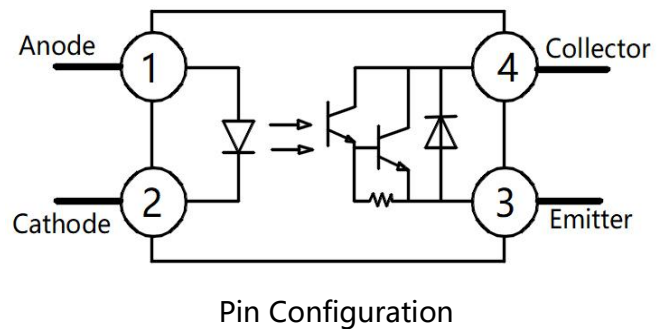
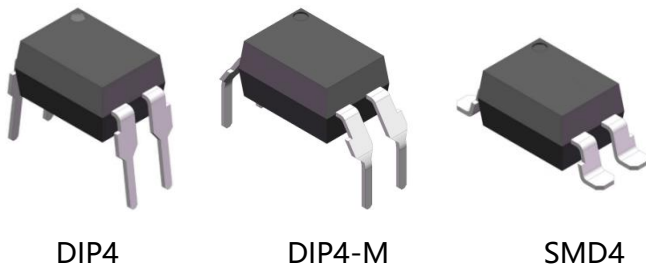


Product packaging logic diagram**Features**

- Current transfer ratio
(CTR: $\geq 1000\%$ at $I_F = 1\text{mA}$, $V_{CE} = 2\text{V}$)
- High isolation voltage between input and output ($V_{iso} = 5000\text{V}_{rms}$)
- Operating Temperature: $-55^\circ\text{C} \sim 110^\circ\text{C}$
- Environmentally friendly products, compliant with CQC, UL, and VDE requirements

Mechanical Data

- Case: DIP4、DIP4-M、SMD4
- Molding Compound: UL Flammability Classification Rating 94V-0
- Terminals: Matte tin-plated leads; solder ability-per MIL-STD-202, Method 208

Applications

- Drive industrial controllers and actuators, Ensure the stability of signal transmission.
- At switch-mode power supplies, regulated power supplies, and battery management systems, Achieve signal isolation and amplification, ensuring the stability of power output.
- Can directly drive high-power motors and provide precise control signals. Achieve precise control over speed and direction
- Home appliances For controlling high-power loads such as motors and relays, Provide reliable signal transmission and electrical isolation to ensure the safe operation.
- Ensuring signal clarity and stability in signal transmission circuits.



Ordering Information

<u>XL</u>	<u>852</u>	<u>(M)</u>	<u>(G)</u>	<u>(X)</u>	-	<u>(U)</u>	<u>(N)</u>	<u>(Y)</u>
①	②	③	④	⑤		⑥	⑦	⑧

- ① Brand (XL)
- ② Product series (852)
- ③ Package type(None: DIP4、DIP4-M、SMD4)
- ④ Halogen option(None : Halogen free)
- ⑤ CTR Bank(None:≥1000%)
- ⑥ Lead frame (None: Copper)
- ⑦ Customer option 1 (0-9 or A- Z or none)
- ⑧ Customer option 2 (0-9 or A- Z or none)

Part Number	Package	Shipping Quantity	Marking Code
XL852	DIP4	100pcs / Tube	XL852
XL852M	DIP4-M	100pcs / Tube	XL852
XL852S	SMD4	2000pcs / Tape & Reel	XL852

Notes 1: X denotes CTR Rank : A, B or None.

Marking Information

- " XL" denotes brand.
- " 852" 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
	Peak Forward Current *1	I _{FM}	1	A
	Reverse Voltage	V _R	6	V
	Power Dissipation	P _D	100	mW
Output	Collector Power Dissipation	P _C	150	mW
	Collector Current	I _C	150	mA
	Collector-Emitter Voltage	V _{CEO}	350	V
	Emitter-Collector Voltage	V _{ECO}	0.1	V

Thermal Characteristics

Parameter	Symbol	Value	Unit
Total Power Dissipation	PTOT	250	mW
Isolation Voltage *2	VISO	5000	V _{rms}
Operating Temperature	TOPR	-55 ~ +110	°C
Storage Temperature Range	TSTG	-55 ~ +125	°C
Soldering Temperature *3	TSOL	260	°C

Notes:

1. Pulse width ≤ 1μs, Duty ratio: 0.001
2. 40 to 60% RH, AC for 1 minute
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	1.4	V
	Reverse Current	I _R	V _R = 4V	-	-	10	μA
	Input Capacitance	C _{in}	V _R = 0V, f = 1kHz	-	50	-	pF
Output	Collector-Emitter Dark Current	I _{CEO}	V _{CE} = 200V	-	-	100	nA
	Collector-Emitter Breakdown Voltage	BV _{CEO}	I _C = 0.1mA, I _F = 0	350	-	-	V
	Emitter-Collector Breakdown Voltage	BV _{ECO}	I _E = 10μA, I _F = 0	0.1	-	-	V
Transfer Characteristics	Current Transfer Ratio	CTR	I _F = 1 mA, V _{CE} = 2V	1000	-	-	%
	Collector-Emitter Saturation Voltage	V _{CE(sat)}	I _F = 20mA, I _C = 100mA	-	1.2	1.5	V
	Isolation Resistance	R _{ISO}	V _{IO} = 500Vdc 40~60% R.H.	5×10 ¹⁰	1×10 ¹¹	-	Ω
	Floating Capacitance	C _{IO}	V _{IO} = 0, f = 1MHz	-	0.6	-	pF
	Cut-off frequency	f _c	V _{CE} = 2V, I _C = 2mA RL=100Ω, -3dB	-	7	-	kHz
	Turn On Time	T _{on}	V _{CE} =2V, RL= 100Ω I _C =20mA	-	80	250	μs
	Turn Off Time	T _{off}		-	10	100	

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

Fig.1 Collector-Emitter Saturation Voltage vs. Ambient Temperature

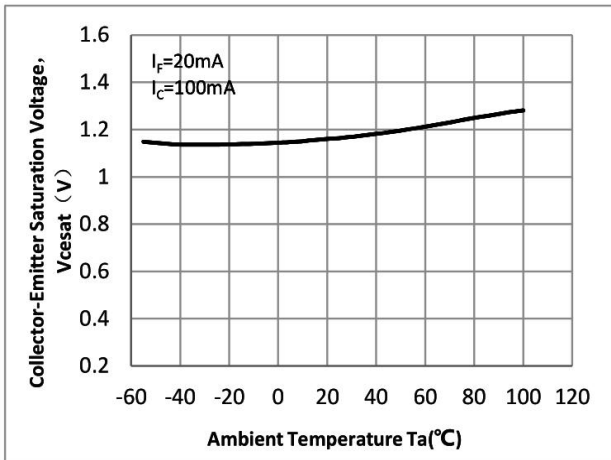


Fig.2 Forward Current vs. Forward Voltage

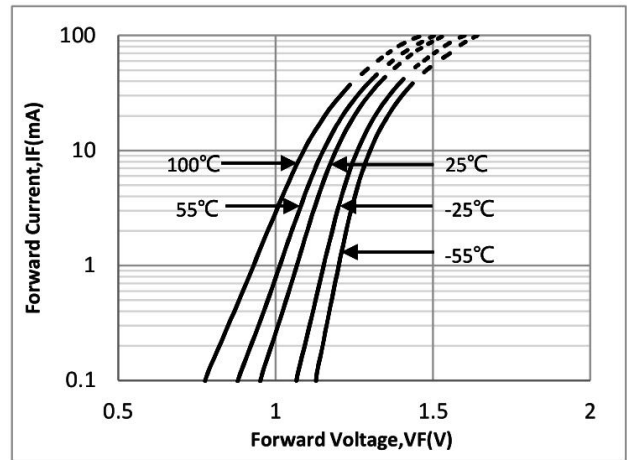


Fig.3 Current Transfer Ratio vs. Forward Current

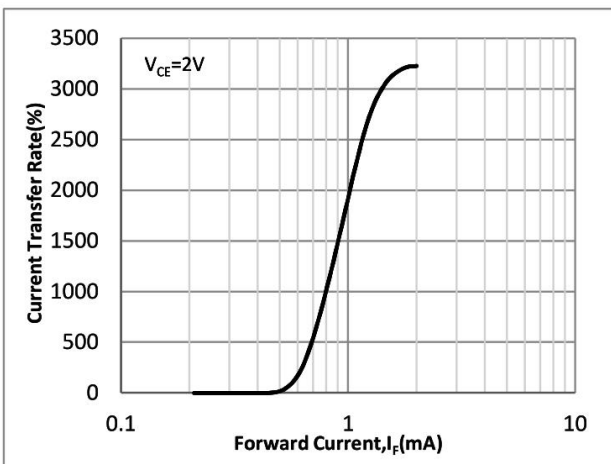


Fig.4 Relative Current Transfer Ratio vs. Ambient Temperature

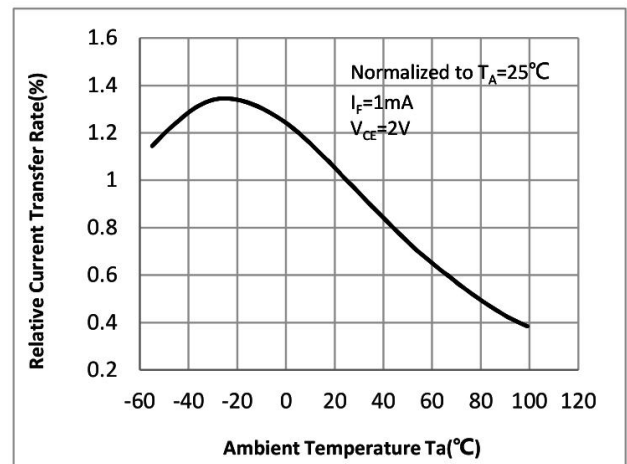


Fig.5 Collector-Emitter Dark Current vs. Ambient Temperature

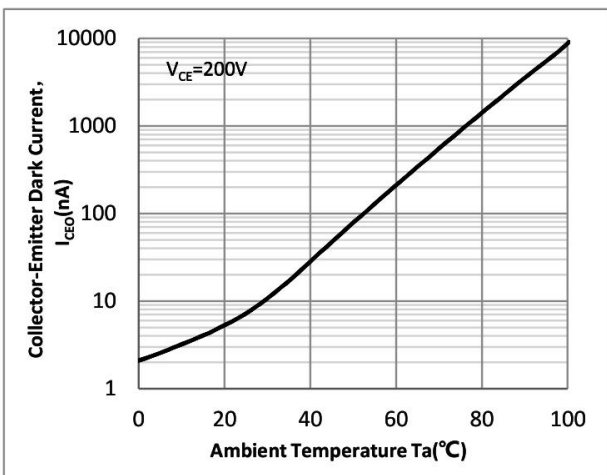
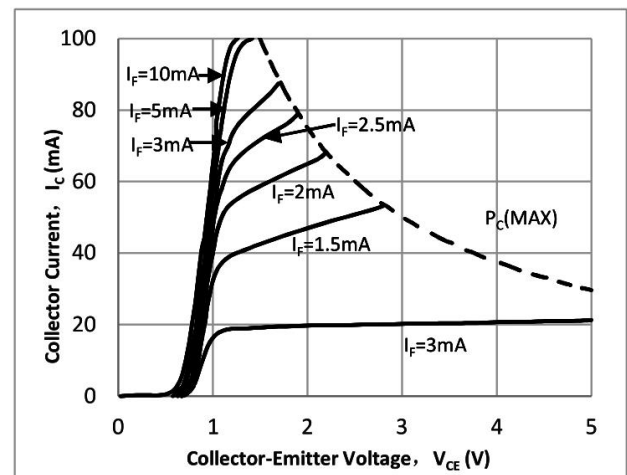


Fig.6 Collector Current vs. Collector-Emitter Voltage



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

Fig.7 Response time vs. Load resistor

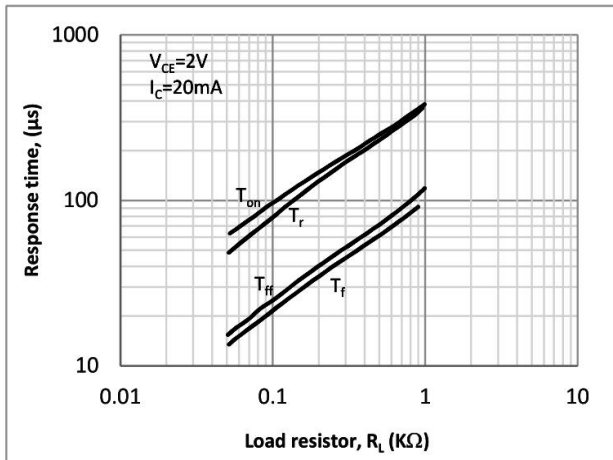


Fig.8 Forward Current vs. Collector-Emitter Saturation Voltage,

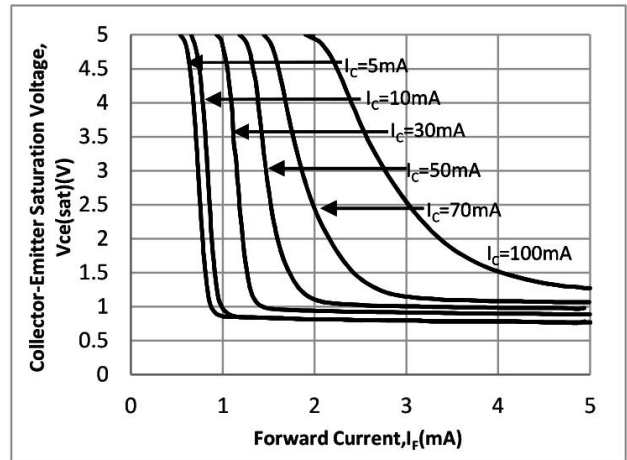


Fig.9 Frequency response

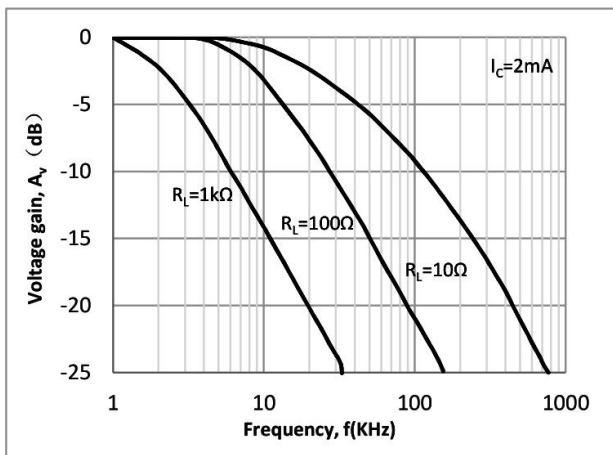
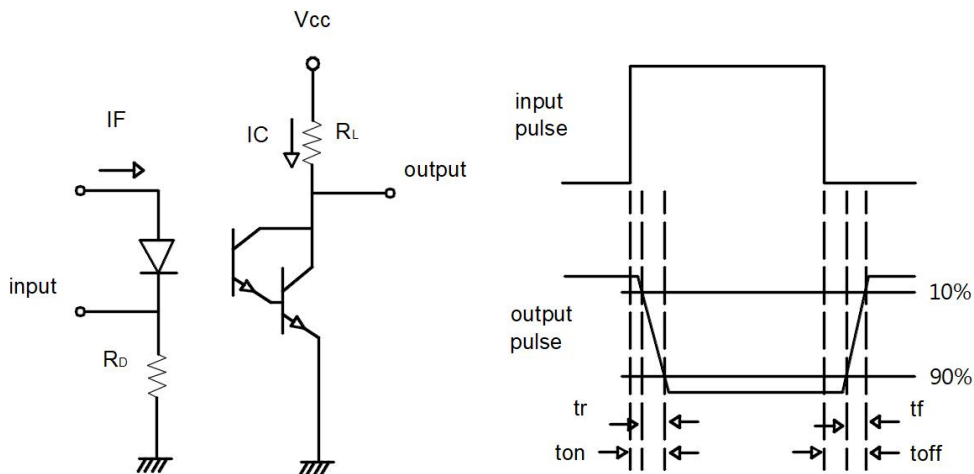
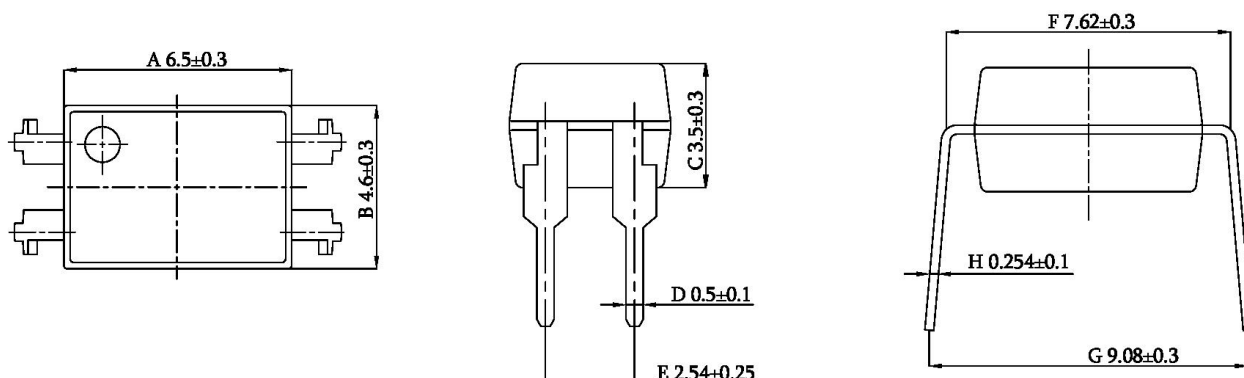


Fig.10 Switching Time Test Circuit & Wave forms

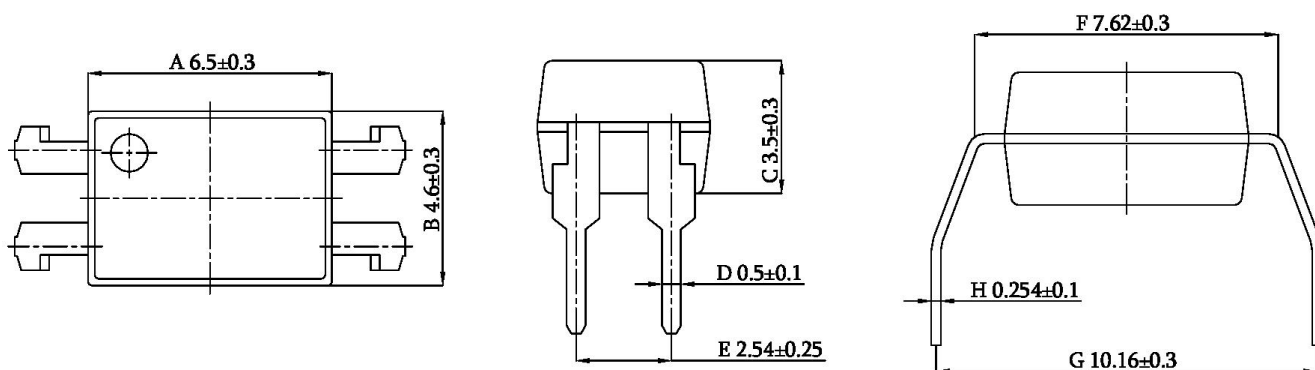


Package Outline Dimensions (unit: mm)

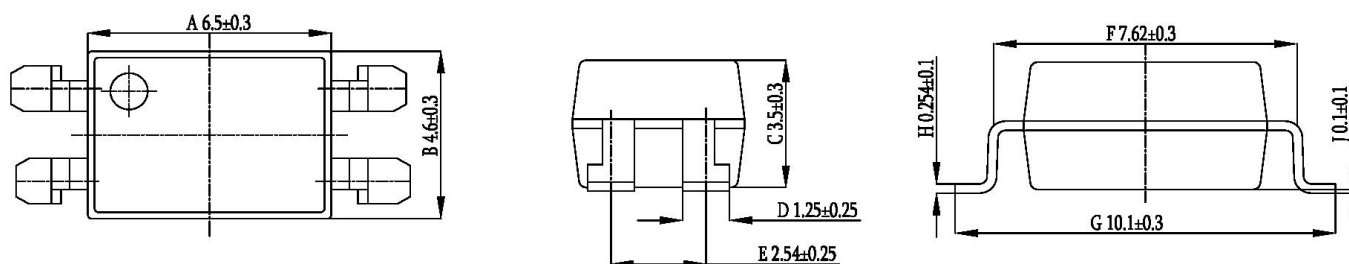
DIP4



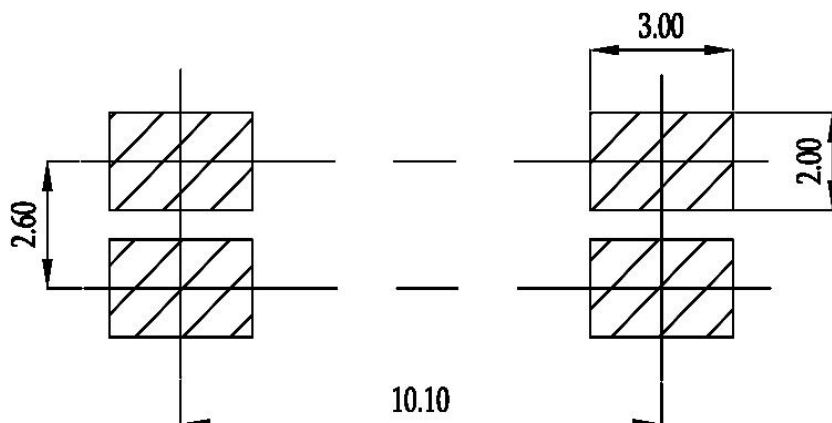
DIP4-M



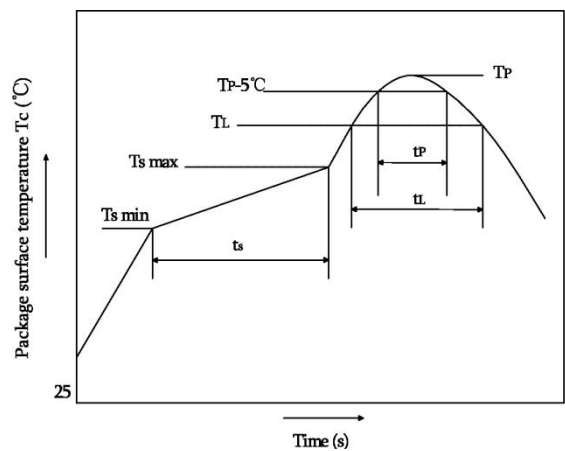
SMD4



SOLDERING FOOTPRINT (unit: mm)



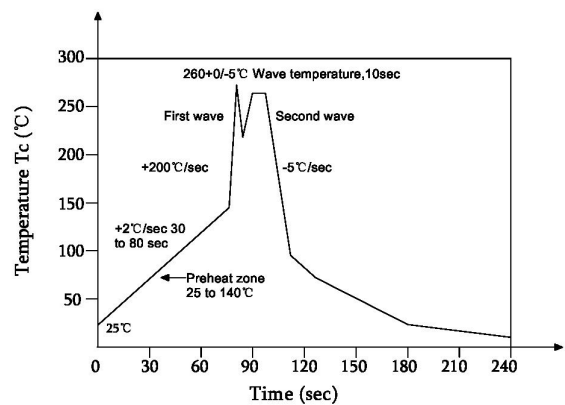
Reflow soldering



	Symbol	Min	Max	Unit
Preheat temperayure	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
DIP4	Tube(500mm)	100pcs/tube	25 tubes /box	12 boxes /ctn	190*670mm	520*105*50mm	545*372*235mm	Straight insert type material tube
DIP4-M	Tube(500mm)	100pcs/tube	25 tubes /box	12 boxes /ctn	190*670mm	520*105*50mm	545*372*235mm	Seagull foot (M foot) tube
SMD4	Reel(φ330mm)	2000pcs/reel	2 reels /box	5 boxes /ctn	380*420mm	350*340*60mm	365*330*370mm	Guard band 200mm /min.

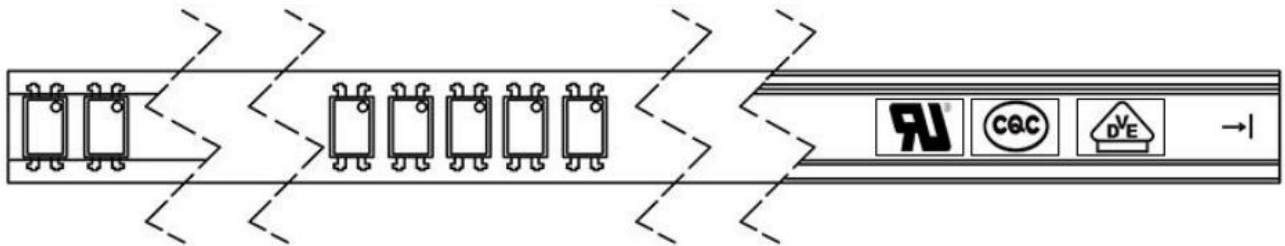
■ Summary table

■ DIP4/DIP4-M (Tube)

Qty/tube: 100pcs. Qty/box: 2500pcs.

Qty/ctn : 30000pcs.

Schematic: (unit:mm)

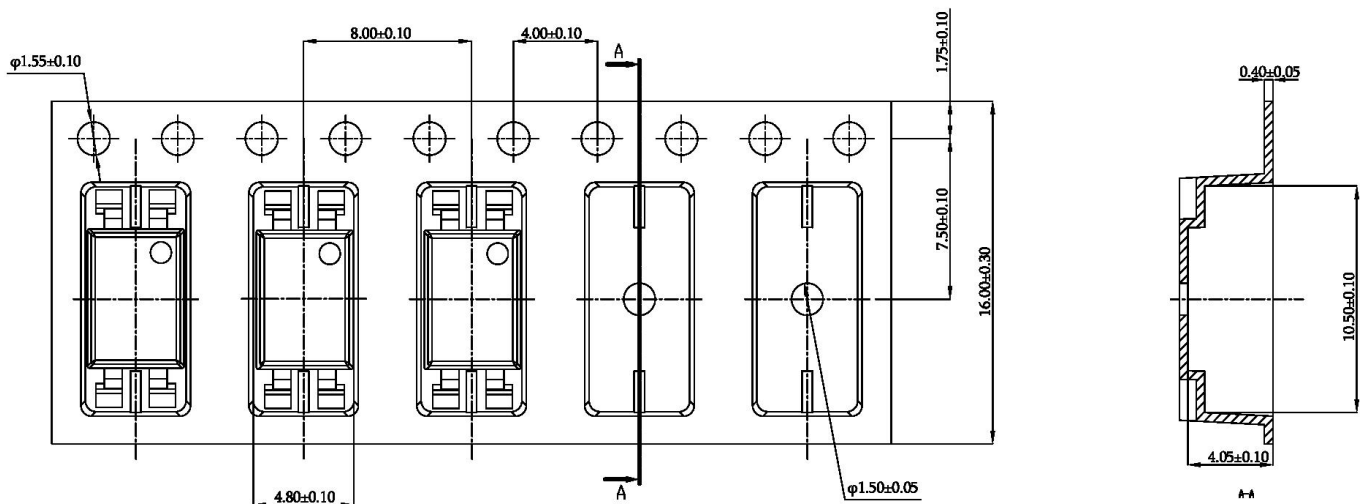


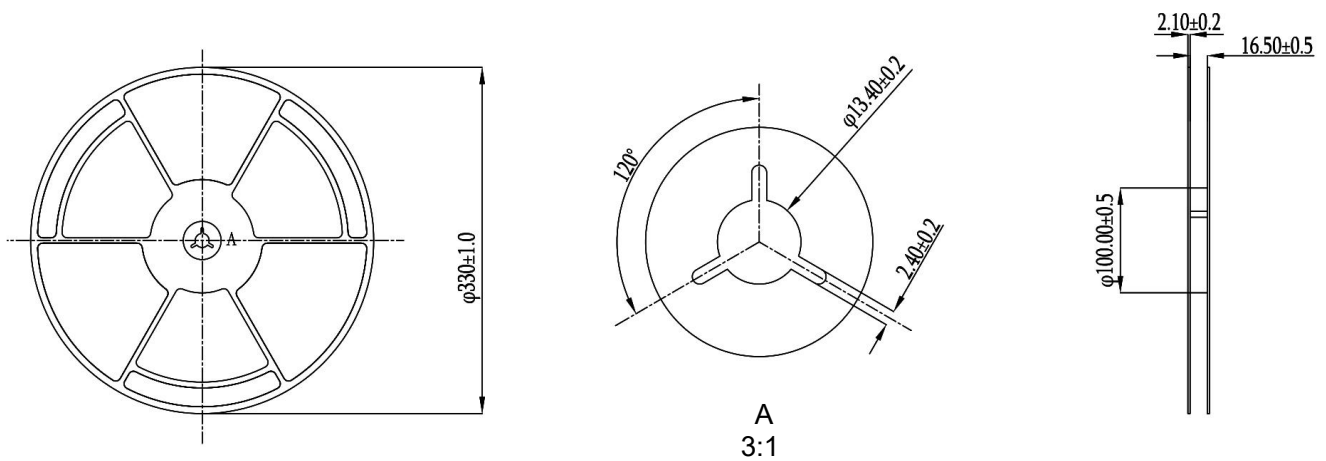
■ SMD4 (Reel)

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

Qty/ctn : 20000pcs.

Schematic: (unit:mm)





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