



# YETDA INDUSTRY LTD.

## Technical Data Sheet

**MODEL NO : S2016ANB4-PL**

**2016 Package 2.0(L)\*1.6mm(W)\*0.6(T) Chip LEDs**

**Features :**

- Compatible with automatic placement equipment
- Compatible with reflow solder process

**Applications :**

- Indicators
- Automotive : backlighting in dashboard and switch
- Backlight for LCD

Dice material	Emitted color	Lens Color	Resin
InGaN	Blue	Water Clear	Silicon

**Electrical/Optical Characteristics(Ta=25°C)**

Parameter	Test Condition	Symbol	Value			Unit
			Min	Typ	Max	
Peak Wave Length	IF=60mA	$\lambda$ D	465		470	nm
Forward voltage	IF=60mA	VF	2.8		3.4	V
Luminous Flux	IF=60mA	$\phi$	5.0		7.0	lm
Luminous intensity	IF=60mA	Iv	1500		2000	mcd
Viewing angle at 50% Iv	IF=60mA	2 $\theta$ 1/2		120		Deg
Reverse current	VR=5V	IR			10	$\mu$ A

**Absolute Maximum Ratings(Ta=25°C)**

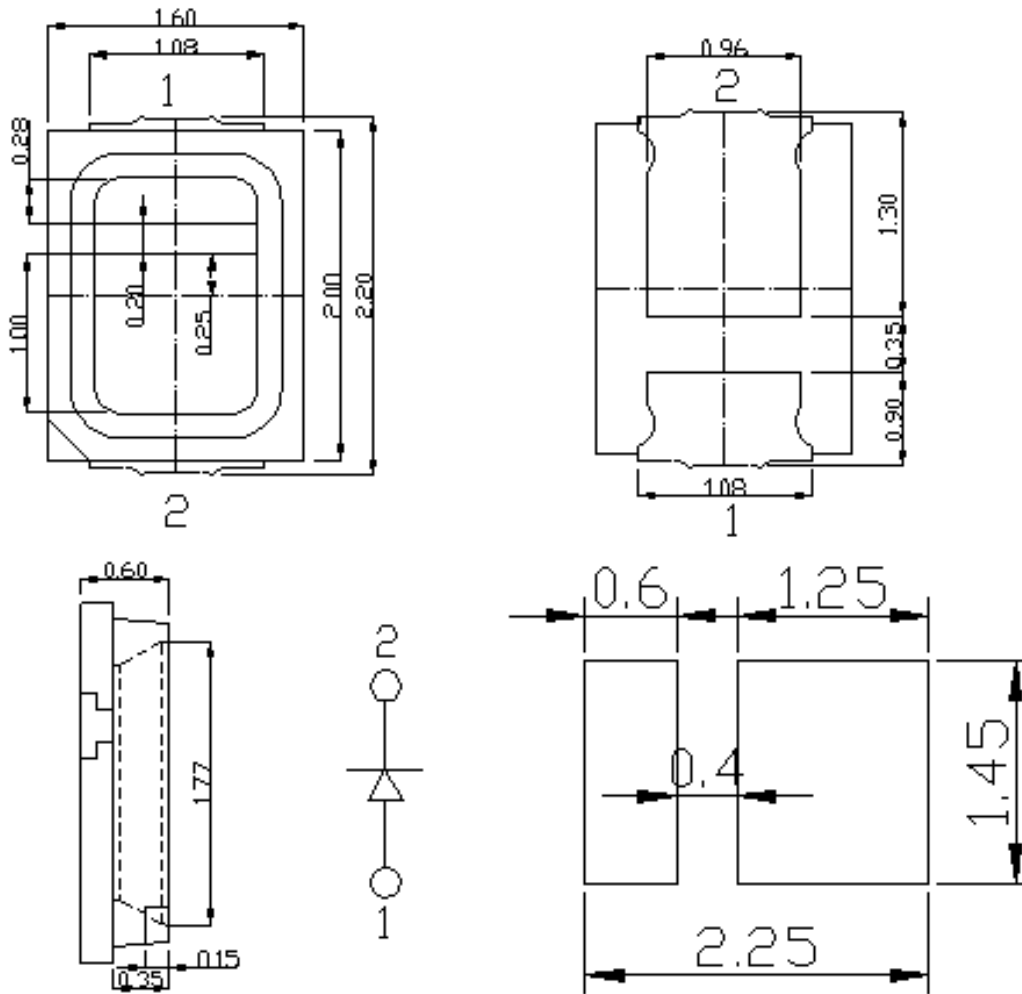
Parameter	Symbol	Value	Unit
Power dissipation	Pd	204	mW
Forward current	IF	60	mA
Reverse voltage	VR	5	V
Operating temperature range	Top	-20 ~+80	°C
Storage temperature range	Tstg	-40 ~+100	°C
Peak pulsing current (1/8 duty f=1kHz)	I <sub>fp</sub>	100	mA

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## PACKAGING DIMENSIONS



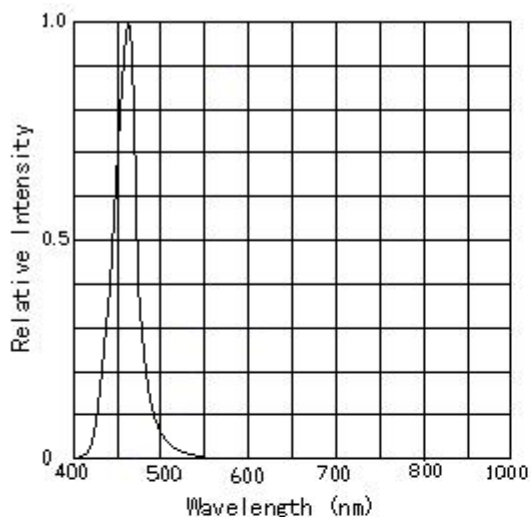
### NOTES :

1. All dimensions are in millimeters (inches) ;
2. Tolerances are  $\pm 0.2\text{mm}$  (0.008inch) unless otherwise noted .

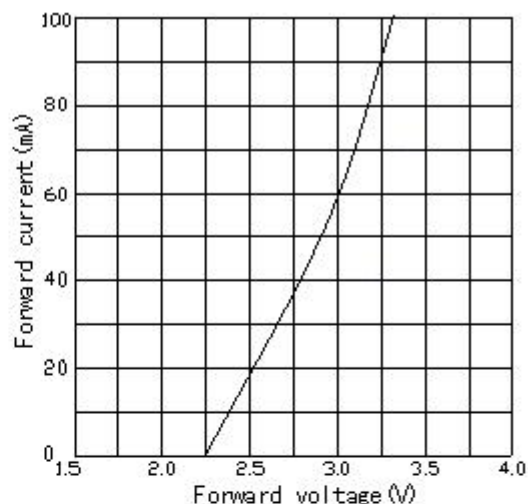


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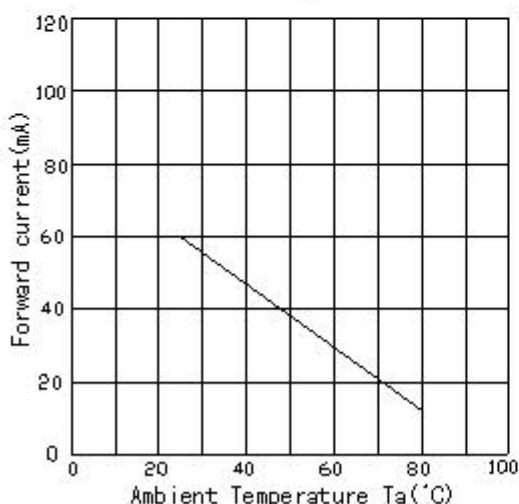
## Typical Electro-Optical Characteristics Curve:



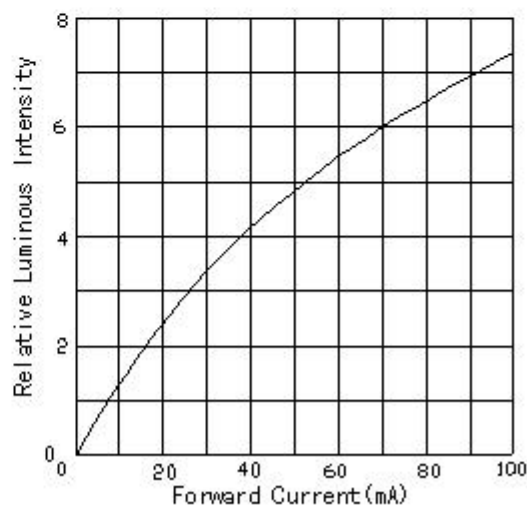
Relative Intensity vs. Wavelength



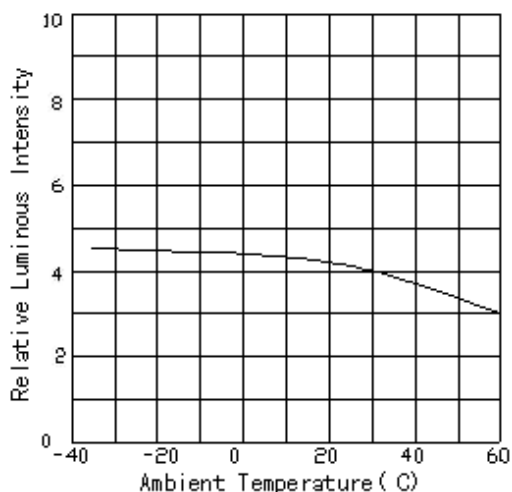
Forward current vs. Forward voltage



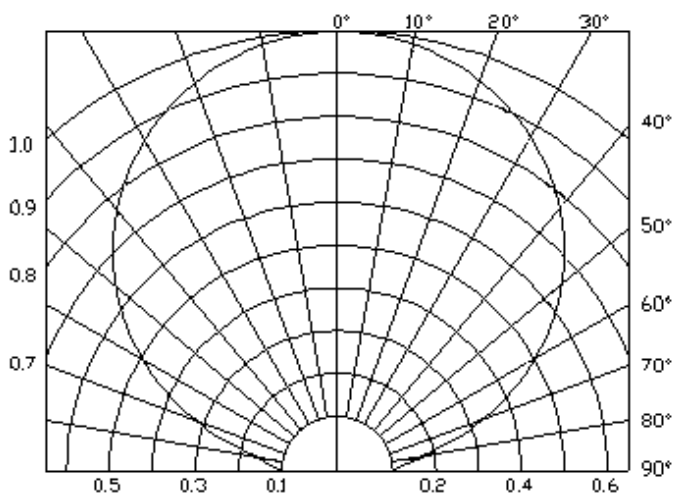
Forward current Derating Curve



Relative Luminous Intensity vs. Forward Current



Luminous Intensity vs. Ambient Temperature



Radiation Diagram



## Reliability Test Items And Conditions

實驗項目 Test Items	參考標準 Reference	實驗條件 Test Conditions	時間 Time	樣品數 Quantity	判據 Criterion
冷熱衝擊 Thermal Shock	MIL-STD-202G	-20°C (30min) -80°C (30min)	100迴圈 100 Cycles	22	0/22
濕熱迴圈 Temperature And Humidity Cyclic	JEITA ED-4701 200 203	-10°C~65°C ; 0%~90%RH	10迴圈 10cycles	22	0/22
高溫儲存 High Temperature Storage	JEITA ED -4071 200 201	Ta=80°C	1000H	22	0/22
低溫儲存 Low Temperature Storage	JEITA ED -4071 200 202	Ta=-20°C	1000H	22	0/22
高溫高濕儲存 High Temperature High Humidity Storage	JEITA ED -4071 100 103	Ta=60°C ; RH=90%	1000H	22	0/22
高溫壽命 High Temperature Life Test	JESD22-A108D	Ta=80°C	1000H	22	0/22
常溫壽命試驗 Life Test	JESD22-A108D	Ta=25°C IF=60mA	1000H	22	0/22
耐焊接熱 Resistance to Soldering Heat	GB/T 4937,II · 2.2&2.3	Tsol*=(240±5)°C10s ecs	2次 2 times	22	0/22

## 失效判斷標準 Criteria For Judging Damage

測試項目 Test Items	符號 Symbol	測試條件 Test Conditions	判定標準 Criteria For Judging Damage
正向電壓 Forward Voltage	V <sub>F</sub>	I <sub>F</sub> =I <sub>FT</sub>	初始值±10% Initial Data±10%
反向電流 Reverse Current	I <sub>R</sub>	V <sub>R</sub> =5V	I <sub>R</sub> ≤10uA
光強 Luminous Intensity	I <sub>V</sub>	I <sub>F</sub> =I <sub>FT</sub>	平均I <sub>V</sub> 衰減≤30% ; 單個I <sub>V</sub> 衰減≤50% Average I <sub>V</sub> degradation≤30% ; Single LED I <sub>V</sub> degradation≤50%
耐焊接熱 Resistance to Soldering Heat			材料內部無裂痕、無材料間爆裂、剝離、無 死燈 Material without internal cracks, no material between stripped, no dead light



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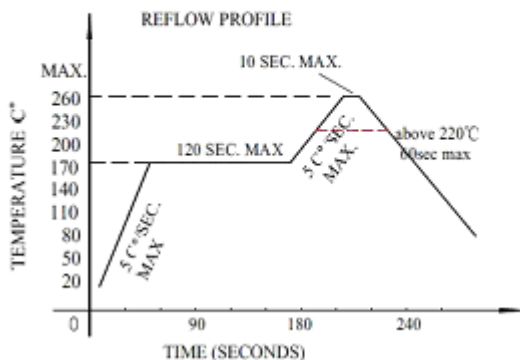
\*注：Tsol-錫液溫度 \*Note TsoI-Temperature of tin liquid

<b>Precautions For Use :</b>
<b>Over - current - proof</b>
Customer must apply resistors for protection, otherwise slight voltage shift will cause big current change ( Burn out will happen )
<b>Storage</b>
1. The operation of temperature and R.H. are : 5°C ~30°C , 60%R.H. Max.
2. Once the package is opened, the products should be used within a week. Otherwise, they should be kept in a dampproof box with desiccating regent. Considering the tape life, we suggest our customers to use our products within 1.5 year ( from production date ) .
3. It's recommended to bake before soldering when the package is unsealed after 72 hrs. The condition is : 60°C±5°C for 15hrs.

## ■ Reflow Temp/Time

### ■ Temperature-profile (Surface of circuit board)

Use the following conditions shown in the figure.



### NOTES:

1. We recommend the reflow temperature 245°C(±5°C).the maximum soldering temperature should be limited to 260°C.
2. dont cause stress to the epoxy resin while it is exposed to high temperature.
3. Number of reflow process shall be 2 times or less.

### ■Soldering iron

Basic spec is □ 5sec when 260°C. If temperature is higher, time should be shorter

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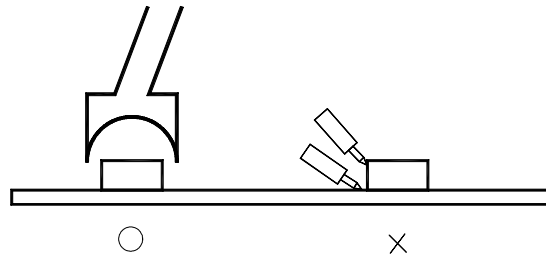
(+10°C → -1sec).Power dissipation of iron should be smaller than 20W, and temperatures should be controllable .Surface temperature of the device should be under 230°C .



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## ■ Rework

1. Customer must finish rework within 5 sec under 260°C.
2. The head of iron can not touch copper foil
3. Twin-head type is preferred.

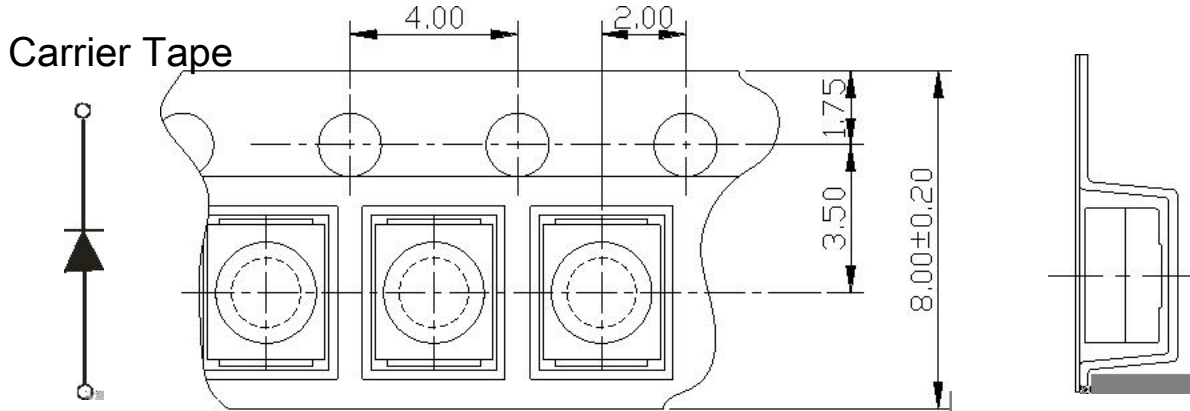


- Avoid rubbing or scraping the resin by any object, during high temperature, for example reflow 、solder etc.



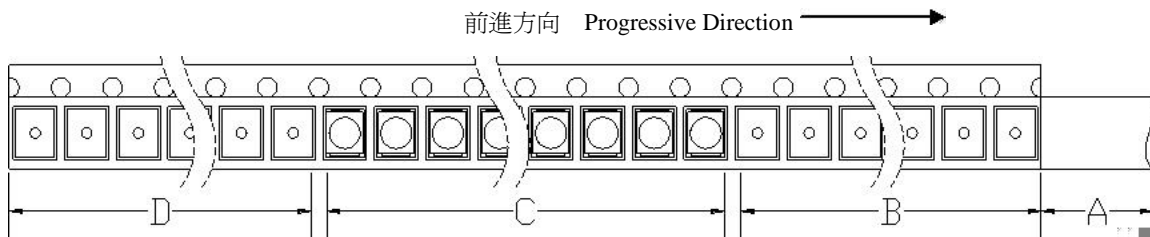
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## ■Dimensions of Tape (Unit: mm)



单位：mm，未注公差：±0.1 mm  
All dimensions in mm, tolerances unless mentioned is ±0.1 mm.

## ◇ Details Of Carrier Tape



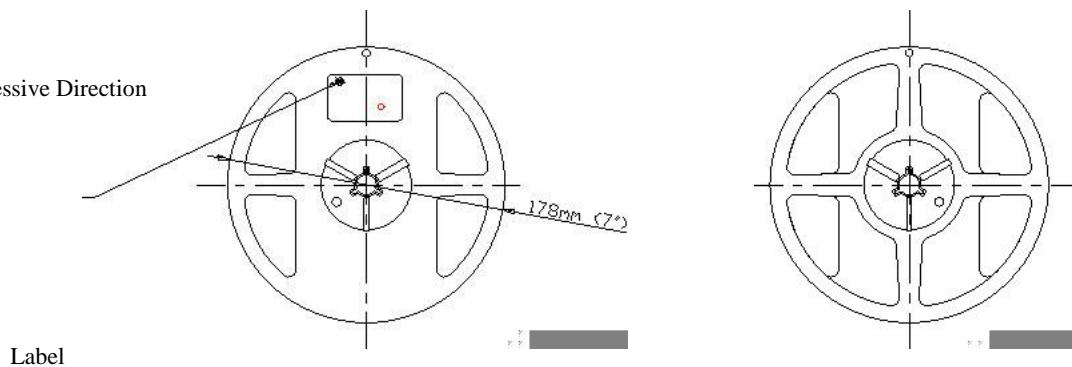
A：蓋帶，300 mm；B：引導，空帶，200mm；C：編載產品 4000只；D：尾部，空帶，200mm

A: Top Cover Tape, 300mm; B: Leader, Empty, 200mm; C: 4000 Lamps Loaded;

## ◇ Reel Dimension

D: Trailer, Empty, 200mm.

前進方向 Progressive Direction



## ■Note



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1. Empty component pockets are sealed with top cover tape;
2. The maximum number of missing lamps is two.
3. 4,000 pcs/Reel