



VISIBLE LED

1.ELEMENT APPEARANCE

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DATE:2021.03.24

Model No.	Material		Lighting Color	Resin Color
RT-7020YR-CT	R	AlGaInP	Red	Water Clear
	Y	AlGaInP	Yellow	

2.ABSOLUTE MAXIMUM RATINGS AT Ta=25°C

Characteristic	Symbol	Rating	Unit
Forward direct current	IFM	150	mA
Reverse voltage	VRM	5	V
Operating temperature	Topr	-25 to +80	°C
Storage temperature	Tstg	-30 to +85	°C
Power dissipation	Pd	860	mW

3.ELECTRO-OPTICAL CHARACTERISTICS AT Ta=25°C

Characteristic	Symbol	Condition		Min.	Typ.	Max.	Unit
		IF	R				
Luminous intensity	Iv	IF=150mA	R	15		20	LM
		IF=150mA	Y	13		18	
Forward voltage	VF	IF=150mA	R	2.0		2.4	V
		IF=150mA	Y	2.0		2.4	
Reverse current	IR	VR=5V				10	μ A
Dominant wavelength	λ d	IF=150mA	R	620	-	625	nm
		IF=150mA	Y	590	-	595	
Spectral line half width	Δ λ	IF=150mA	R		20		nm
		IF=150mA	Y		30		
Viewing half angle	2θ 1/2	IF=150mA	R		120		deg.
		IF=150mA	Y		120		

Luminous Intensity Measurement allowance is ±15%

Forward voltage Measurement allowance is ±0.05V

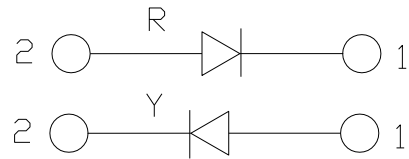
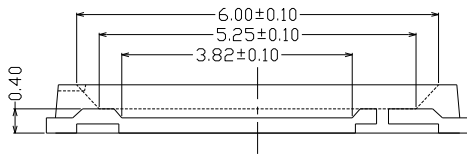
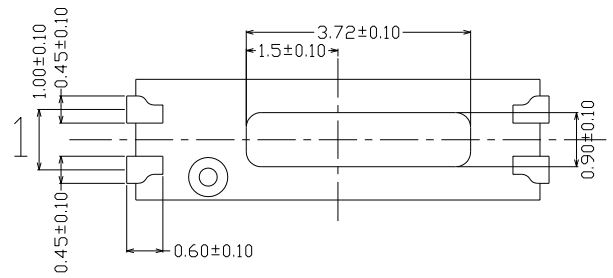
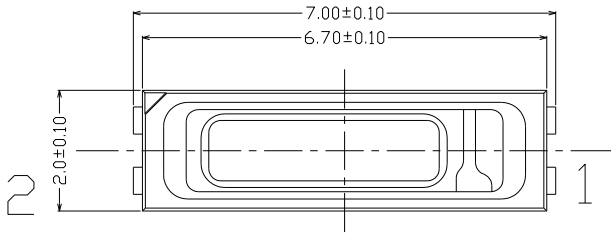
Emission wavelength Measurement allowance is ±0.5nm



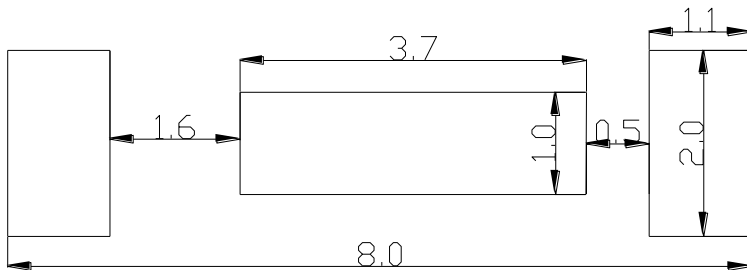
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4.DIMENSIONS UNIT : m/m TOLERANCE : $\pm 0.25\text{mm}$

Package Dimensions



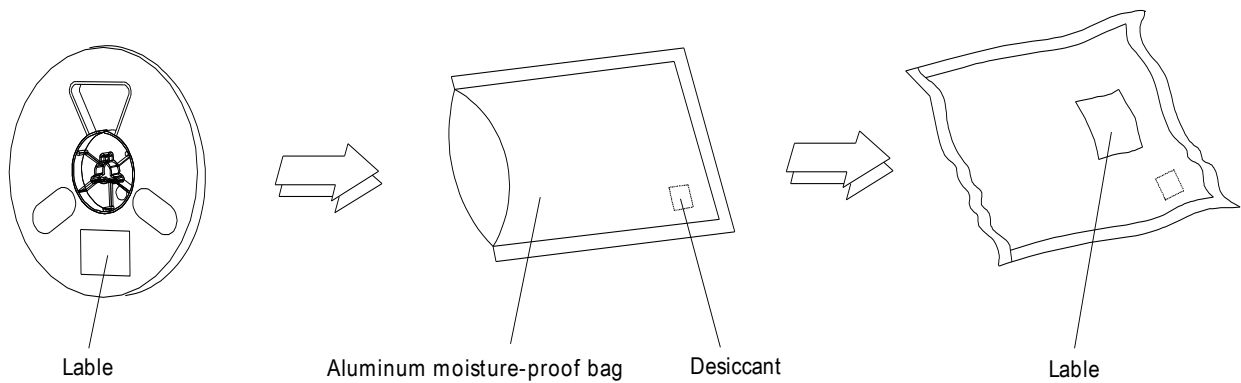
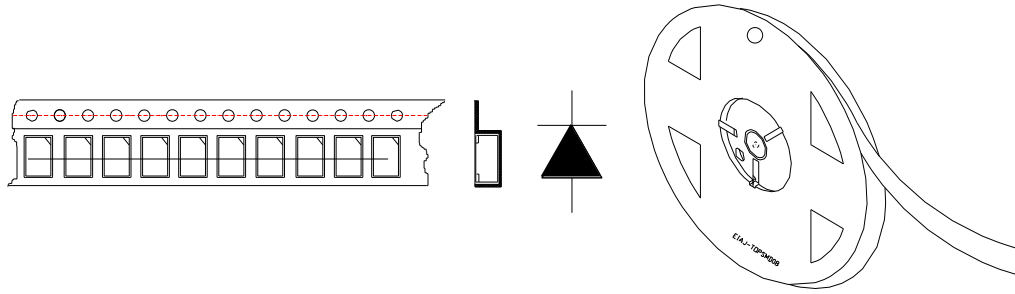
Recommended Soldering Patter





5. REEL:

Carrier Tape Dimensions: Loaded Quantity 4000 pcs Per Reel

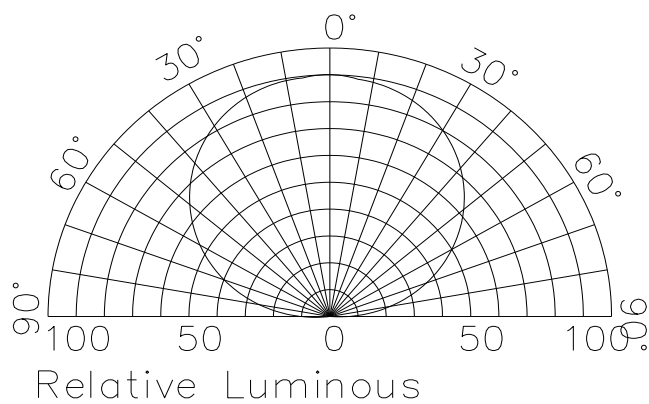
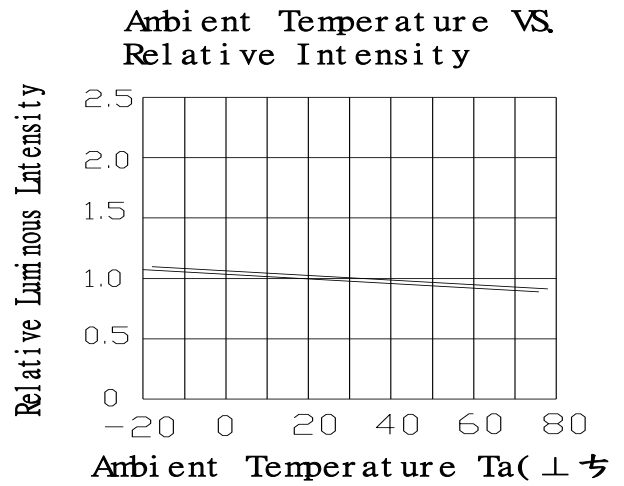
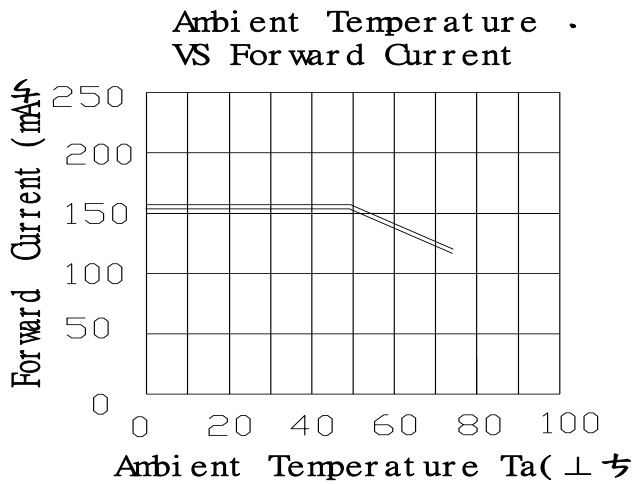
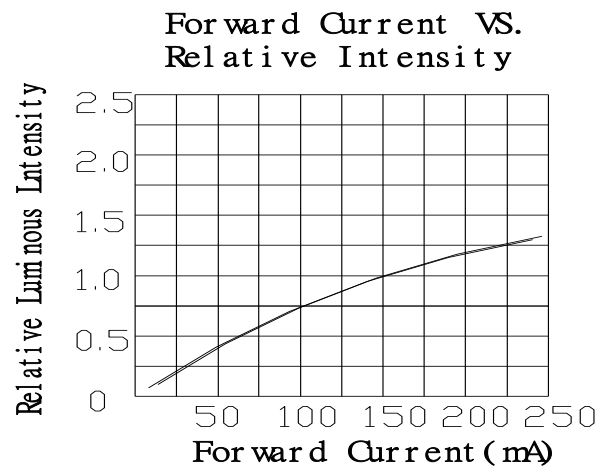
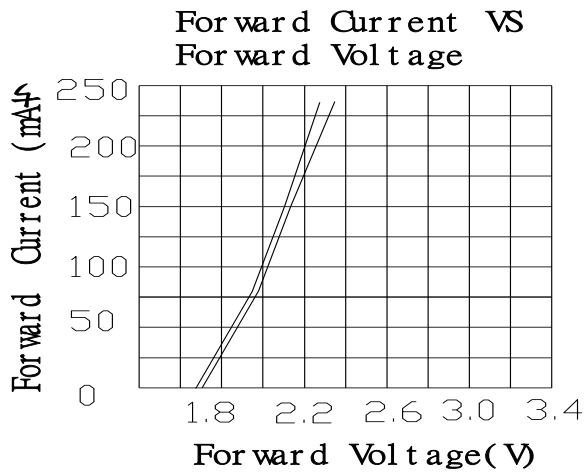




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Soldering Profile

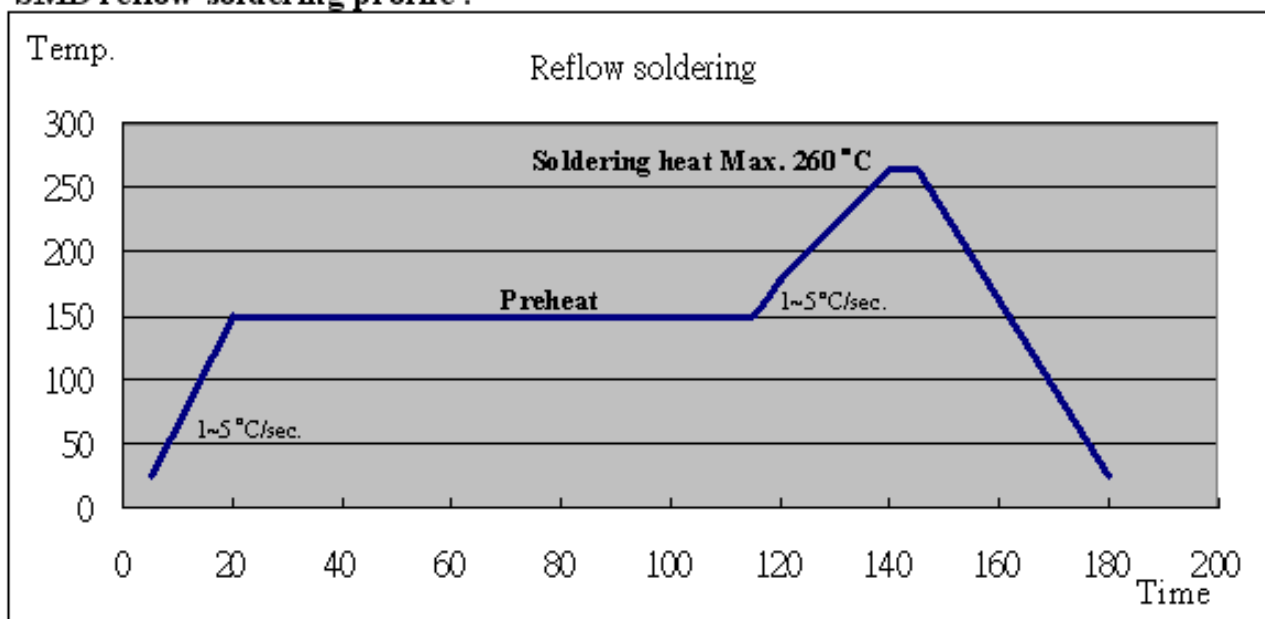
Compliant with the following condition :

(1) Leaded quantity of product below 100 ppm

(2) Lead-free process

Shape	Lead Frame Type / Holder Type
Hand soldering	1.Temp.at tip of iron : 300 °C MAX. 2.Soldering time : 3 sec MAX. 3.Distance : 3 mm MIN (from solder joint to case)
DIP soldering	1.Preheat temp : 100 °C MAX , 60 sec MAX. 2.Bath temp : 260 °C MAX. 3.Bath time : 5 sec MAX. 4.Distance : 3 mm MIN (From solder joint to case).
Reflow soldering	NO
Shape	SMD Type
Hand soldering	1.Temp.at tip of iron : 300 °C MAX. 2.Soldering time : 3 sec MAX.
DIP soldering	1.Preheat temp. : 120-150 °C , 60-120 sec. 2.Bath temp. : 260 °C MAX. 3.Bath time : 5 sec
Reflow soldering	1.Preheat temp. : 150-180 °C , 120 sec MAX. 2.Peak temp. : 260 °C MAX. 3.Peak time : 10 sec MAX.

SMD reflow soldering profile :





Reliability Test Items

CONDITIONS :

The reliability of products shall be satisfied with items listed below.

NO.	<u>Item</u>	Condition	Time/Cycle	Number of Damaged
1	Soldering Heat Test	260°C	5 sec	0/60
2	Thermal Shock	0°C (5min) ~100°C (5min)	20 cycle	0/60
3	High Temp. Storage	100°C	1000 Hrs	0/60
4	Low Temp. Storage	-25°C	1000 Hrs	0/60
5	Temperature Cycle Test	-25°C ~85°C	100 Cycles, 200Hrs	0/60
6	High Temp. High Humidity Test	85°C , 85% RH	1000Hrs	0/60
7	DC Operation Life Test	IF=20mA	1000Hrs	0/60



Instruction for SMD

The packaging material for SMD is PPA, it's a kind material which is moisture regain. If it's working under the high temperature the SMD glue could be divided from PPA due to the steam issue.

It will cause the dark light, flicker problem even the died light,

Storage condition:

CONDITION	TEMPERATURE	RELATIVE HUMIDITY	LIFE LIMITS
SMD with taping	$\leq 40^{\circ}\text{C}$	$\leq 85\%$	1 year
Package opened	$\leq 30^{\circ}\text{C}$	$\leq 60\%$	24 hours

- It need processing under dehumidifier procedure if it was opened over 24 hours, in case of the SMD body divide from PPA materials of the lead frame.

Baking condition: $60^{\circ}\text{C} \pm 5^{\circ}\text{C} / 24\text{hr}$.

- Please be aware of the temperature for storage, especially under the high wet environment because it is easy to action in freeze and solidify condition.

Due to the plating materials under the lead frame so please storage the LED in to the nitrogen space, in case of any rusty problem occur.