



Opto Plus LED Corp

OPS-L193TW5-5181

1.6 x 0.8 x 0.4 mm SMD LAMP

● **EDIT HISTORY**

Version A: Sep. 9, 2011

New color data sheet.

Manufacture	Examination	Approving



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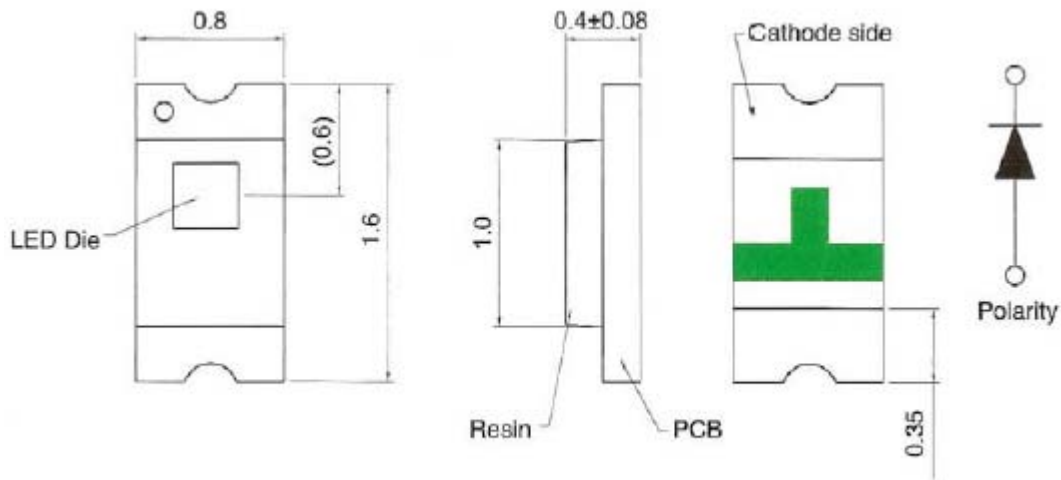
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● FEATURES

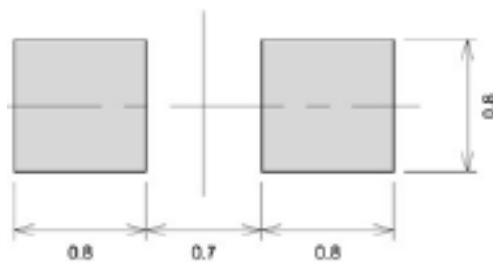
- ◆ 1.6 x 0.8 x 0.4 mm SMD Lamp.
- ◆ Wide viewing angle.
- ◆ Low power consumption.
- ◆ RoHS compliant.

● PACKAGE DIMENSIONS



Polarity reference for cathode mark is reversed for UR.

● RECOMMENDED SOLDERING PAD DIMENSIONS



LENS COLOR	DICE MATERIAL	LIGHT COLOR
Color Diffused	InGaN	White

RoHS Compliance



Pb free.





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● **ABSOLUTE MAXIMUM RATINGS AT TA=25°C**

Parameter	Symbol	White	Unit
Power Dissipation	P_{AD}	64	mW
Continuous Forward Current	I_{FMAX}	20	mA
Peak Forward Current (duty cycle 1/10, 0.1ms Pulse Width)	I_{FP}	80	mA
Reverse Voltage	V_R	5	V
Operating Temperature Range	T_{OPR}	-30 to +85	°C
Storage Temperature Range	T_{STG}	-40 to +90	°C

● **ELECTRICAL OPTICAL CHARACTERISTICS AT TA=25°C**

Characteristic	Symbol	Condition	Min.	Type	Max.	Unit
Forward Voltage	V_F	$I_F = 5mA$	-	2.7	3.1	V
Reverse Current	I_R	$V_R = 5V$	-	-	10	μA
Peak Wavelength	λ_P	$I_F = 5mA$	-	-	-	nm
Dominant Wavelength	λ_d	$I_F = 5mA$	-	X: 0.29 Y: 0.28	-	-
Luminous Intensity	I_V	$I_F = 5mA$	112.5		226	mcd



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● **LUMINOUS INTENSITY BIN LIMITS**

Test condition : @5mA		
BIN Code	I _v min. (mcd)	I _v max. (mcd)
R1	112.5	140
R2	140	180
S1	180	226

* @5mA / Ta=25°C, Tolerance: ±10%

● **FORWARD VOLTAGE BIN LIMITS**

Test condition : @5mA		
Color	Bin Code	Spec. Range (V)
White	G4	2.7 – 2.8
	H1	2.8 – 2.9
	H2	2.9 – 3.0
	H3	3.0 – 3.1

* @5mA / Ta=25°C, Tolerance: ±0.05V



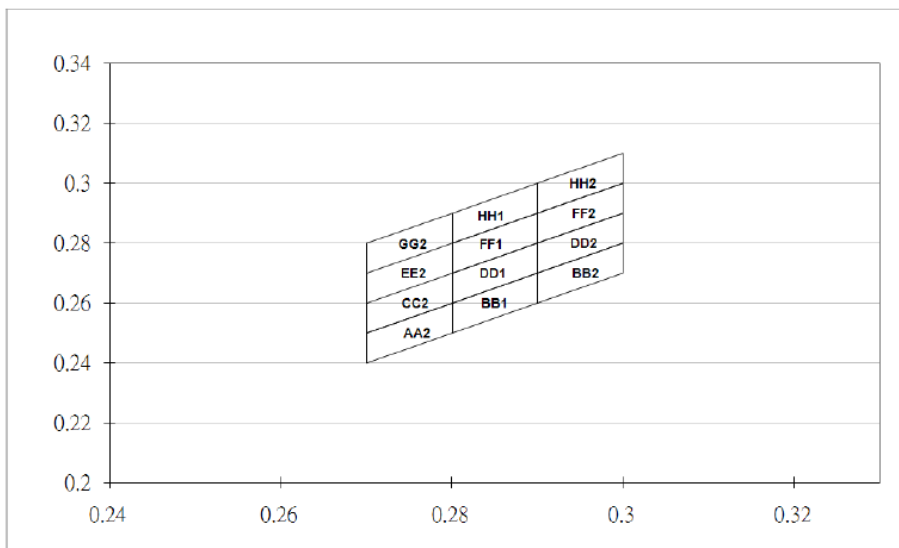
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● CHROMATICITY BIN

GG2			HH1			HH2		
1	0.27	0.27	1	0.28	0.28	1	0.29	0.29
2	0.27	0.28	2	0.28	0.29	2	0.29	0.3
3	0.28	0.29	3	0.29	0.3	3	0.3	0.31
4	0.28	0.28	4	0.29	0.29	4	0.3	0.3
1	0.27	0.27	1	0.28	0.28	1	0.29	0.29
EE2			FF1			FF2		
1	0.27	0.26	1	0.28	0.27	1	0.29	0.28
2	0.27	0.27	2	0.28	0.28	2	0.29	0.29
3	0.28	0.28	3	0.29	0.29	3	0.3	0.3
4	0.28	0.27	4	0.29	0.28	4	0.3	0.29
1	0.27	0.26	1	0.28	0.27	1	0.29	0.28
CC2			DD1			DD2		
1	0.27	0.25	1	0.28	0.26	1	0.29	0.27
2	0.27	0.26	2	0.28	0.27	2	0.29	0.28
3	0.28	0.27	3	0.29	0.28	3	0.3	0.29
4	0.28	0.26	4	0.29	0.27	4	0.3	0.28
1	0.27	0.25	1	0.28	0.26	1	0.29	0.27
AA2			BB1			BB2		
1	0.27	0.24	1	0.28	0.25	1	0.29	0.26
2	0.27	0.25	2	0.28	0.26	2	0.29	0.27
3	0.28	0.26	3	0.29	0.27	3	0.3	0.28
4	0.28	0.25	4	0.29	0.26	4	0.3	0.27
1	0.27	0.24	1	0.28	0.25	1	0.29	0.26



@5mA / Ta=25°C, Tolerance: ± 0.01

Date: 9/9/2011

Opto Plus LED Corp. 2F-1, No.496, Bannan Road, Jhonghe City, Taipei County 235, Taiwan (R.O.C) Tel: 886-2-2222-5698 Fax: 886-2-2222-2566

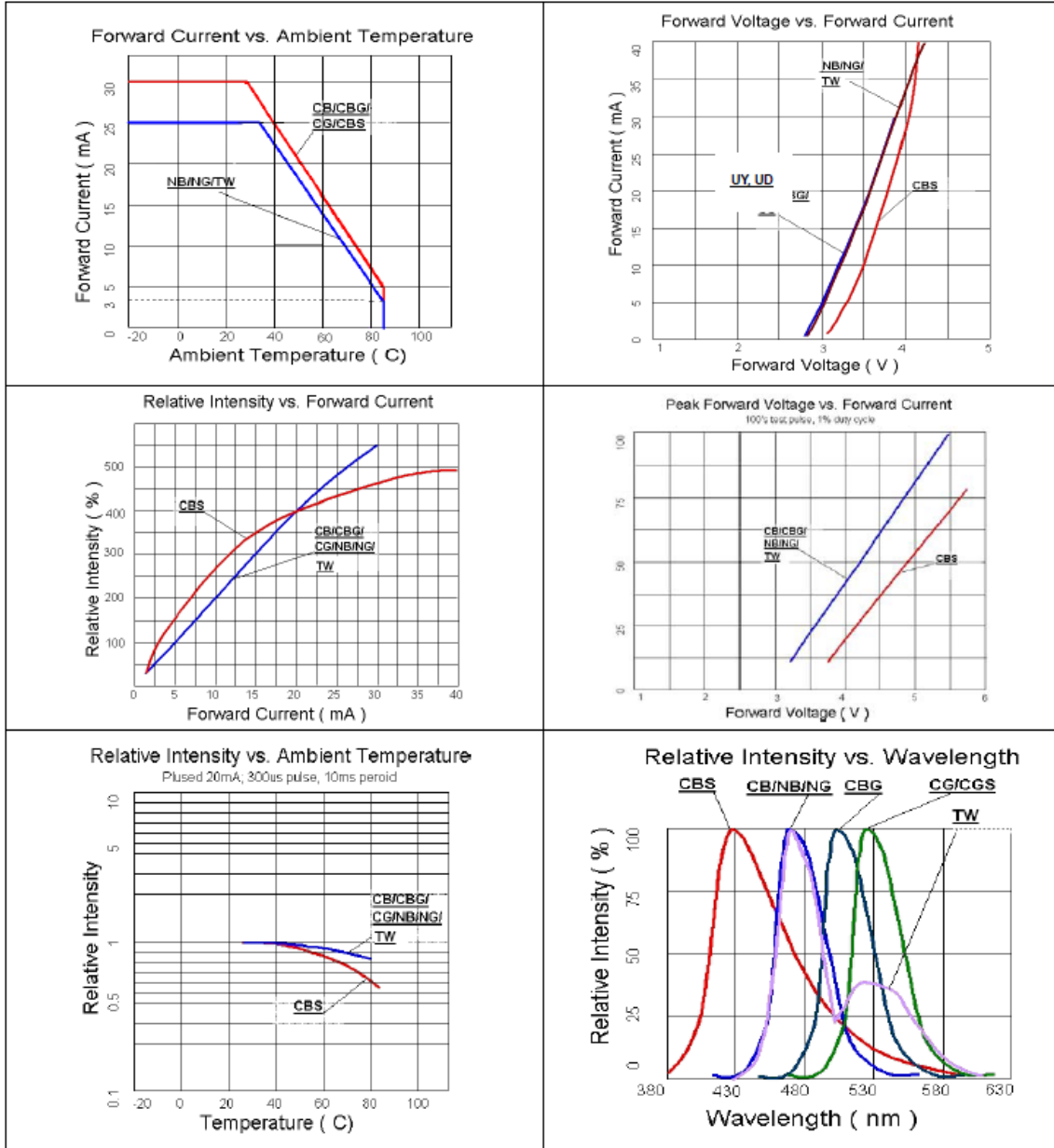


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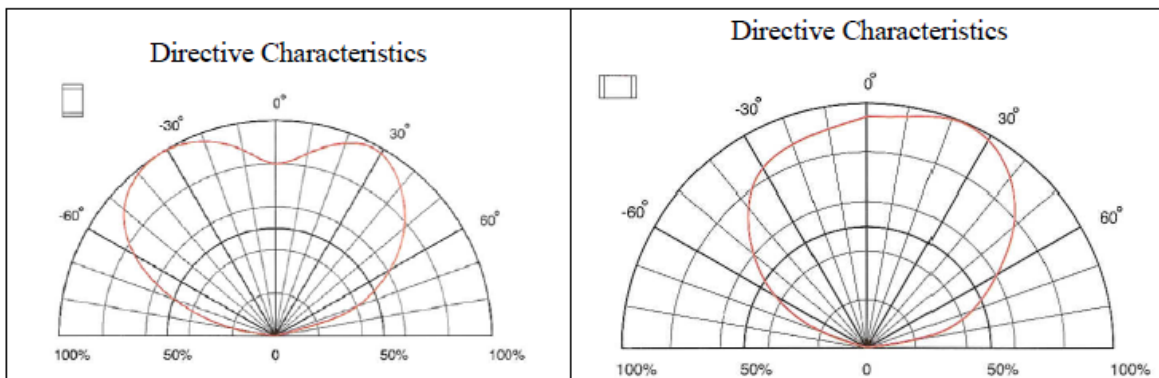
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● TYPICAL ELECTRO-OPTICAL CHARACTERISTIC CURVES



Characteristic Curves for All Colors (Radiation Pattern)





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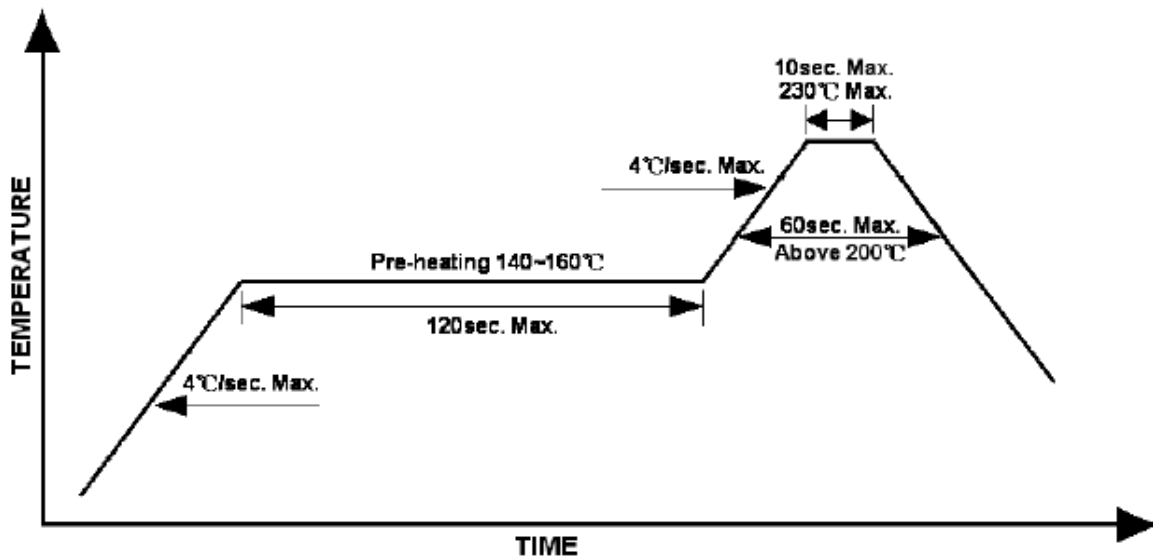
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● REFLOW SOLDERING

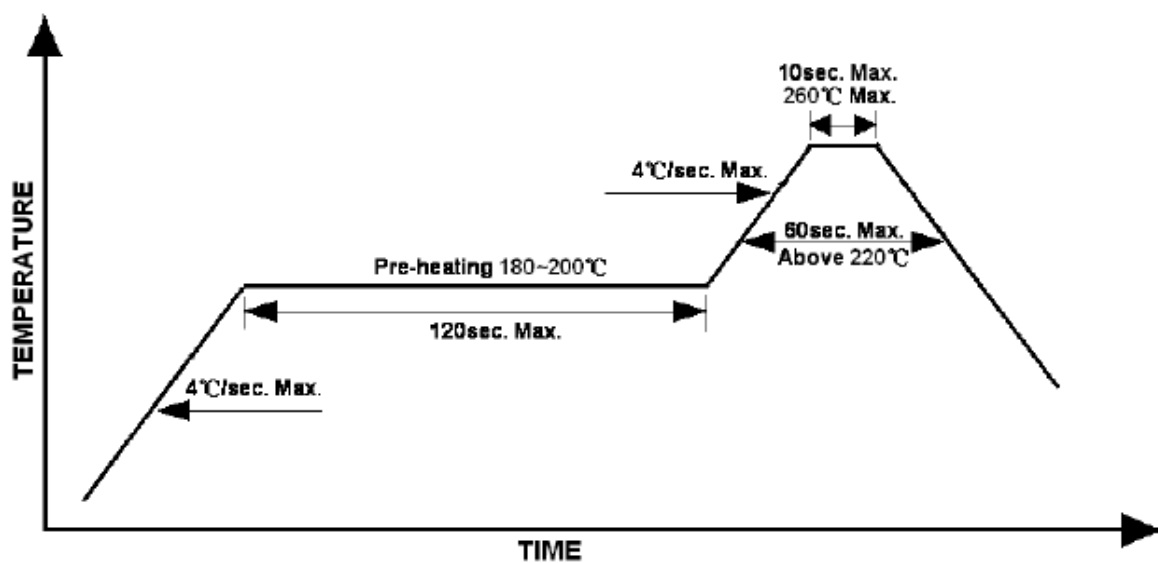
Reflow Soldering

- Recommended tin glue specifications: melting temperature in the range of 178~192 °C
- The recommended reflow soldering profile is as follows (temperatures indicated are as measured on the surface of the LED resin):

Lead Solder Profile



Lead-free Solder Profile





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● PRECAUTIONS

1. Avoid exposure to moisture at all times during transportation or storage.
2. Anti-Static precaution must be taken when handling GaN, InGaN, and AlInGaP products.
3. It is suggested to connect the unit with a current limiting resistor of the proper size. Avoid applying a reverse voltage beyond the specified limit.
4. Avoid operation beyond the limits as specified by the absolute maximum ratings.
5. Avoid direct contact with the surface through which the LED emits light.
6. If possible, assemble the unit in a clean room or dust-free environment.

● REWORKING

- Rework should be completed within 5 seconds under 260 °C.
- The iron tip must not come in contact with the copper foil.
- Twin-head type is preferred.

● CLEANING

Following are cleaning procedures after soldering:

- An alcohol-based solvent such as isopropyl alcohol (IPA) is recommended.
- Temperature x Time should be 50°C x 30sec. or <30°C x 3min
- Ultra sonic cleaning: < 15W/ bath; bath volume ≤ 1liter
- Curing: 100 °C max, <3min

● CAUTIONS OF PICK AND PLACE

- Avoid stress on the resin at elevated temperature.
- Avoid rubbing or scraping the resin by any object.
- Electro-static may cause damage to the component. Please ensure that the equipment is properly grounded. Use of an ionizer fan is recommended.

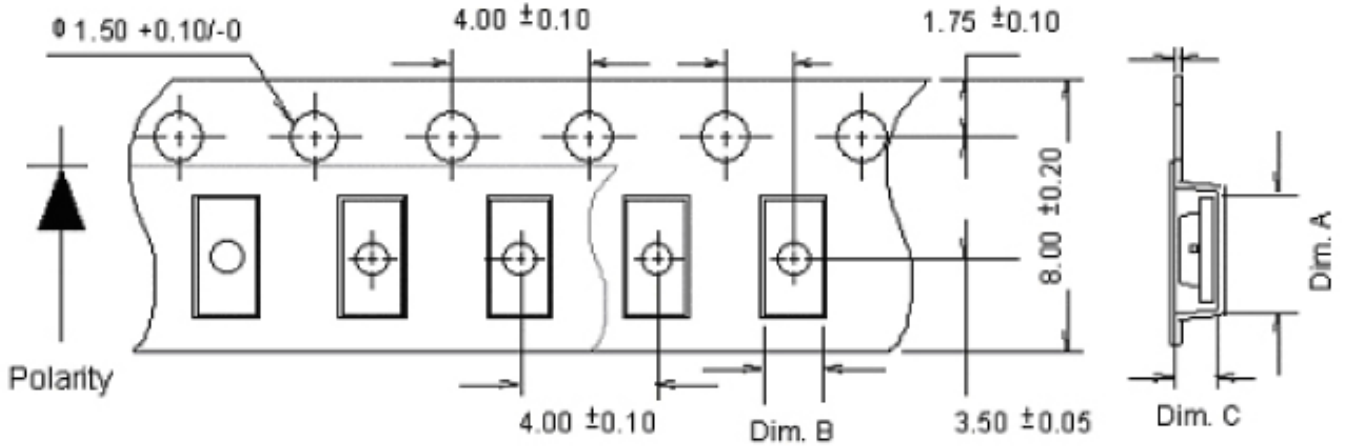


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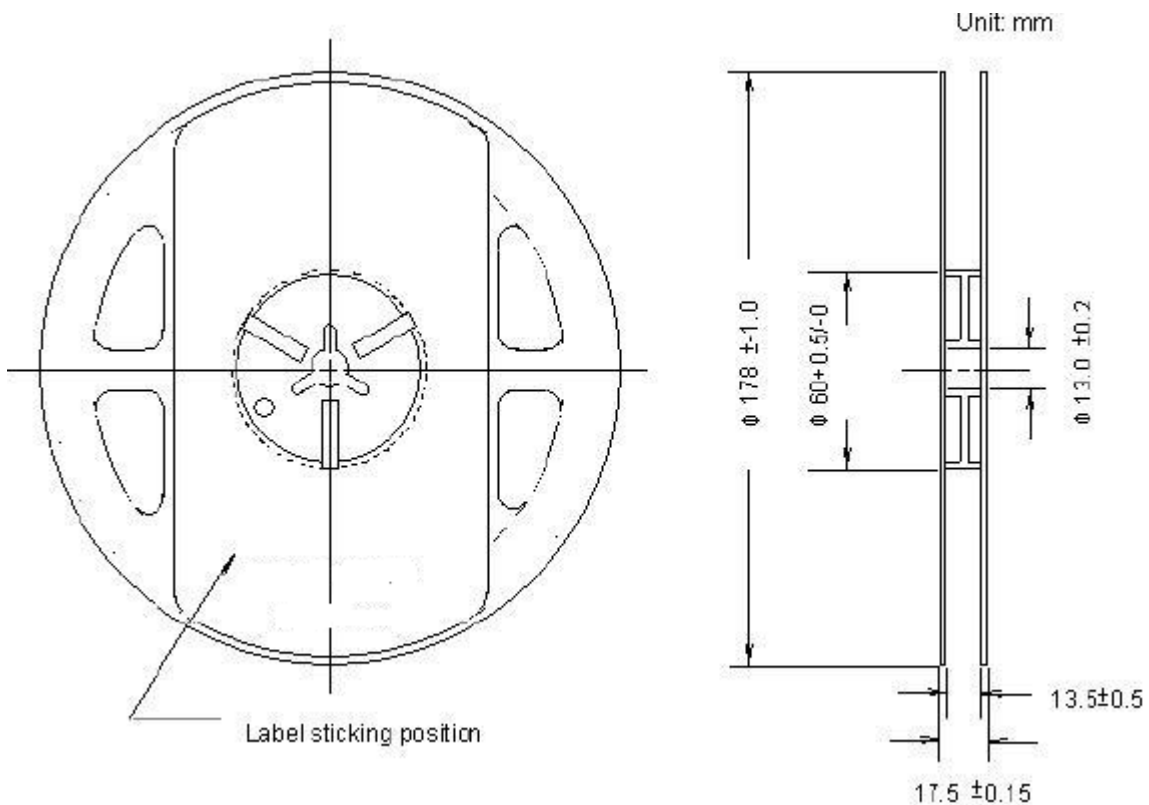
● **TAPE SPECIFICATION : 4000 PCS PER REEL**



Unit: mm

Dim. A	Dim. B	Dim. C
1.8 ± 0.10	0.95 ± 0.10	0.6 ± 0.10

● **PACKAGE DIMENSIONS OF REEL**





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● PACKING AND SHIPPING INSTRUCTION

