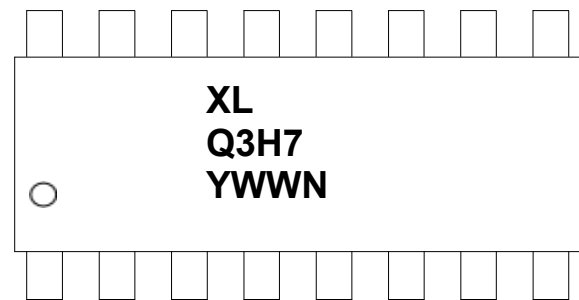
Ordering Information

XL Q3H7 (M) (G) - (U) (N) (Y)
 ① ② ③ ④ ⑤ ⑥ ⑦

- ① Brand (XL)
- ② Product series (Q3H7)
- ③ Package type (None: SSOP16)
- 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)

Marking Information

- " XL" denotes brand.
- " Q3H7" denotes Product series.
- " Y" denotes Year : A(2024), B(2025), C(2026)
- " WW" denotes Week' s number .
- " N" denotes the day of Week.



Part Number	Package	Shipping Quantity	Marking Code
XLQ3H7	SSOP16	2000pcs / Tape & Reel	XLQ3H7

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

Parameter		Symbol	Value	Unit
Input	Forward Current	I _F	50	mA
	Peak Forward Current *1	I _{FM}	1	A
	Reverse Voltage	V _R	6	V
	Power Dissipation	P _D	70	mW
Output	Collector Power Dissipation	P _C	150	mW
	Collector Current	I _C	50	mA
	Collector-Emitter Voltage	V _{CEO}	80	V
	Emitter-Collector Voltage	V _{ECO}	7	V

Thermal Characteristics

Parameter	Symbol	Value	Unit
Total Power Dissipation	PTOT	200	mW
Isolation Voltage *1	VISO	3750	Vrms
Operating Temperature	TOPR	-55 ~ +110	°C
Storage Temperature Range	TSTG	-55 ~ +125	°C
Soldering Temperature *2	TSOL	260	°C

Notes:

1. Pulse width $\leq 1\mu\text{s}$, Duty ratio: 0.001
2. 40 to 60% RH, AC for 1 minute
3. For 10 seconds

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

Parameter		Symbol	Test Condition	Min.	Typ.	Max.	Unit
Input	Forward Voltage	VF	IF = 20mA	-	1.2	1.4	V
	Reverse Current	IR	VR = 4V	-	-	10	μA
	Input Capacitance	Cin	VR = 0V, f = 1kHz	-	30	250	pF
Output	Collector-Emitter Dark Current	ICEO	VCE = 20V, IF = 0	-	-	100	nA
	Collector-Emitter Breakdown Voltage	BVCEO	IC = 0.1mA, IF = 0	80	-	-	V
	Emitter-Collector Breakdown Voltage	BVECO	IE = 10 μA , IF = 0	7	-	-	V
Transfer Characteristics	Current Transfer Ratio	CTR	IF = 5 mA, VCE = 5V	50	-	600	%
	Collector-Emitter Saturation Voltage	VCE(sat)	IF = 20mA, IC = 1mA	-	0.1	0.2	V
	Isolation Resistance	RISO	DC500V, 40~60%R.H	5×10^{10}	1×10^{11}	-	Ω
	Isolation current	Risc	DC6000V, 40~60%R.H	-	---	2	μA
	Floating Capacitance	CIO	VIO = 0, f = 1MHz	-	0.3	1.0	pF
	Turn On Time	Ton	VCE=2V, RL= 100 Ω IC=2mA	-	4	18	μs
	Turn Off Time	Toff		-	3	18	

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

Fig.1 Relative Current Transfer Ratio vs. Forward Current

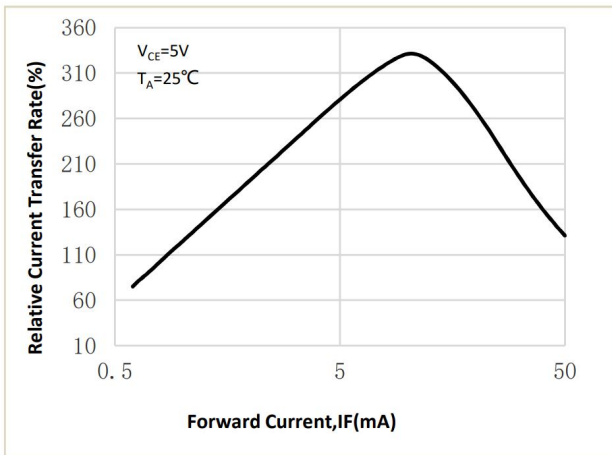


Fig.2 Forward Current vs. Forward Voltage

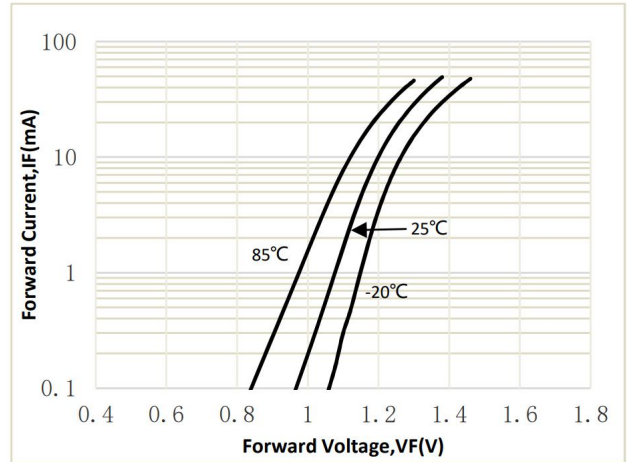


Fig.3 Collector Current vs. Collector-emitter Voltage

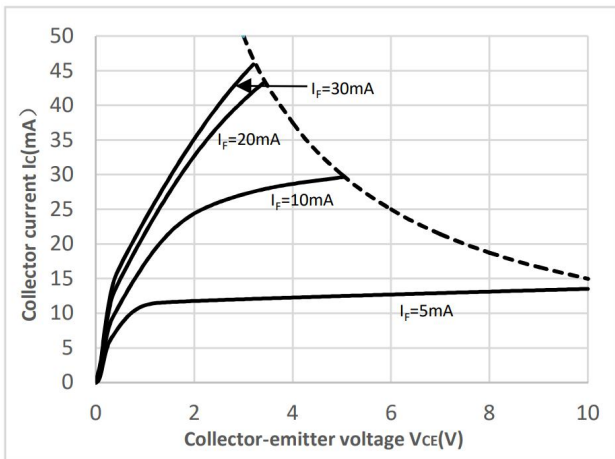


Fig.4 Relative Current Transfer Ratio vs. Ambient Temperature

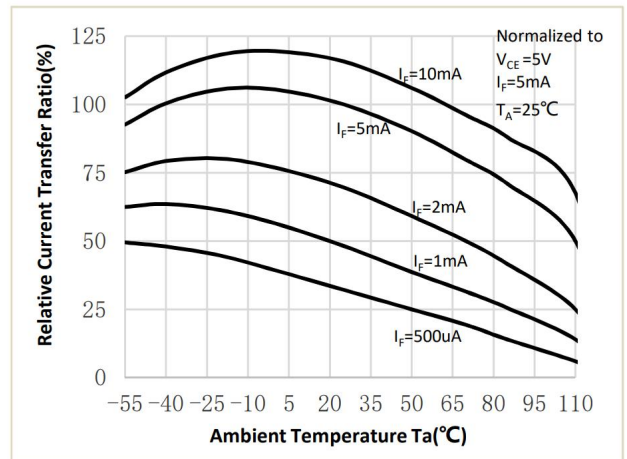


Fig.5 Collector-emitter Saturation Voltage vs. Ambient Temperature

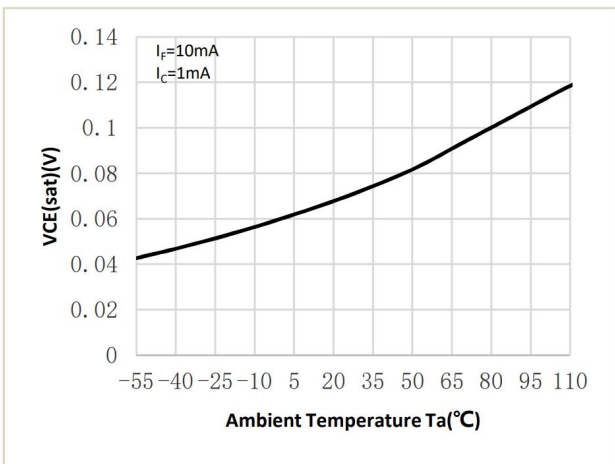
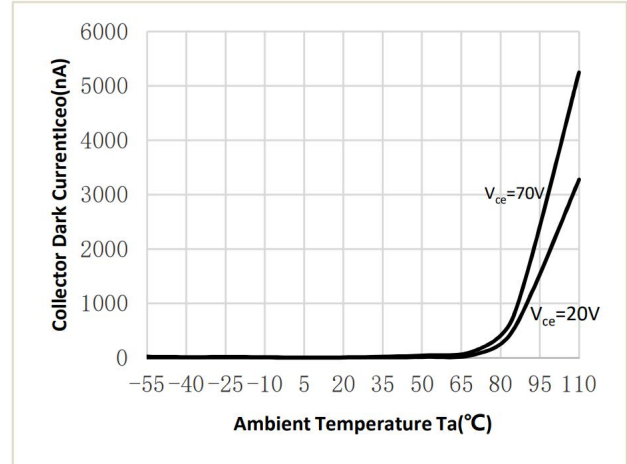


Fig.6 Collector Dark Current vs. Ambient Temperature



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

Fig.7 Response Time vs. Load Resistance

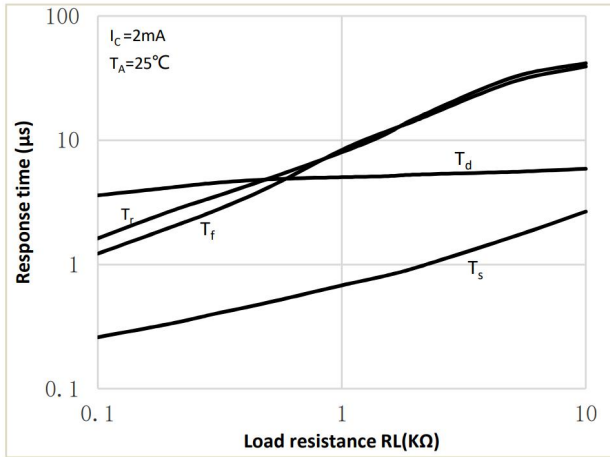


Fig.8 Frequency Response

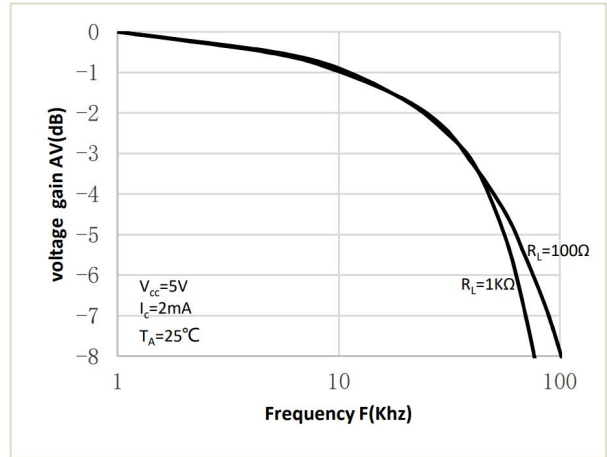


Fig.9 Collector-emitter Saturation Voltage vs. Forward Current

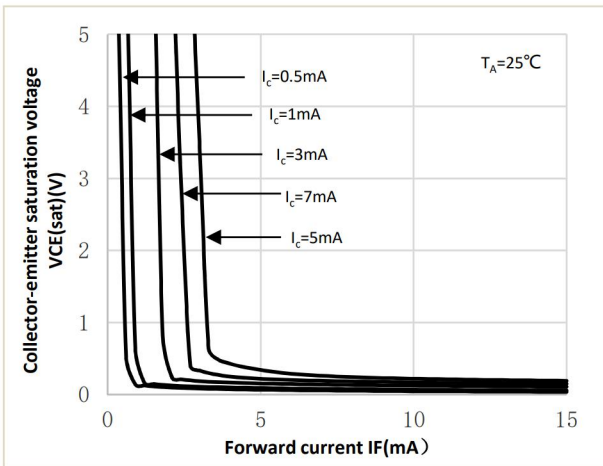
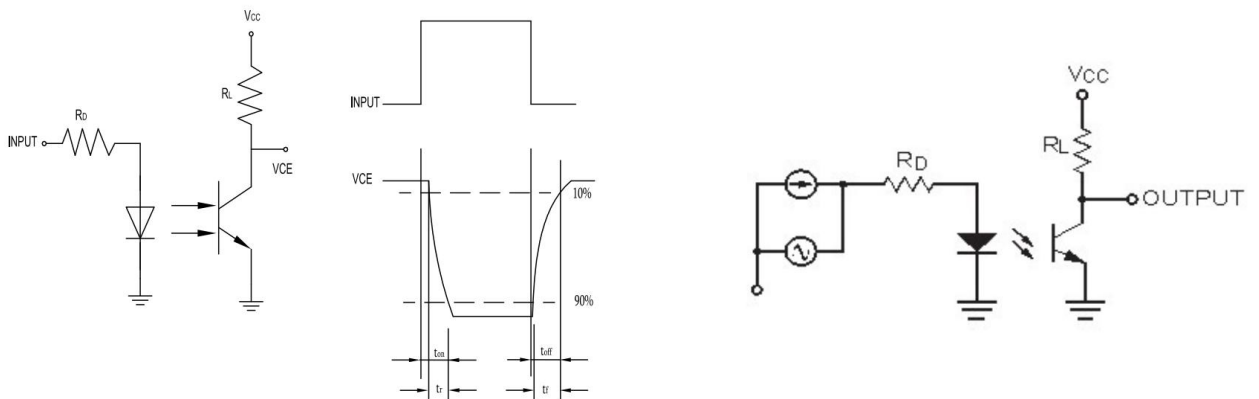
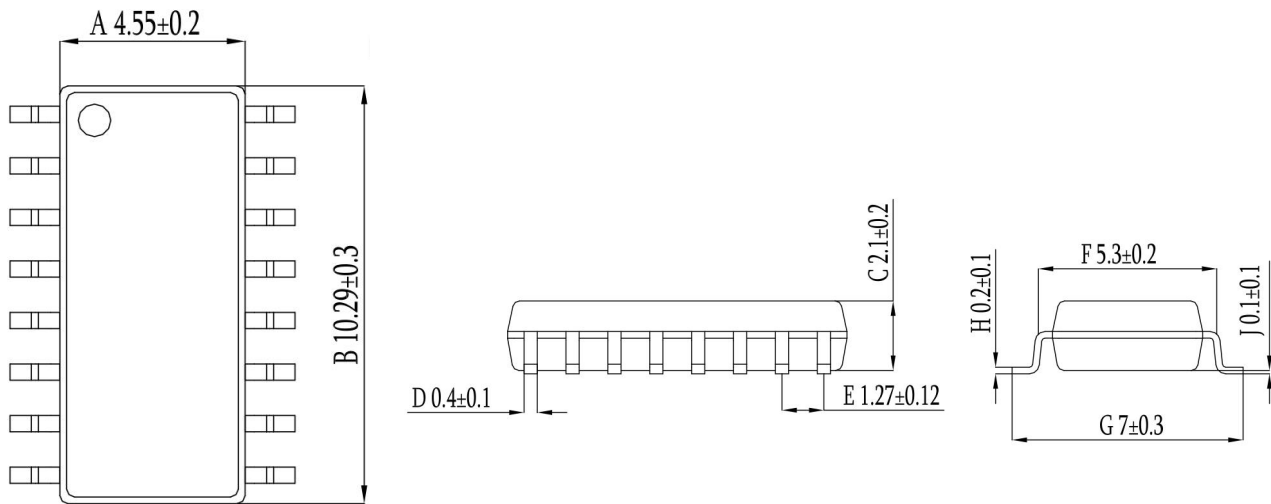


Fig.10 Switching Time Test Circuit & Waveforms

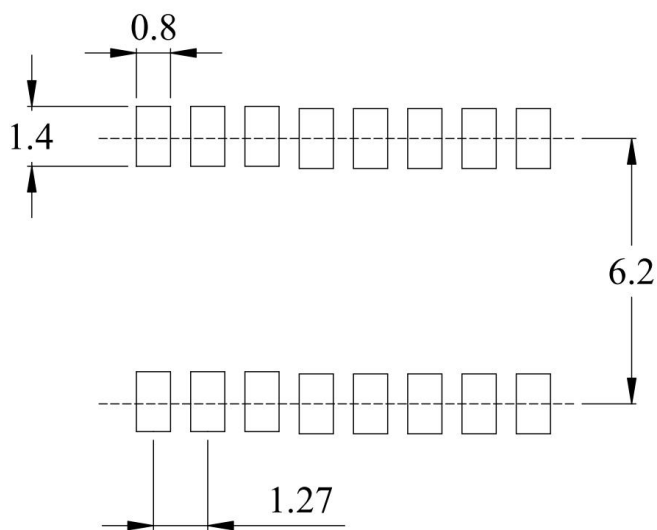


Package Outline Dimensions (unit: mm)

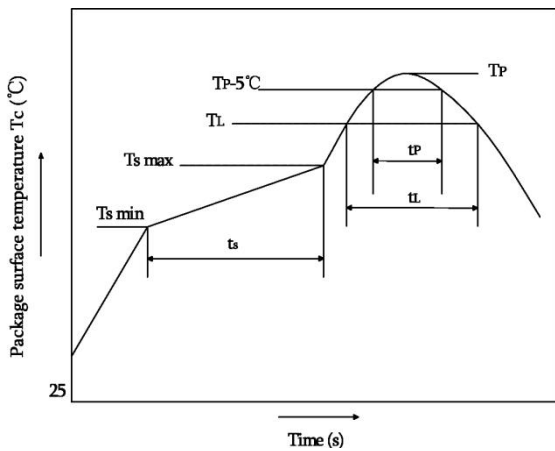
SSOP16



SOLDERING FOOTPRINT (unit: mm)



Reflow soldering

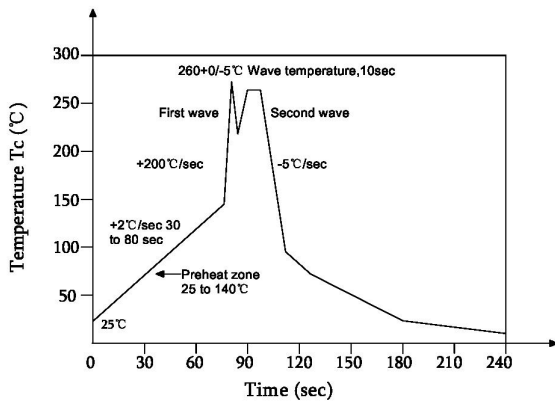


	Symbol	Min	Max	Unit
Preheat temperature	Ts	150	200	°C
Preheat time	ts	60	120	s
Ramp-up rate(T _L to T _P)			3	°C/s
Liquidus temperature	T _L	217		°C
Time above T _L	t _L	60	150	s
Peak temperature	T _P		260	°C
Time during which T _c is between (T _P -5) and T _P	t _p		30	s
Ramp-down rate(T _P to T _L)			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 T _p	260°C
Time within peak temperature t _p	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
SSOP16	Reel(Ø330mm)	2000pcs/reel	2reels /box	5 boxes /ctn	380*420mm	350*340*60mm	365*330*370mm	Leave 25 Spaces at the beginning and 50 Spaces at the end

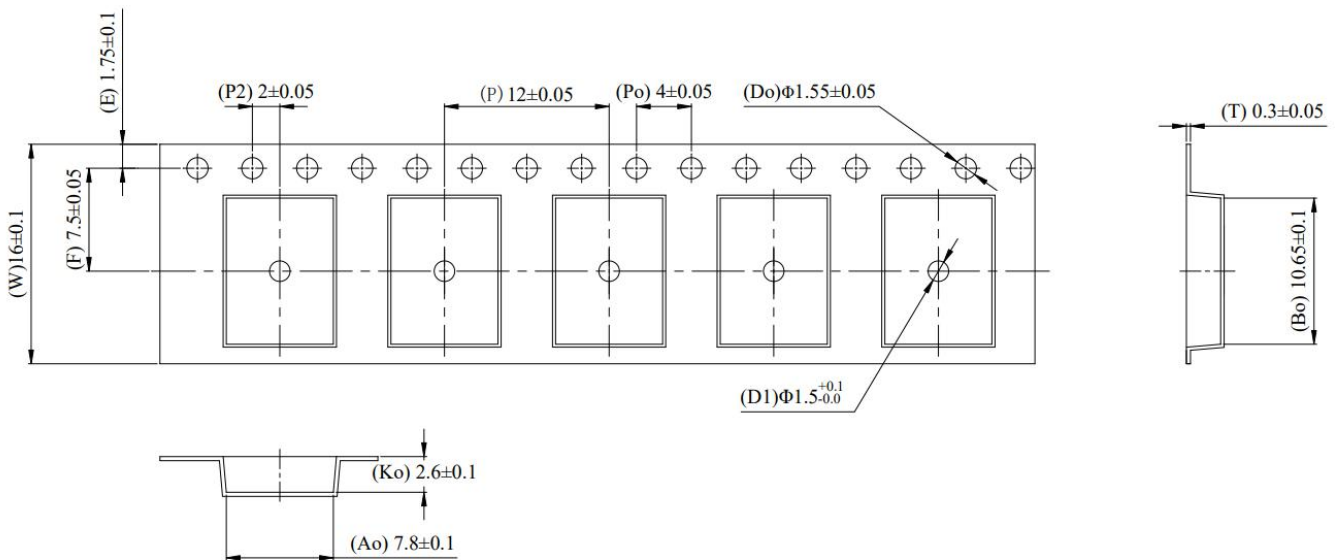
■ Summary table

■ SSOP16(reel)

Qty/tube: 2000pcs. Qty/box: 4000pcs.

Qty/ctn : 20000pcs.

Schematic: (unit:mm)



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