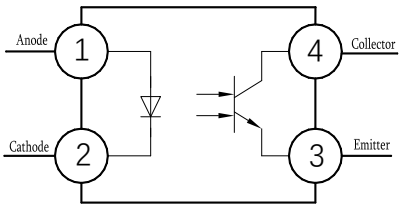
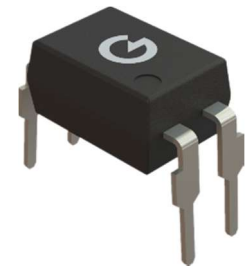
Features

HF

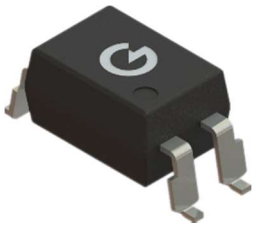
- Current transfer ratio
  (CTR: 50~600% at I_F = 5mA, V_{CE} = 5V)
- High isolation voltage between input and output (Viso =5000V rms)
- Collector - emitter breakdown voltage BV_{CEO} ≥ 80V
- Operating Temperature: -55℃~110℃











Applications

- Programmable controllers
- System appliances, measuring instruments
- Telecommunication equipments
- Home appliances, such as Fan Heaters, etc
- Signal transmission between circuits of different potentials and impedances

Mechanical Data

- Case: DIP-4L, DIP-4L(M),SMD-4L, SMD-4L(SS)
- Molding Compound: UL Flammability Classification Rating 94V-0
- Terminals: Matte tin-plated leads; solderability-per MIL-STD-202, Method 208

Ordering Information

PC	817	(M)	(G)	(X)	-	(U)	(N)	(Y)
①	②	③	④	⑤		⑥	⑦	⑧

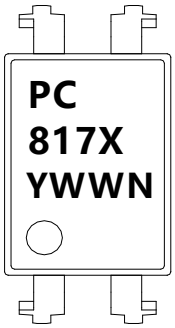
① Brand(PC)
② Product series(817)
③ Package type(DIP-4L:None, DIP-4L(M):M,SMD-4L:S,SMD-4L(SS):SS)
④ Halogen option(None :Halogen free)
⑤ CTR Bank(L,A,B,C,D or None)
⑥ Lead frame (None: Copper; F:lron)
⑦ Customer option 1 (0-9 or A-Z or None)
⑧ Customer option 2 (0-9 or A-Z or None)

Part Number	Package	Shipping Quantity	Marking Code
PC817 X*1	DIP-4L	100 pcs / Tube	PC817 X*1
PC817M X*1	DIP-4L(M)	100 pcs / Tube	PC817 X*1
PC817S X*1	SMD-4L	2000 pcs / Tape & Reel	PC817 X*1
PC817SSX*1	SMD-4L(SS)	2000 pcs / Tape & Reel	PC817 X*1

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

Marking Information

- "PC" denotes brand
- "X" denotes CTR Rank : L, A, B, C, D , None.
- "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	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	P_{TOT}	200	mW
Isolation Voltage *2	V_{ISO}	5000	Vrms
Rated Impulse Isolation Voltage	V_{IOTM}	6000	V
Rated Repetitive Peak Isolation Voltage	V_{IORM}	630	V
Thermal Resistance Junction-to-Air	$R_{\theta JA}$	430	°C/W
Thermal Resistance Junction-to-Case	$R_{\theta JC}$	350	°C/W
Thermal Resistance Junction-to-Lead	$R_{\theta JL}$	368	°C/W
Operating Temperature	T_{OPR}	-55 ~ +110	°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
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 = 20mA	-	1.2	1.4	V
	Peak Forward Voltage	V_{FM}	I_{FM} = 0.5A	-	-	3.0	V
	Reverse Current	I_R	V_R = 4V	-	-	10	μA
	Input Capacitance	C_{in}	V_R = 0V, f = 1kHz	-	30	250	pF
Output	Collector-Emitter Dark	I_{CEO}	V_{CE} = 20V, I_F = 0	-	-	100	nA

	Current						
	Collector-Emitter Breakdown Voltage	BV_{CEO}	I_C = 0.1mA, I_F = 0	80	-	-	V
	Emitter-Collector Breakdown Voltage	BV_{ECO}	I_E = 10μA, I_F = 0	7	-	-	V
Transfer Characteristics	Collector Current	I_C	I_F = 5mA , V_{CE} = 5V	2.5	-	30	mA
	Current Transfer Ratio	CTR	I_F = 5 mA, V_{CE} = 5V	50	-	600	%
	Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	I_F = 20mA, I_C = 1mA	-	0.1	0.2	V
	Isolation Resistance	R_{IO}	V_{IO} = 500Vdc 40~60% R.H.	1×10^{12}	-	-	Ω
	Isolation current	Risc	DC6000V,40~60%R.H	-	-	2	μA
	Floating Capacitance	C_{IO}	V_{IO} = 0, f = 1MHz	-	0.6	1.0	pF
	Cut-off frequency	f_C	VCE = 5V, IC = 2mA RL=100Ω, -3dB	-	80	-	kHz
	Turn On Time	T_{on}	V_{CE}=2V, RL= 100Ω I_C=2mA	-	4	18	μs
	Turn Off Time	T_{off}		-	3	18	

Rank Table of Current Transfer Ratio CTR

Rank Mark	Min. (%)	Max. (%)	Condition
L	50	100	I_F = 5 mA, V_{CE} = 5V
A	80	160	
B	130	260	
C	200	400	
D	300	600	
No mark	50	600	

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

Fig.1 AllowaPCe Forward Current vs. Ambient Temperature

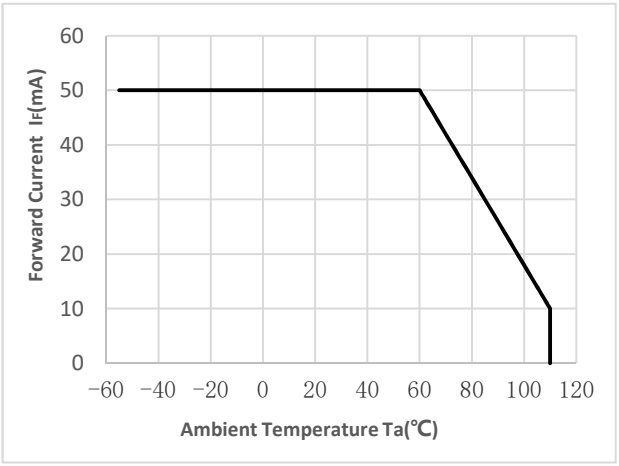


Fig.2 AllowaPCe collector power disspation vs. Ambient Temperature(℃)

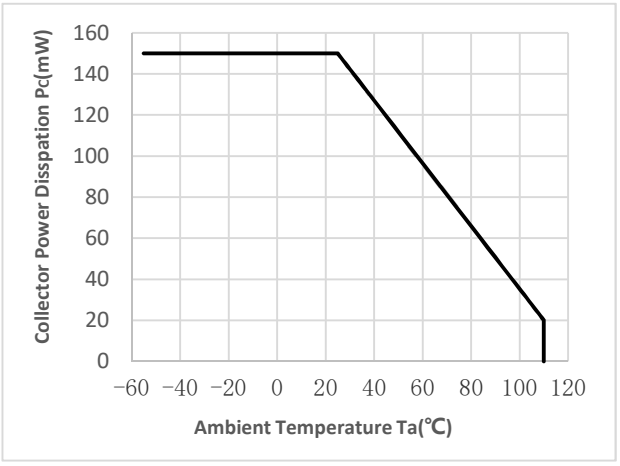


Fig.3 Relative Current Transfer Ratio vs. Forward Current

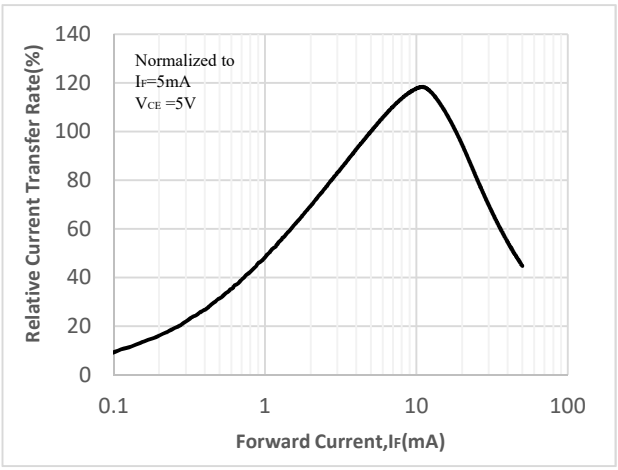


Fig4 Forward Current vs. Forward Voltage

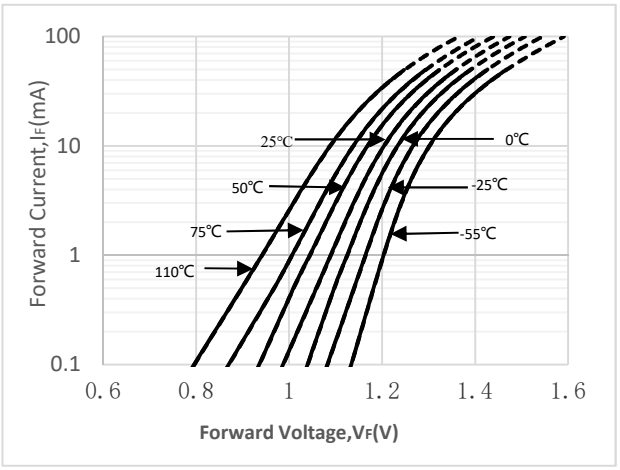


Fig.5 Collector Current vs. Collector-emitter Voltage

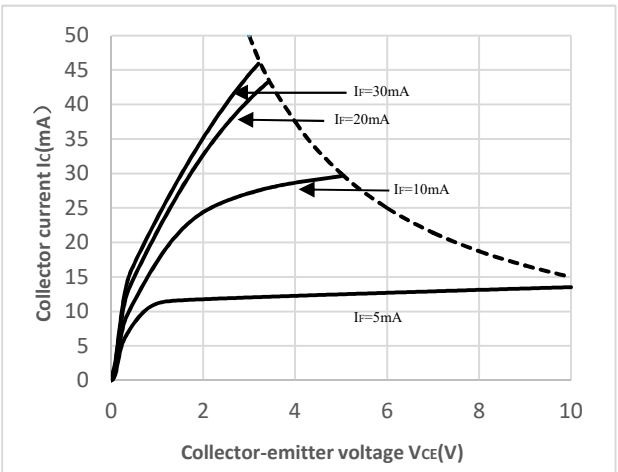


Fig.6 Relative Current Transfer Ratio vs. Ambient Temperature

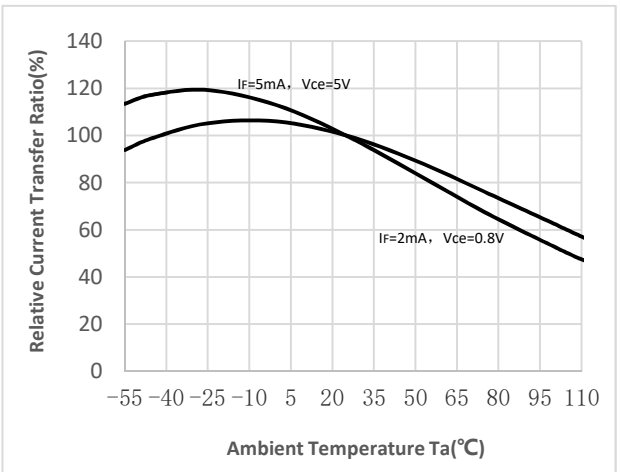


Fig.7 Collector-emitter Saturation Voltage vs. Ambient Temperature

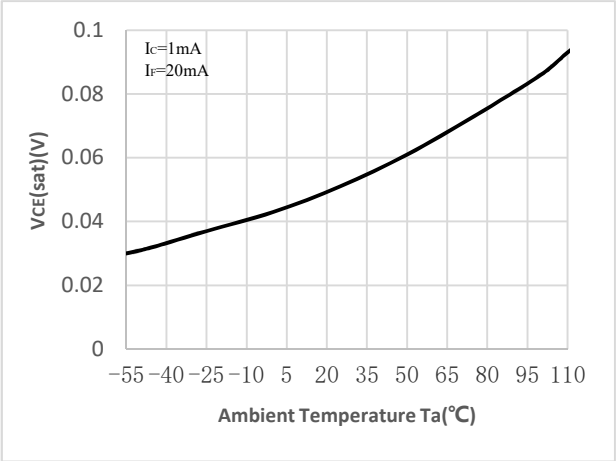


Fig.8 Collector Dark Current vs. Ambient Temperature

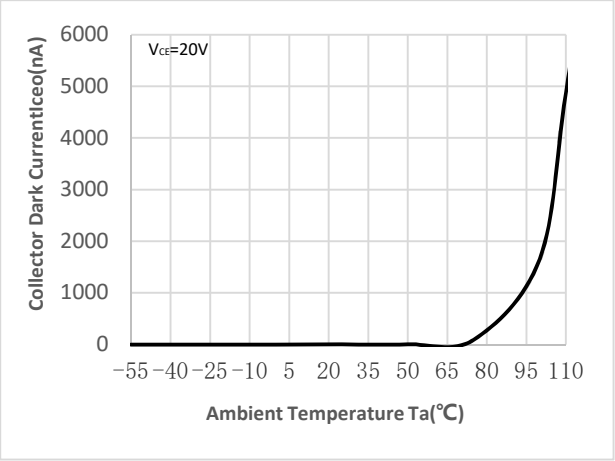


Fig.9 Response Time vs. Load Resistance

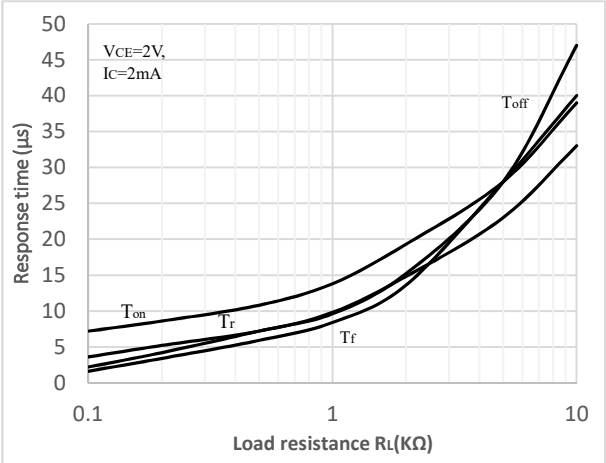


Fig.10 Frequency Response

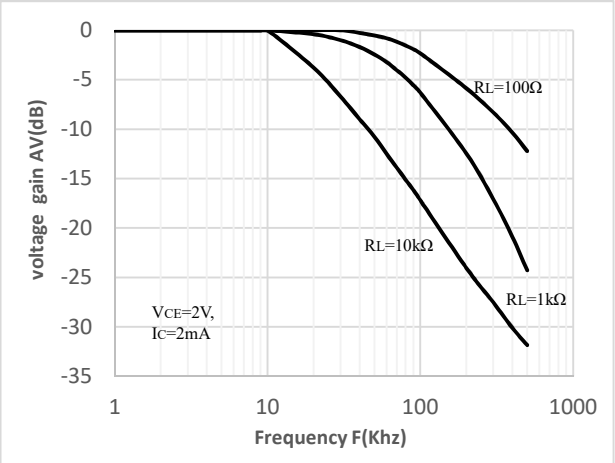


Fig.11 Collector-emitter Saturation Voltage vs. Forward Current

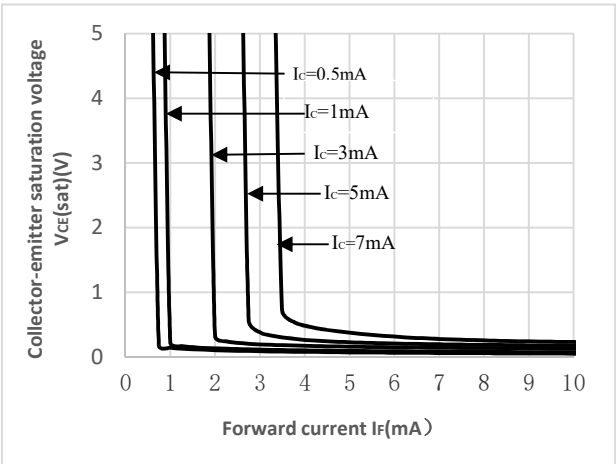
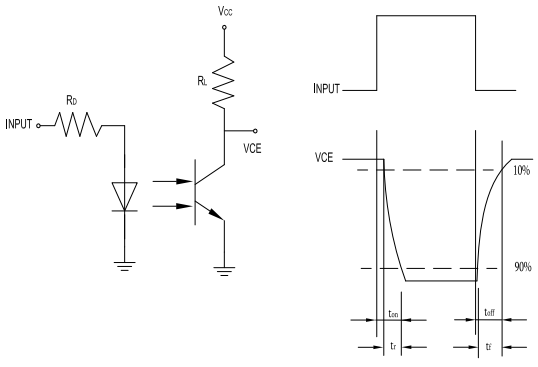
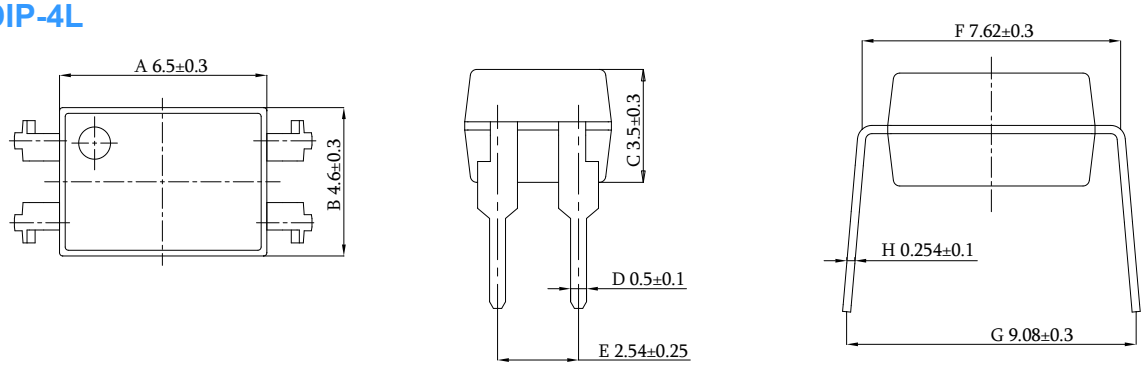


Fig.12 Switching Time Test Circuit & Waveforms

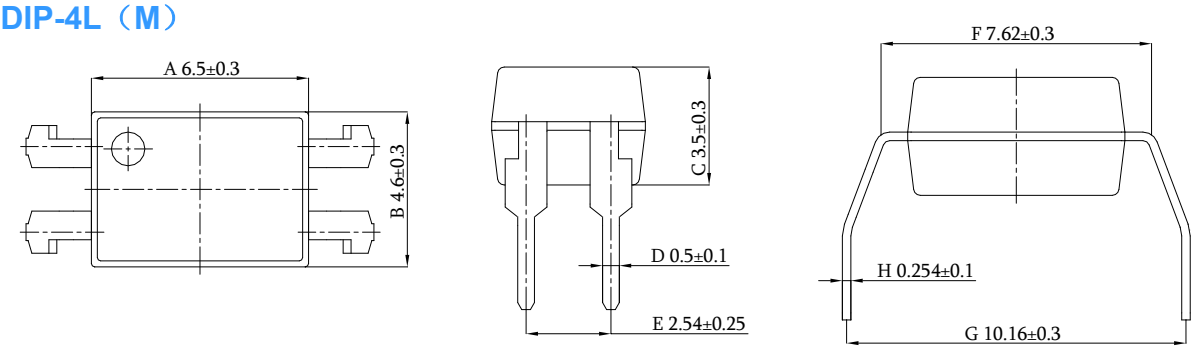


Package Outline Dimensions (unit: mm)

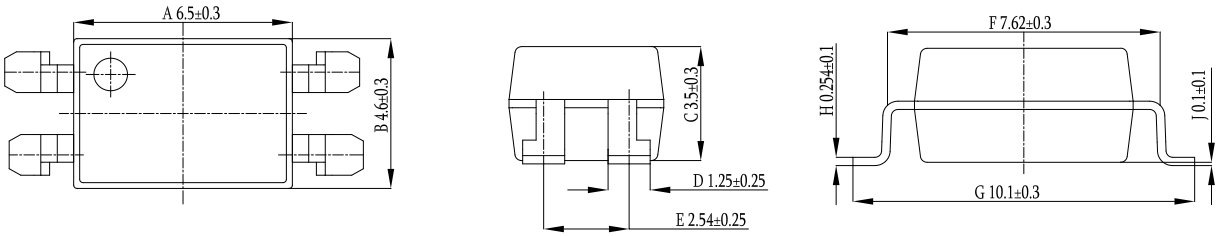
DIP-4L



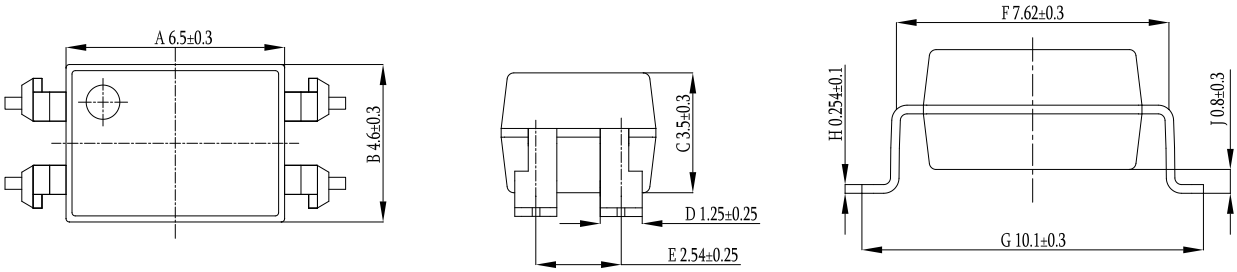
DIP-4L（M）



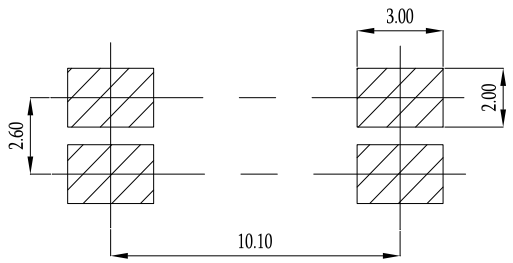
SMD-4L



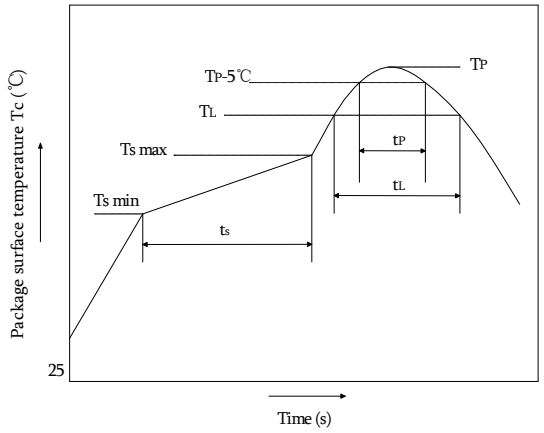
SMD-4L(SS)



SOLDERING FOOTPRINT (unit: mm)



Reflow soldering

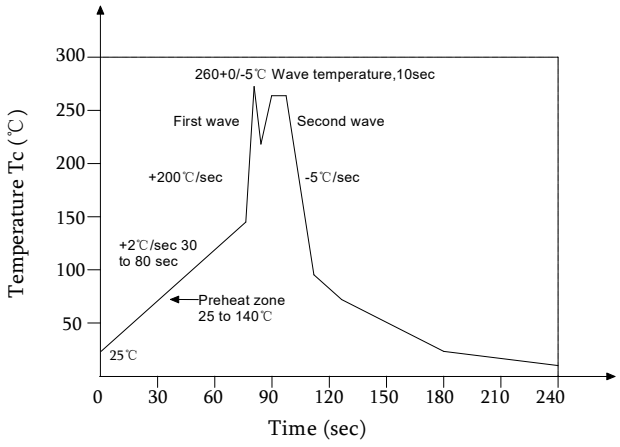


	Symbol	Min	Max	Unit
Preheat temperature	Ts	150	200	℃
Preheat time	ts	60	120	s
Ramp-up rate(T_L to T_P)			3	℃/s
Liquidus temperature	T_L	217		℃
Time above T_L	t_L	60	150	s
Peak temperature	Tp		260	℃
Time during which Tc is between (T_P-5) and T_P	t_p		30	s
Ramp-down rate(T_P to T_L)			6	℃/s

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
DIP-4L/ DIP-4L(M)	Tube(500mm)	100 pcs/tube	25 tubes /box	12 boxes /ctn	190*670mm	520*105*50mm	545*372*235mm	Straight insert type material tube
SMD-4L/ SMD-4L(SS)	Reel(ϕ330mm)	2000 pcs/reel	2 reels /box	5 boxes /ctn	380*420mm	350*340*60mm	365*330*370mm	Leave 25 Spaces at the beginning and 50 Spaces at the end

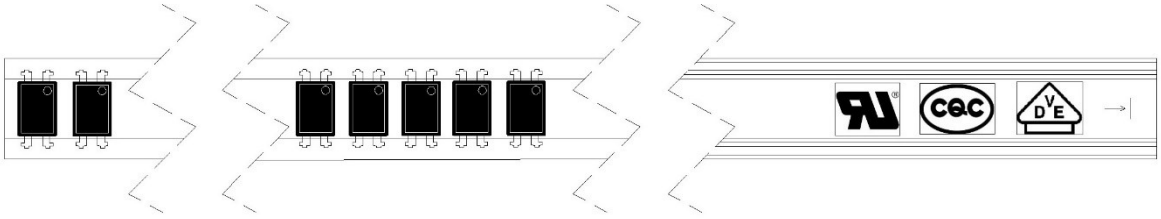
■Summary table

■ DIP-4L/ DIP-4L(M) (Tube)

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

Qty/ctn ： 30000 pcs.

Schematic：(unit:mm)

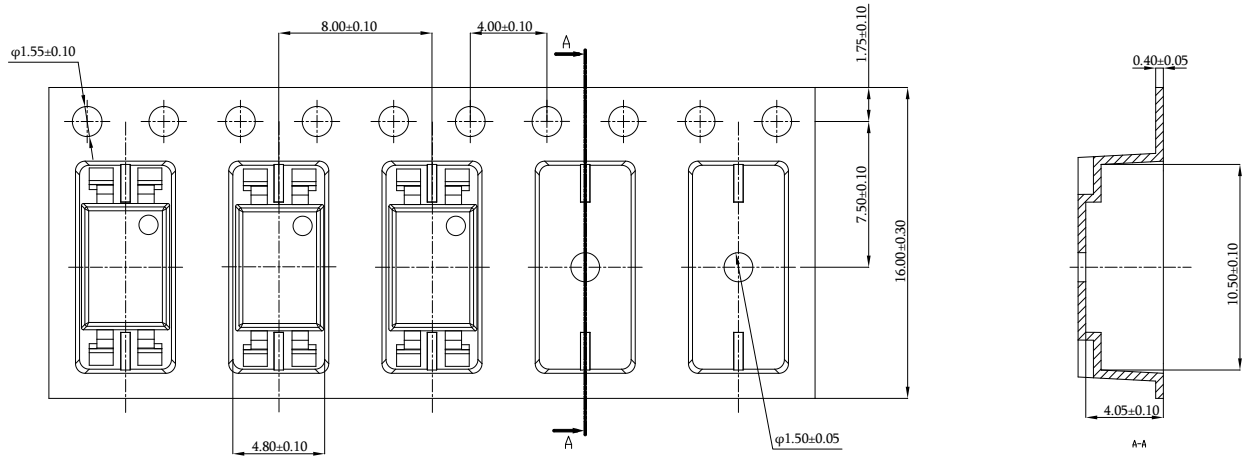


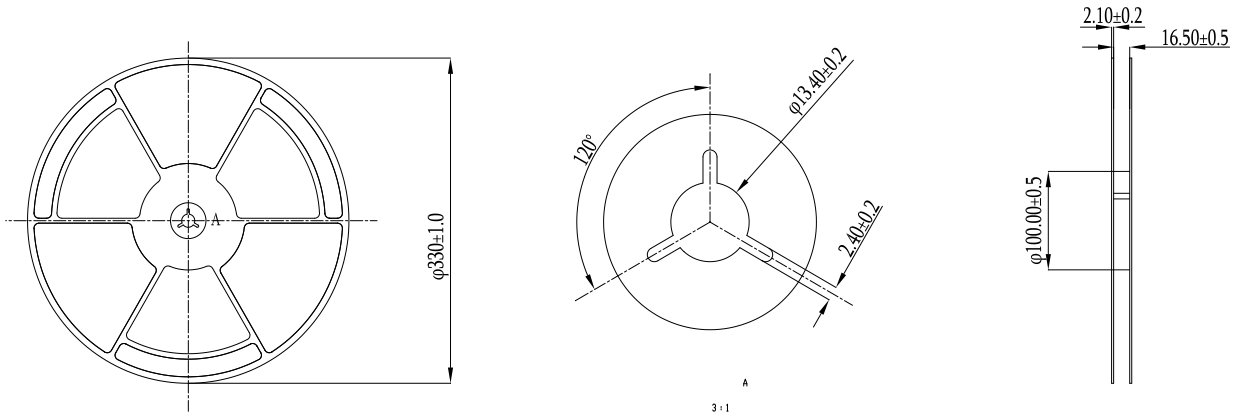
■ SMD-4L/ SMD-4L(SS) （Reel）

Qty/reel：2000 pcs. Qty/box：4000 pcs.

Qty/ctn ： 20000 pcs.

Schematic：(unit:mm)




φ330±1.0
120°
φ13.40±0.2
2.40±0.2
A
3 : 1
2.10±0.2
16.50±0.5
φ100.00±0.5