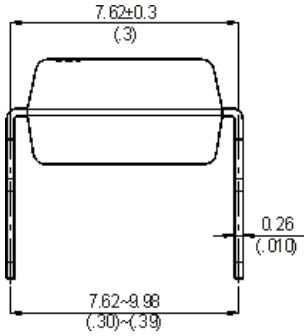
Description

The CYTLP785 consist of a photo−transistor optically coupled to a gallium arsenide infrared emitting diode, The CYTLP785 offer sigal isolated channels in an eight lead plastic DIP , DIP-M or SMD package.

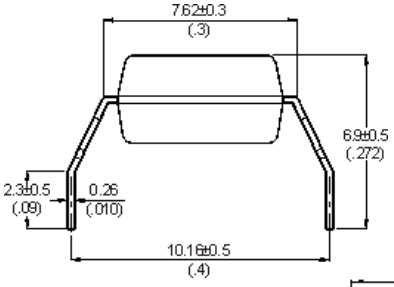


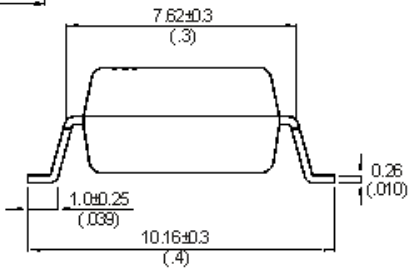
Features

- Current transfer ratio (CTR: 50~600% at I_F =5mA ,V_{CE} =5V)
- High isolation voltage between input and output (Viso=5000 Vrms)
- Minimum BV_{CEO} of 80V guaranteed
- UL approved (NO.:E497745)
- Compliance with EU REACH and RoHS
- CQC approved（NO:CQC20001238665）

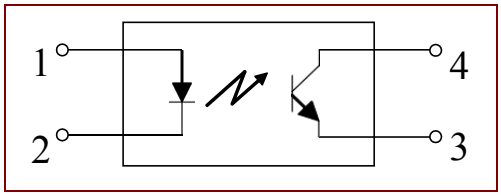
Applications

- Switching power supply, intelligent meter
- Industrial control, measuring instruments
- Office equipment such as copiers
- Household appliances,
  such as air conditioners, fans, water heaters, etc.





Block Diagram and Package



Absolute Maximum Ratings (Ta=25°C)

Parameter		Symbol	Rating	Unit
Input	Forward Current	I_F	50	mA
	Reverse Voltage	V_R	6	V
	Power Dissipation	P	70	mW
	Junction temperature	Tj	125	°C
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
	Junction temperature	Tj	125	°C
Total Power Dissipation		Ptot	200	mW
Isolation Voltage		Viso	5000	Vrms
Operating Temperature		Topr	-55~+110	°C
Storage Temperature		Tstg	-55~+125	°C
Soldering Temperature		Tsol	260	°C

Electro-optical Characteristics (Ta=25°C)

Parameter		Symbol	Condition	Min.	Typ.	Max.	Unit
Input	Forward Voltage	V_{F1}	I_F=10mA	1.0	-	1.3	V
	Forward Voltage	V_{F2}	I_F=20mA	1.1	-	1.4	V
	Reverse Current	I_R	V_R=5V	-	-	10	μA
	Terminal Capacitance	C_t	V=0, f=1kHz	-	30	250	pF
Output	Collector Dark Current	I_{CEO}	V_{CE}=50V	-	-	100	nA
	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	Current Transfer Ratio	CTR	I_F=5mA, V_{CE}=5V	50	-	600	%
	Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	I_F=2mA, I_C=5mA	-	0.25	0.8	V
	Isolation Resistance	R_{ISO}	DC500V, 40~60%R.H.	$1x10^{12}$	-	-	Ω
	Floating Capacitance	Cf	V=0, f=1MHz	-	0.6	1.0	pF
	Cut-off Frequency	Fc	V_{CE}=5V, I_C=2mA, R_L=100Ω, -3dB	-	80	-	kHz
Switching Characteristics	Rise Time	Tr	V_{CE}=10V, I_C=2mA, R_L=100Ω	-	2	-	μs
	Fall Time	Tf		-	3	-	μs
	Turn On Time	Ton		-	3	-	μs
	Turn Off Time	Toff		-	3	-	μs
	Turn On Time	Ton	RL = 1.9 kΩ VCC = 5 V, IF = 16 mA	-	2	-	μs
	Storage time	Ts		-	15	-	μs
	Turn Off Time	Toff		-	25	-	μs

* CTR=I_C/I_F x 100%

Rank Table of CTR

TYPE	Classification	Current Transter Ratio (%)(I_C/I_F) IF = 5mA, VCE = 5V, Ta = 25°C		Marking Of Classification
		Min	Max	
CYTLP785	None	50	600	
	Rank Y	50	150	
	Rank GR	100	300	
	Rank BL	200	600	
	Rank GB	100	600	
	RankYH	75	150	
	Rank GRL	100	200	
	Rank GRH	150	300	
	Rank BLL	200	400	

Fig.1 Test Circuits

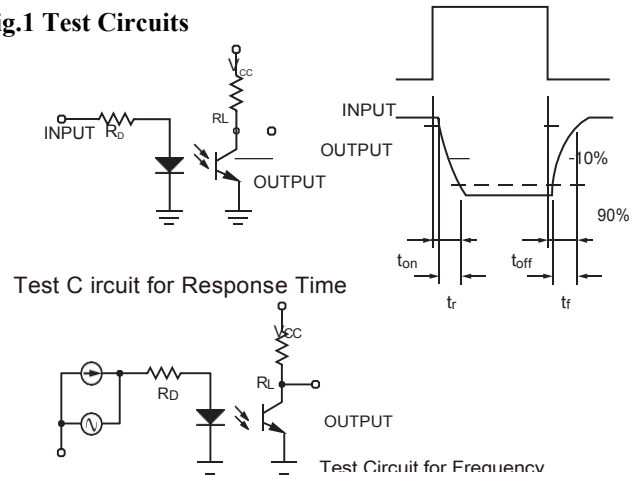


Fig.2 Current Transfer Ratio vs. Forward Current

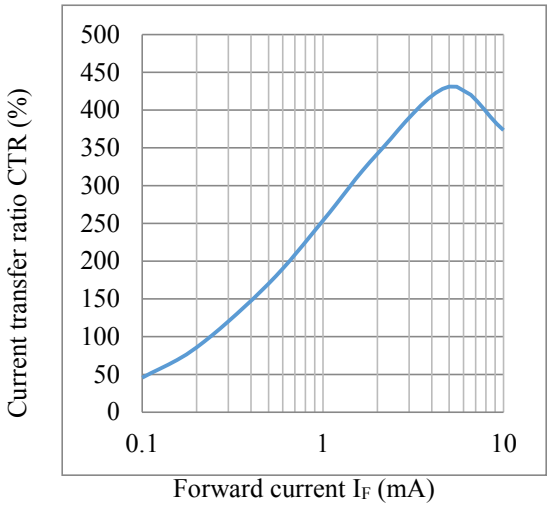


Fig.3 Forward Current vs. Forward Voltage

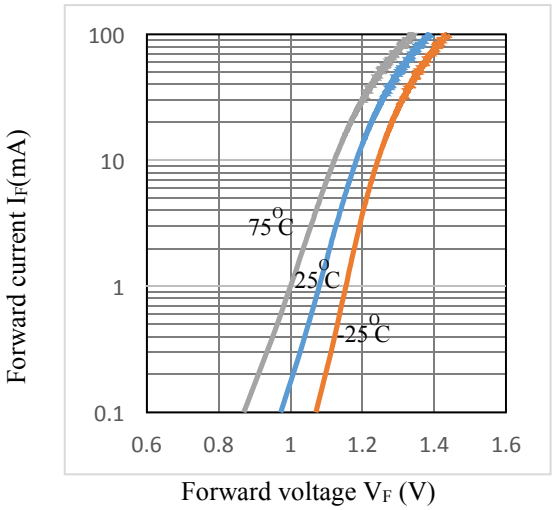


Fig.4 Collector Current vs. Collector-emitter Voltage

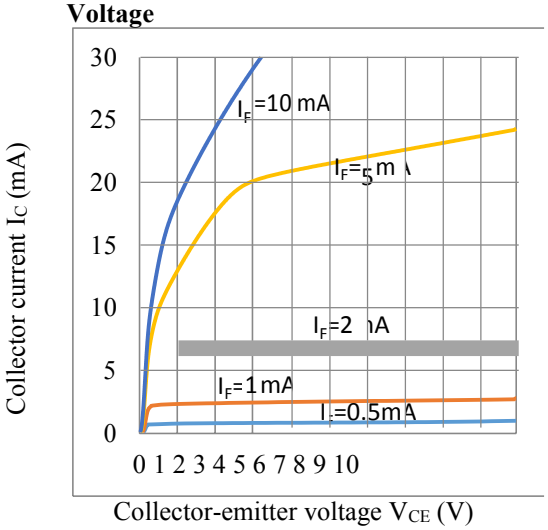


Fig.5 Relative Current Transfer Ratio vs. Ambient Temperature

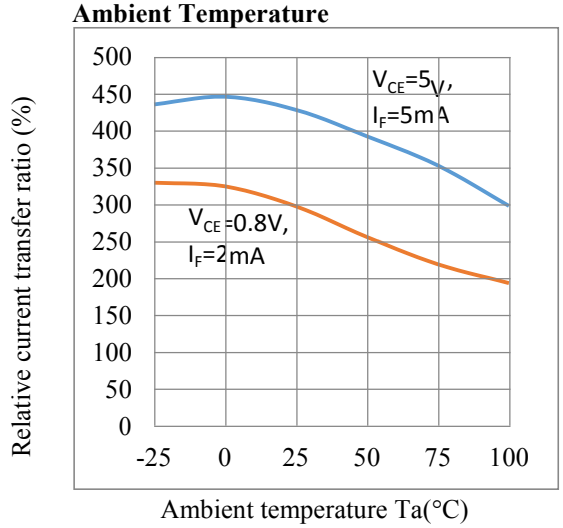


Fig.6 Collector-emitter Saturation Voltage vs. Ambient Temperature

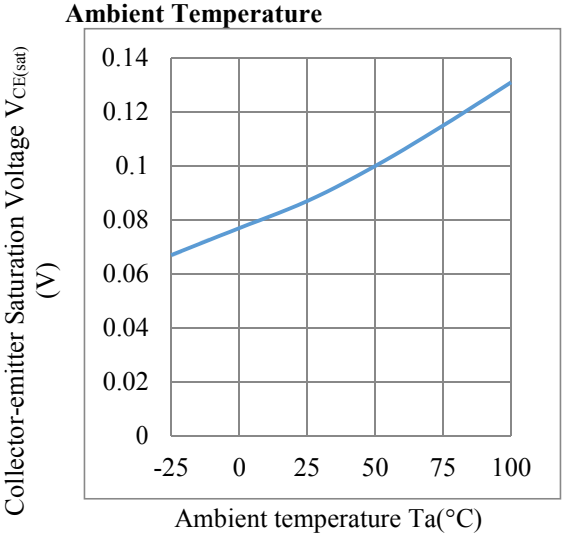


Fig.7 Collector Dark Current vs. Ambient Temperature

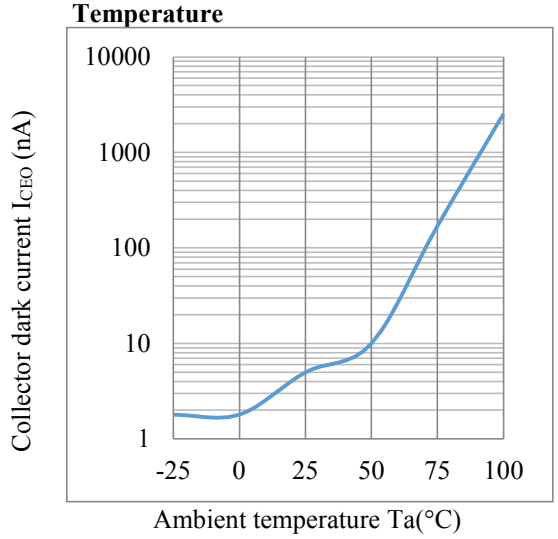


Fig.8 Response Time vs. Load Resistance

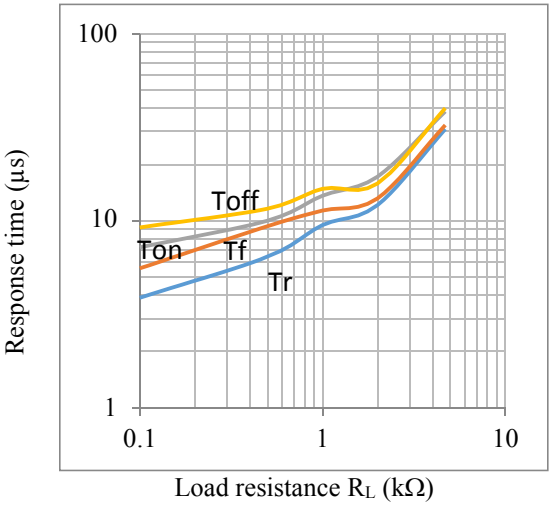


Fig.9 Frequency Response

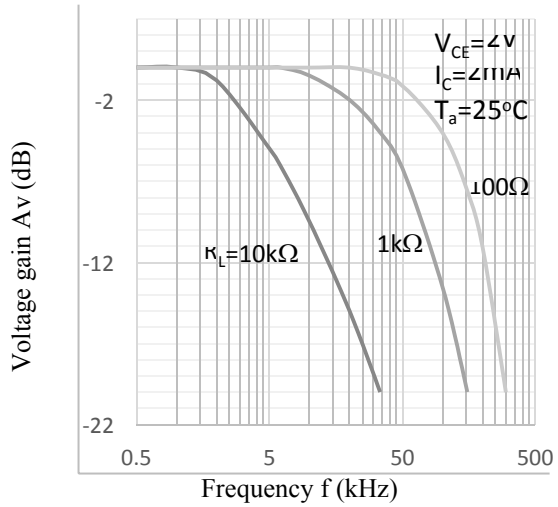
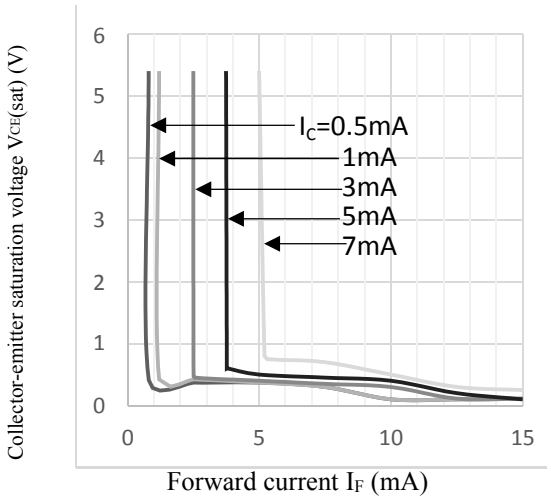
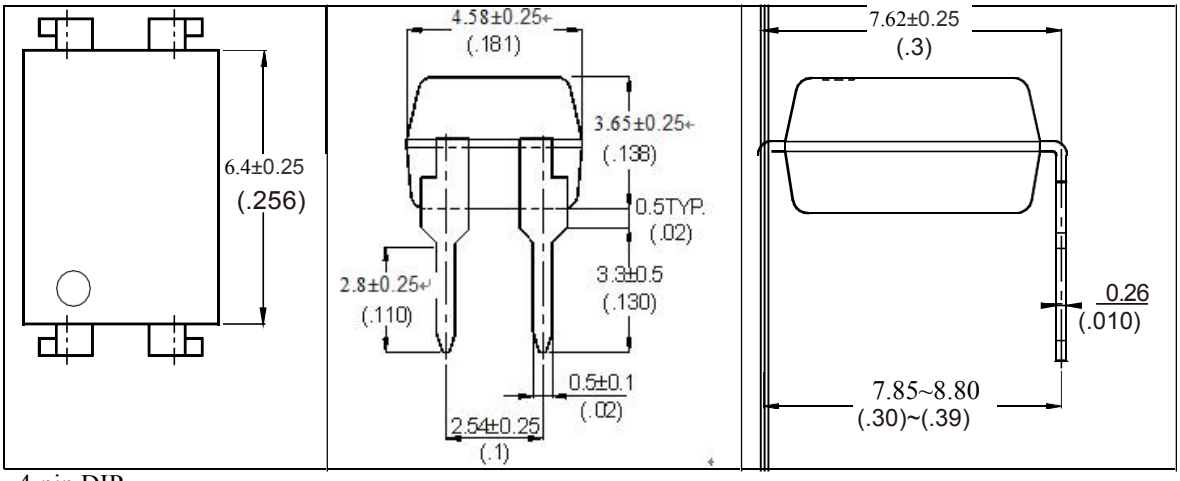


Fig.10 Collector-emitter Saturation Voltage vs. Forward Current

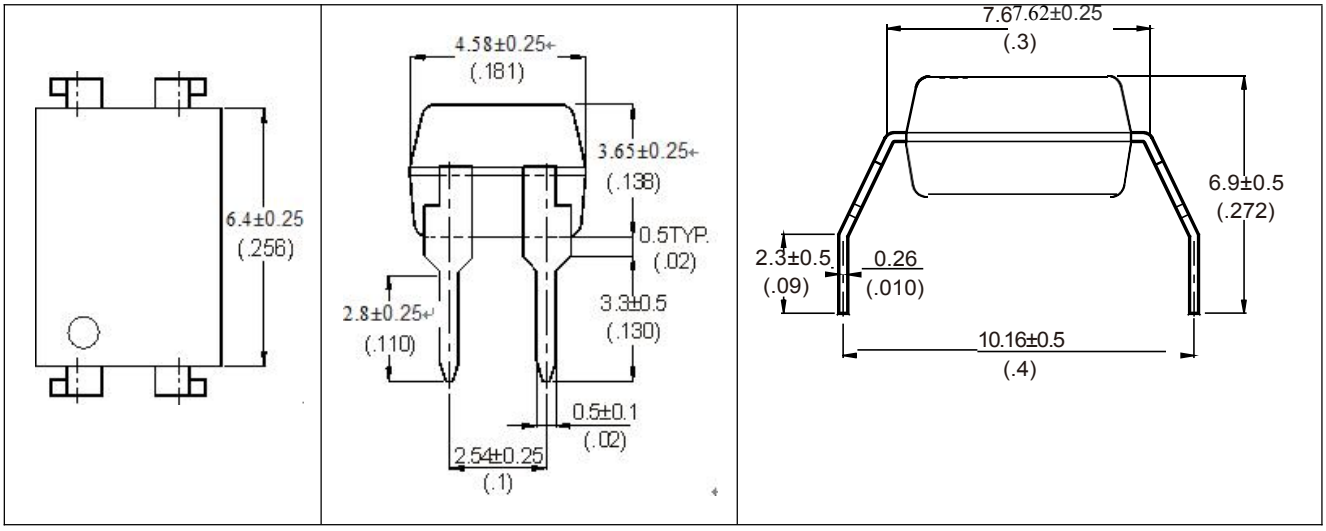


Outline Dimensions

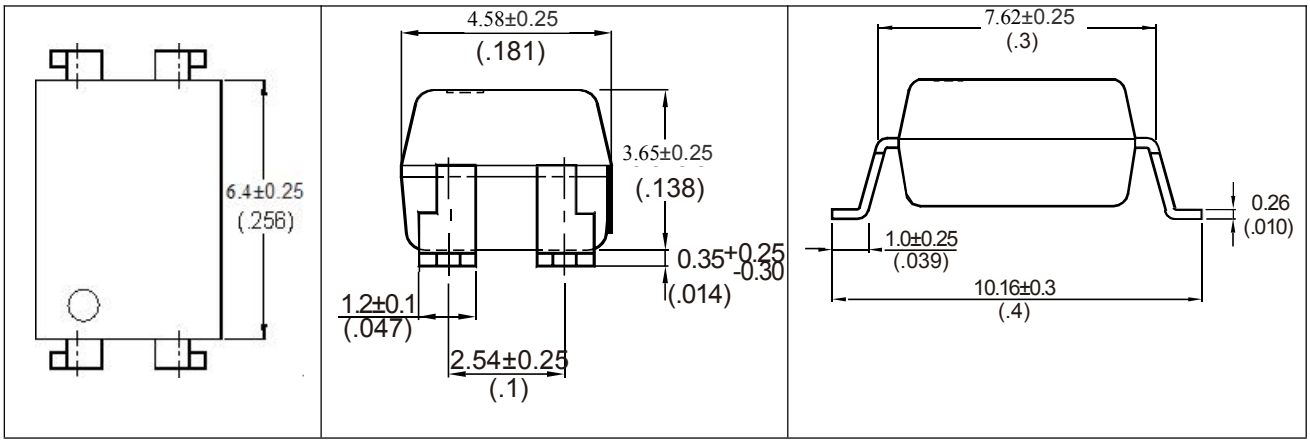
Unit: mm (inch)



4-pin DIP

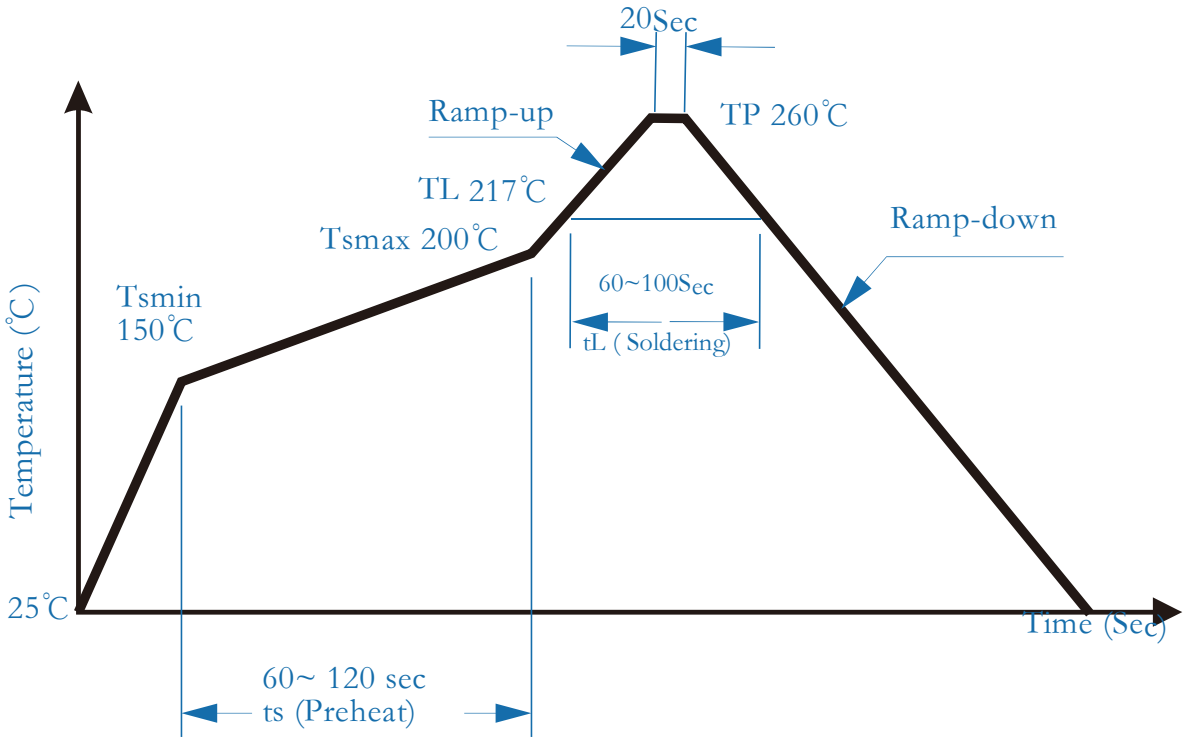


4-pin DIP (M Type)



4- pin SMD

Solder Reflow Profile



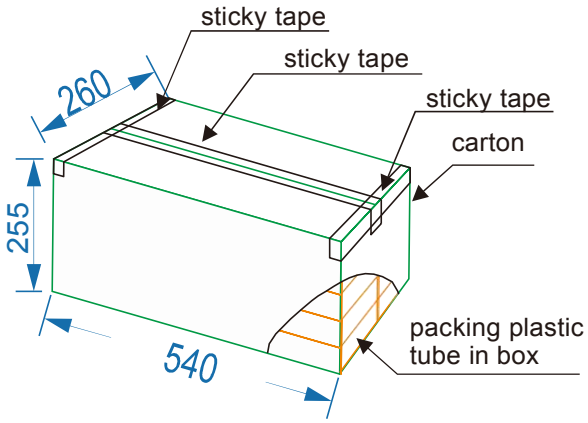
Packing

■ Summary table

Package Type	Packing Form	Quantity per Reel/Tube	Quantity per Box	Quantity per Carton	Antistatic Bag Specification	Box Specification	Carton Specification	Note
SMD-4	Reel (ϕ330mm)	2k pcs/reel	5 reels /box	4 boxes /ctn	-	350*340*108 mm	458*365*350 mm	Guard band 200mm min.
DIP-4	Tube (500*12*11mm)	100pcs /tube	60 tubes/box	6 boxes /ctn	NA	526*118*75mm	540*260*255 mm	Endplug (blue) and Endplug (white) keep the direction
DIP-4 (M)	Tube (500*13*11mm)	100pcs /tube	60 tubes/box	6 boxes /ctn	NA	526*128*77mm m	540*270*275 mm	

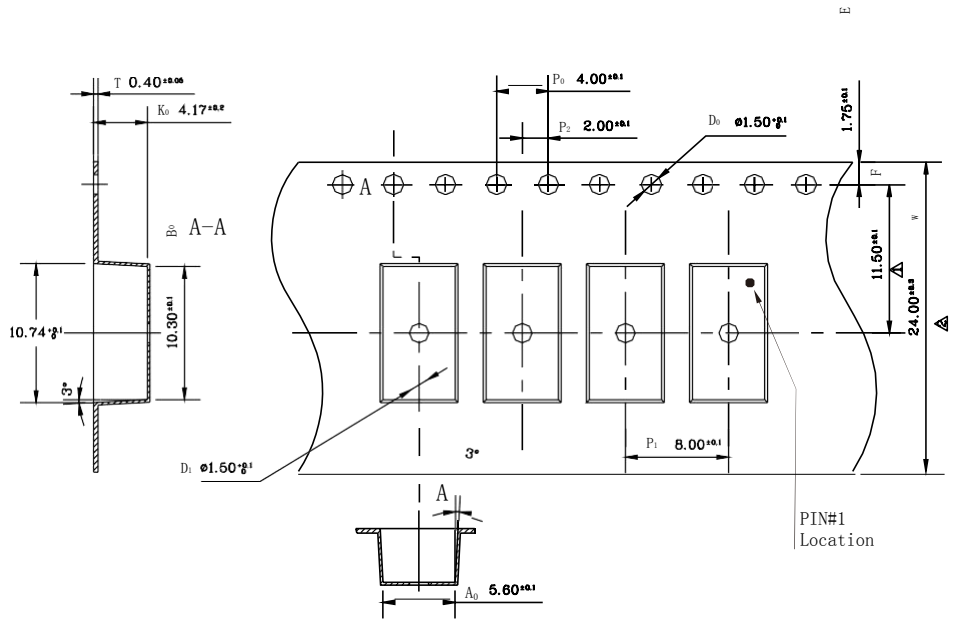
■ DIP-4 (tube)

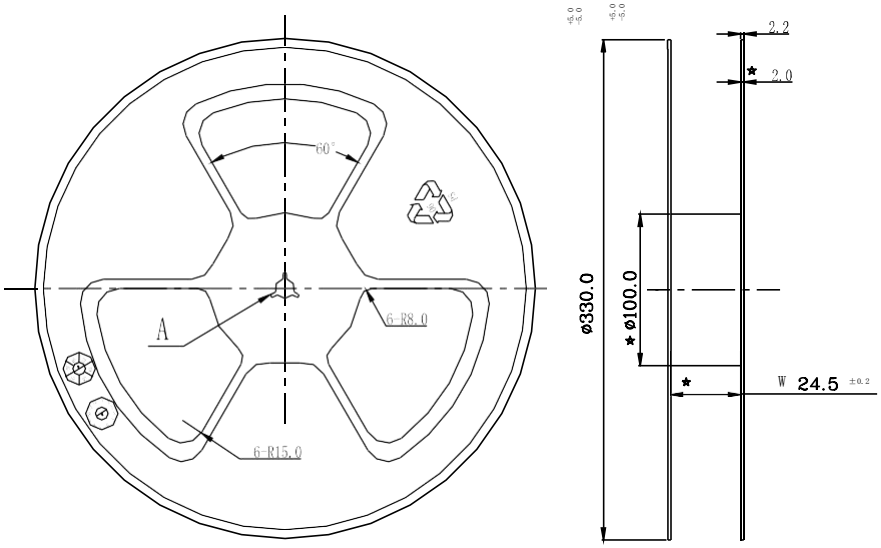
1) Qty/ctn：36000pcs
2) Inner packing：
   i. 100pcs/tube, antistatic tube, indication of trade mark and antistatic.
   ii. 60 tubes/box.
3) Schematic:



■ SMD-4 (Tape & Reel)

4) Qty/reel：2000 pcs. Qty/ctn：40000 pcs.
5) Inner packing：2000pcs/reel.
6) Schematic：


T 0.40
K0 4.17
B0
A–A
10.74
10.30
3°
P0 4.00
P2 2.00
D0 ø1.50
1.75
E
F
W
11.50
24.00
A
3°
P1 8.00
D1 ø1.50
A
A0 5.60
PIN#1
Location


60°
A
6-R8.0
6-R15.0
2.2
2.0
ø330.0
★ ø100.0
★
W 24.5 ±0.2