

YETDA INDUSTRY LTD.

Technical Data Sheet

MODEL NO : 178R2F

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

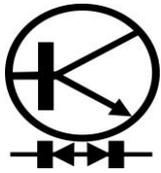
Dice material	Emitted color	Lens Color
AlGaInP	Red	Diffused

Electrical/Optical Characteristics(Ta=25°C)

Parameter	Test Condition	Symbol	Value			Unit
			Min	Typ	Max	
Spectral half bandwidth	I _F =20mA	$\Delta \lambda$		30		nm
Dominant wavelength	I _F =20mA	λ_D	630		640	nm
Forward voltage	I _F =20mA	V _F	2.0		2.2	V
Luminous intensity	I _F =20mA	I _v	15		30	mcd
Viewing angle at 50% I _v	I _F =20mA	2 θ 1/2		170		Deg
Reverse current	V _R =5V	I _R			10	μ A

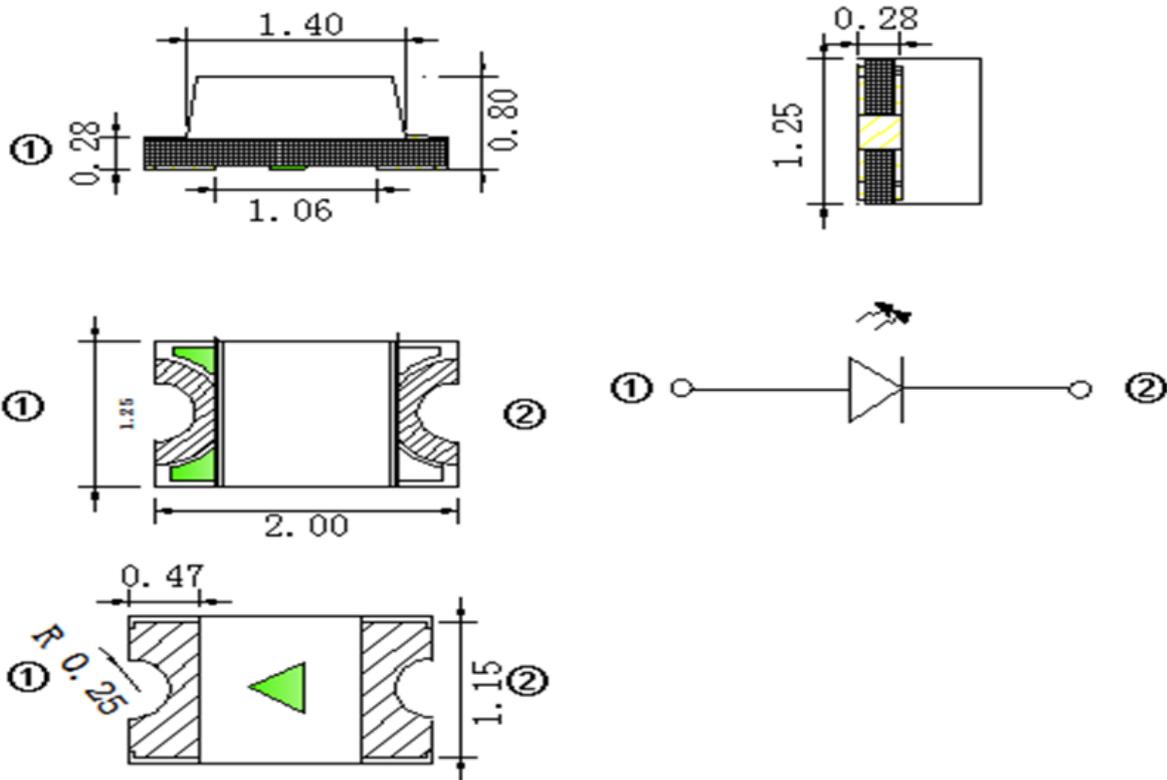
Absolute Maximum Ratings(Ta=25°C)

Parameter	Symbol	Value	Unit
Power dissipation	P _d	72	mW
Forward current	I _F	20	mA
Reverse voltage	V _R	5	V
Operating temperature range	T _{op}	-40 ~+80	°C
Storage temperature range	T _{stg}	-40 ~+85	°C
Peak pulsing current (1/8 duty f=1kHz)	I _{FP}	125	mA

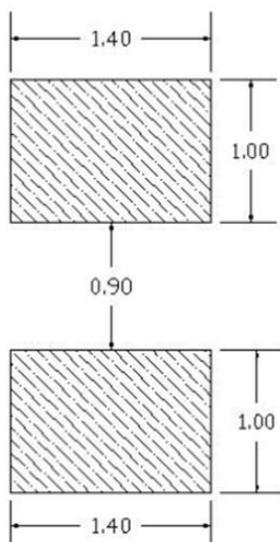


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PACKAGING DIMENSIONS (mm):



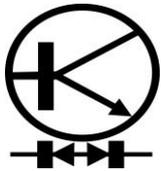
RECOMMAND PAD LAYOUT:



Notes:

1. All dimensions are in millimeters (inches);
2. Tolerances are ± 0.1 mm (0.004inch) unless otherwise noted.

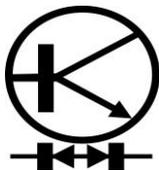
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Typical optical characteristics curves 典型光学特性曲线

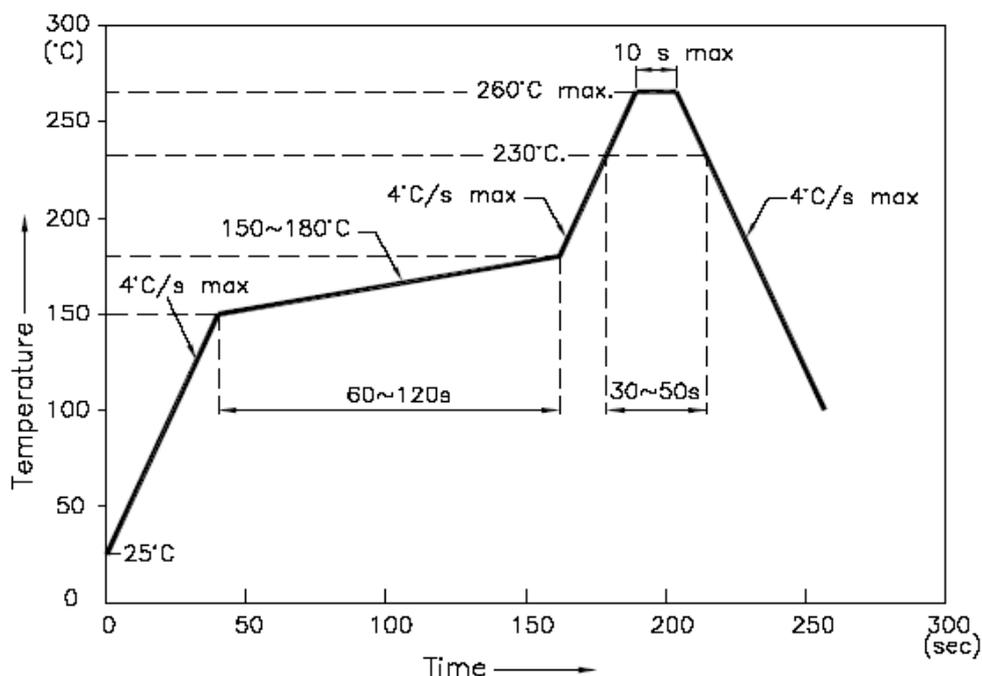
<p>Ambient Temperature vs. Forward Current 环境温度与正向电流特性曲线</p>		<p>Forward Current VS. Relative Intensity 正向电流与相对光强特性曲线</p>	
Forward Current(mA)		Relative luminous Intensity	
	Soldering Temperature °C		Forward Current(mA)
<p>Forward Voltage VS. Forward Current 正向电压与正向电流特性曲线</p>		<p>Ambient Temperature VS. Relative Intensity 环境温度与相对光强特性曲线</p>	
Forward Current(mA)		Relative luminous Intensity	
	Forward Voltage(V)		Ambient Temperature t_a °C
<p>Relative spectral emission 相对光谱分布特性曲线</p>		<p>Radiation diagram 辐射图特性曲线</p>	
Relative luminous intensity			
	Wavelength(nm)		SPATIAL DISTRIBUTION



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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 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 : $60^{\circ}\text{C} \pm 5^{\circ}\text{C}$ 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°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.



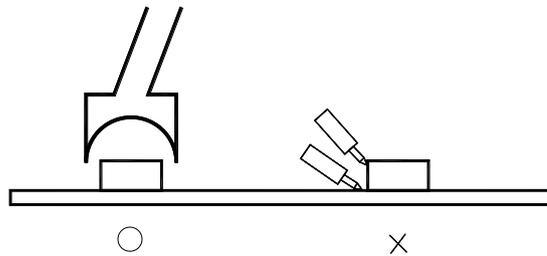
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■Soldering iron

Basic spec is $\leq 5\text{sec}$ when 260°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 20W, and temperatures should be controllable. Surface temperature of the device should be under 230°C .

■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.