

# YETDA INDUSTRY LTD.

## Technical Data Sheet

**MODEL NO : 177UR/ANG/ANB4**

0807Package 2.0\*1.8\*1.1mm Chip LEDs

**Features :**

- Package in 8mm tape on 7" diameter reel
- Compatible with automatic placement equipment
- Compatible with reflow solder process

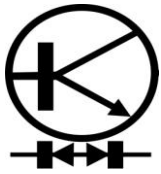
**Applications :**

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

Dice material	Emitted color	Lens Color
AlGaInP/GaAs	Red	Water transparent
InGaN	Green	
InGaN	Blue	

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

Parameter	Test Condition	Symbol	Value			Unit
			Min	Typ	Max	
Spectral half bandwidth	Red Green Blue If=20mA	$\Delta\lambda$		20		nm
				34		
				25		
Dominant wavelength	Red Green Blue If=20mA	$\lambda_D$	615	620	630	nm
			515	520	525	
			460	465	470	
Forward voltage	Red Green Blue If=20mA	V <sub>F</sub>	1.7	2.0	2.5	V
			2.8	3.1	3.7	
			2.8	3.1	3.7	
Luminous intensity	Red Green Blue If=20mA	I <sub>v</sub>	100	180	320	mcd
			320	600	1000	
			50	95	160	
Viewing angle at 50% I <sub>v</sub>	If=10mA	2θ 1/2		140		Deg
Reverse current	V <sub>R</sub> =5V	I <sub>R</sub>			10	μA

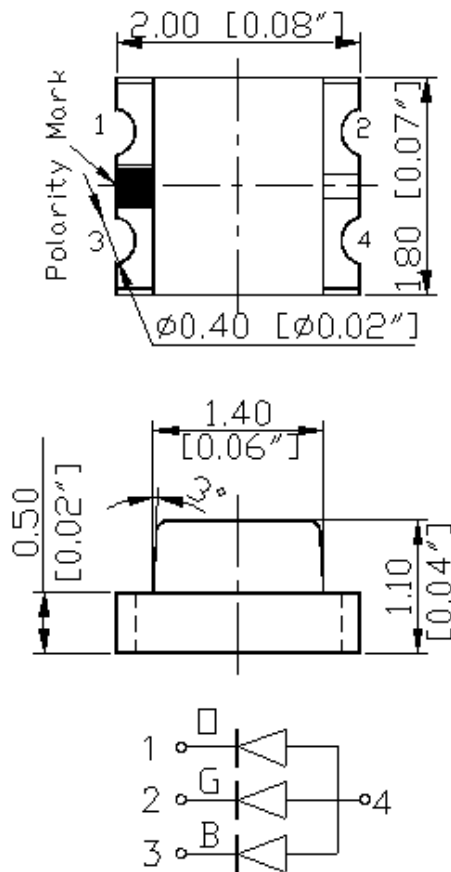


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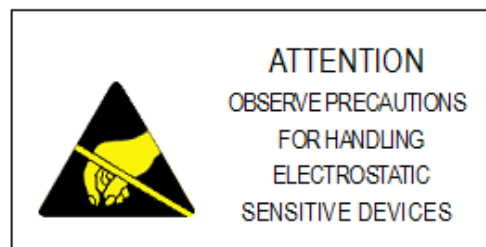
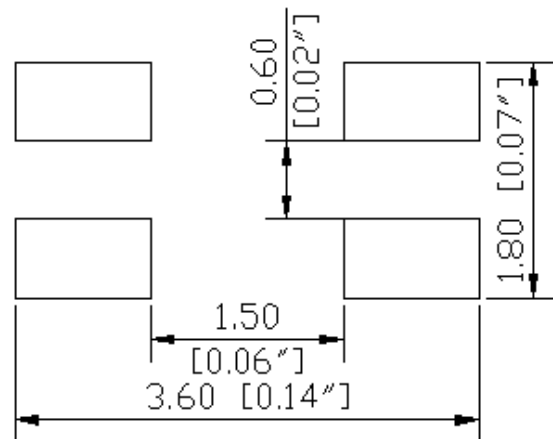
Absolute Maximum Ratings(Ta=25°C)

Parameter	Symbol	Value			Unit
		R	G	B	
Power dissipation	Pd	75	111	111	mW
Forward current	I <sub>F</sub>	30			mA
Reverse voltage	V <sub>R</sub>	5			V
Operating temperature range	T <sub>op</sub>	-40 ~+80			°C
Storage temperature range	T <sub>stg</sub>	-40 ~+85			°C
Peak pulsing current (1/8 duty f=1kHz)	I <sub>FP</sub>	125			mA

## PACKAGING DIMENSIONS (mm):

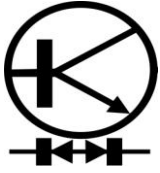


## RECOMMEND PAD LAYOUT



## NOTES:

1. All dimensions are in millimeters (inches);
2. Tolerances are  $\pm 0.1\text{mm}$  (0.004inch) unless otherwise noted.



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## Typical Electro-Optical Characteristics Curve:Red

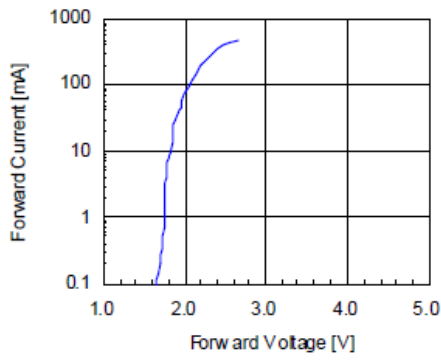


Fig 3. Forward Voltage vs. Temperature

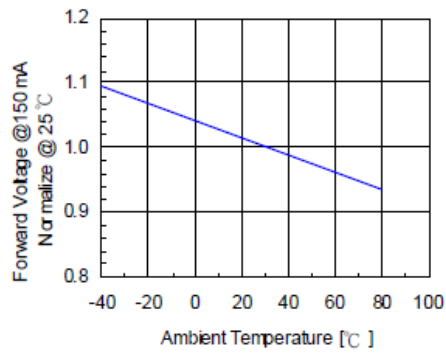


Fig 5. Relative Intensity vs. Wavelength

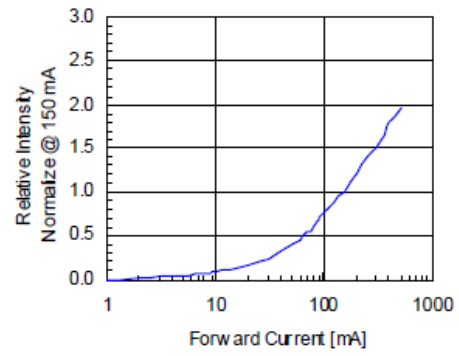
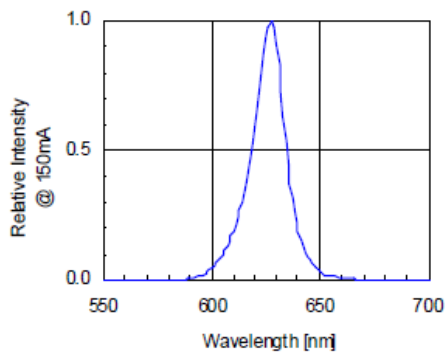
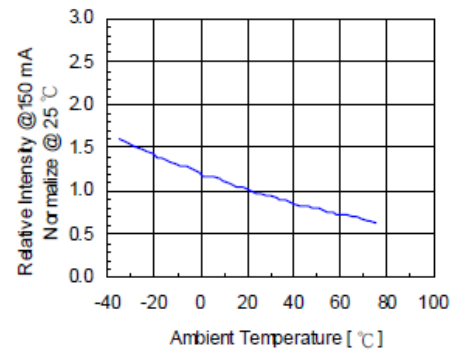


Fig 4. Relative Intensity vs. Temperature





## Typical Electro-Optical Characteristics Curve: Green

Fig 1. Forward Current vs. Forward Voltage

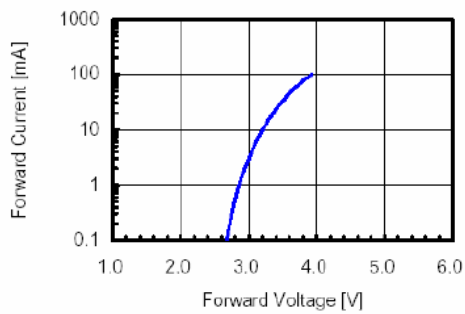


Fig 2. Relative Intensity vs. Forward Current

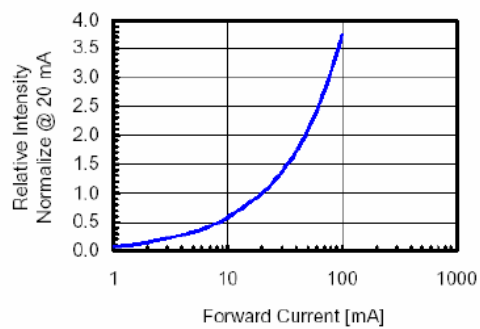


Fig 3. Forward Voltage vs. Temperature

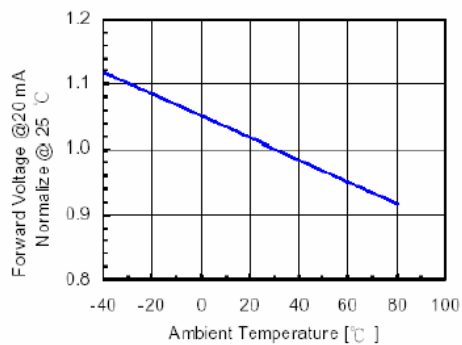


Fig 4. Relative Intensity vs. Temperature

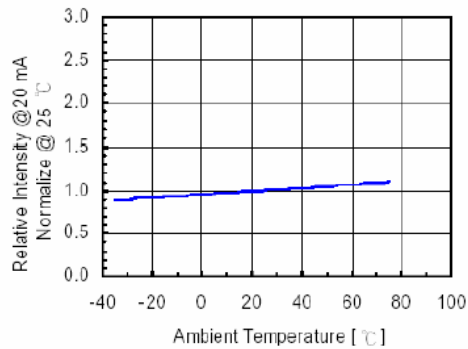
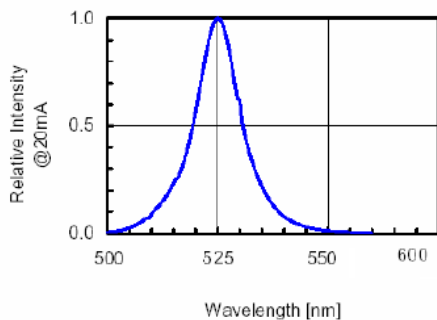


Fig 5. Relative Intensity vs. Wavelength





## Typical Electro-Optical Characteristics Curve: Blue

Fig 1. Forward Current vs. Forward Voltage

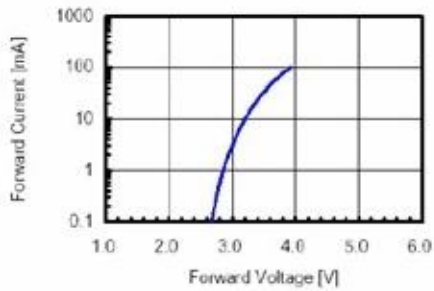


Fig 2. Relative Intensity vs. Forward Current

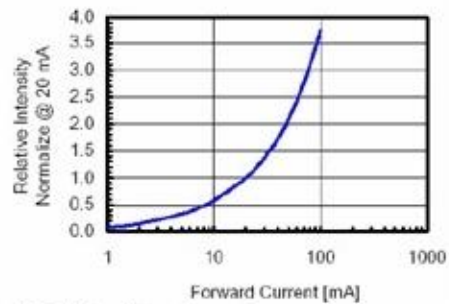


Fig 3. Forward Voltage vs. Temperature

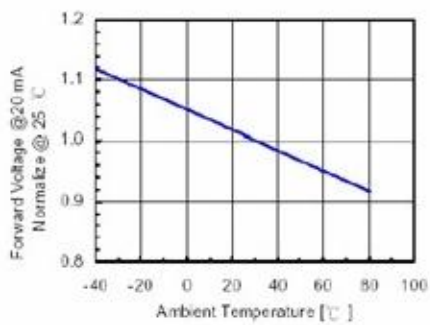


Fig 4. Relative Intensity vs. Temperature

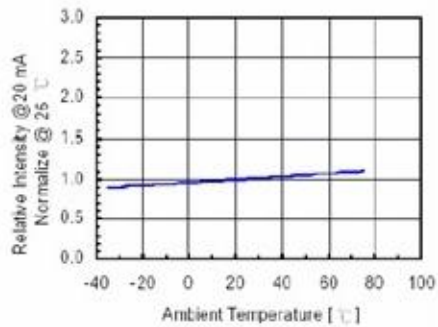
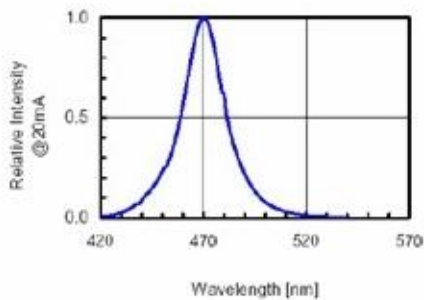


Fig 5. Relative Intensity vs. Wavelength





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## Precautions For Use :

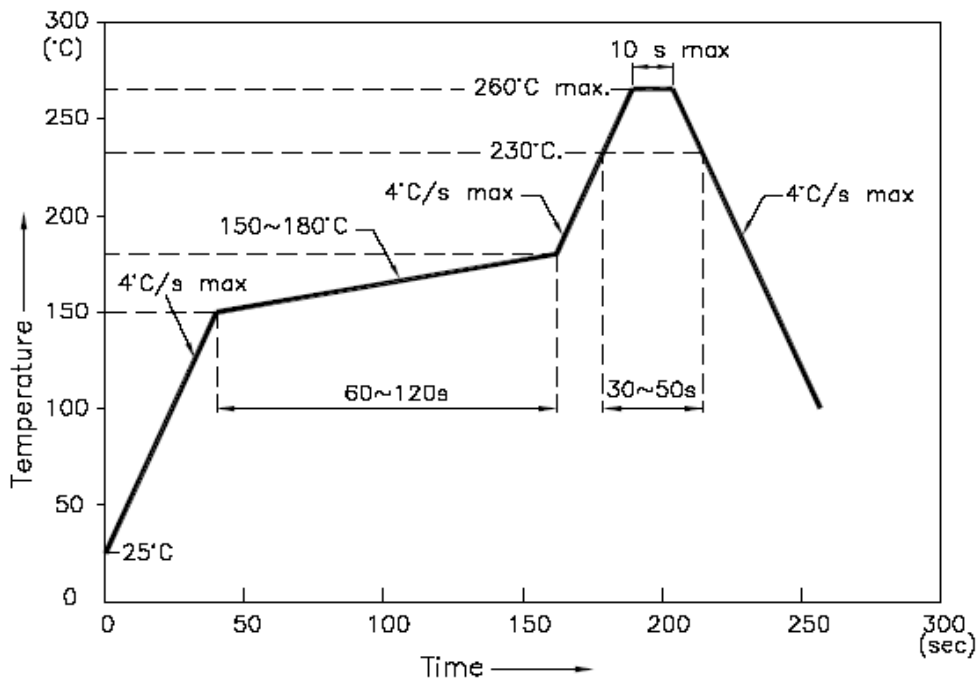
### Over - current - proof

Customer must apply resistors for protection, otherwise slight voltage shift will cause big current change ( Burn out will happen )

### Storage

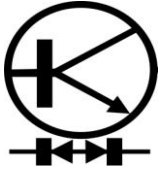
1. The operation of temperature and R.H. are :  $5^{\circ}\text{C} \sim 30^{\circ}\text{C}$  , 60%R.H. Max.
2. Once the package is opened, the products should be used within a week. Otherwise, they should be kept in a dampproof box with desiccating reagent. Considering the tape life, we suggest our customers 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 :  $60^{\circ}\text{C} \pm 5^{\circ}\text{C}$  for 15hrs.

## ■ Reflow Temp/Time



### NOTES:

1. We recommend the reflow temperature  $245^{\circ}\text{C} (\pm 5^{\circ}\text{C})$ . the maximum soldering temperature should be limited to  $260^{\circ}\text{C}$ .
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.



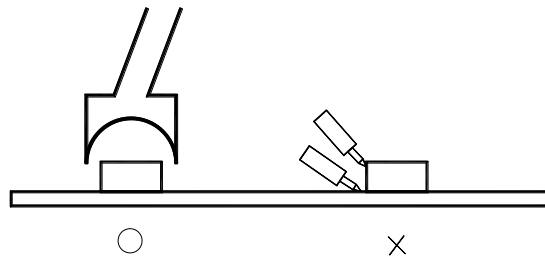
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## ■Soldering iron

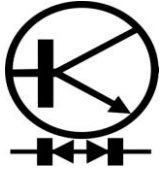
Basic spec is  $\leq 5\text{sec}$  when  $260^{\circ}\text{C}$ . If temperature is higher, time should be shorter ( $+10^{\circ}\text{C} \rightarrow -1\text{sec}$ ). Power dissipation of iron should be smaller than  $20\text{W}$ , and temperatures should be controllable. Surface temperature of the device should be under  $230^{\circ}\text{C}$ .

## ■Rework

1. Customer must finish rework within 5 sec under  $260^{\circ}\text{C}$ .
2. The head of iron can not touch copper foil
3. Twin-head type is preferred.

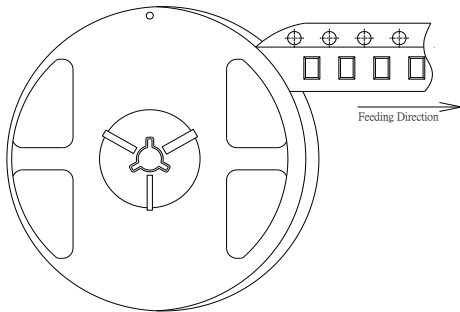


■ Avoid rubbing or scraping the resin by any object, during high temperature, for example reflow 、 solder etc.

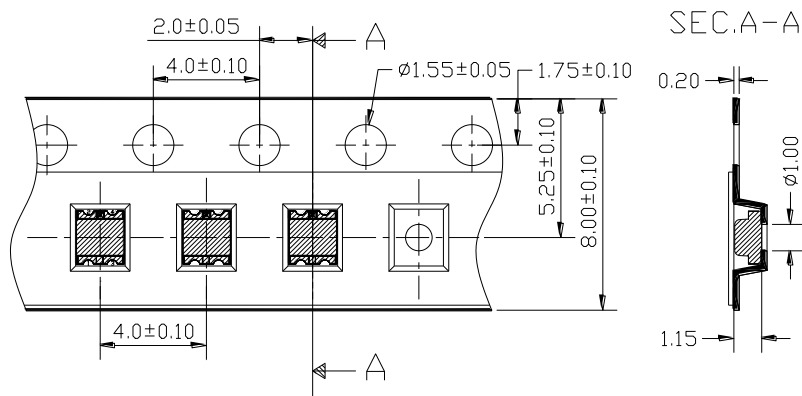


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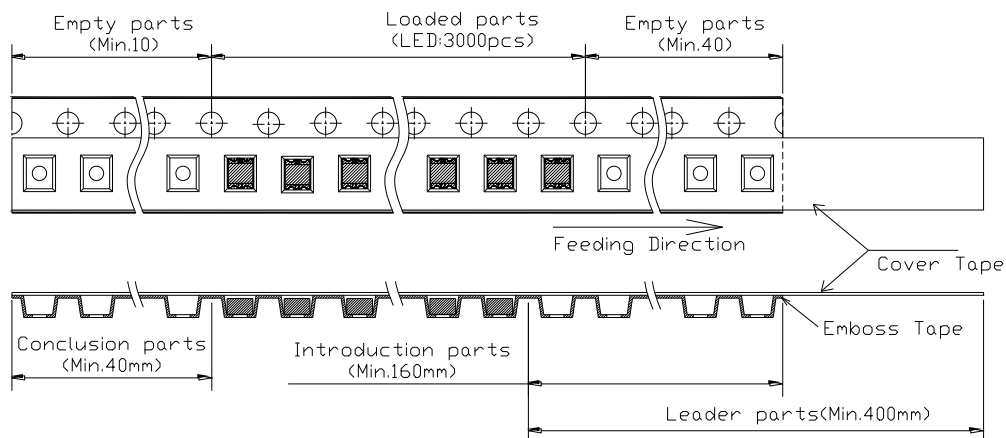
## ■Feeding Direction



## ■Dimensions of Tape (Unit: mm)



## ■Arrangement of Tape



## ■Note

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