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SURFACE MOUNT LED TAPE AND REEL



Lead-Free Parts

**PRELIMINARY**

This is just a preliminary design  
to let you evaluate the concept

AM-LG-2214HYS-T20

# DATA SHEET

DOC. NO : IMQW0905-AM-LG-2214HYS-T20

REV. : A

DATE : 14 - Aug. - 2018

## Features:

1. White SMD with PLCC2 package.
2. Top view LED Package & Dimensions : 2.2x1.4x1.3 (unit:mm)
3. Luminous color:yellow(Wd:587nm)
4. Viewing angle:120°
5. Compliant with RoHS and REACH

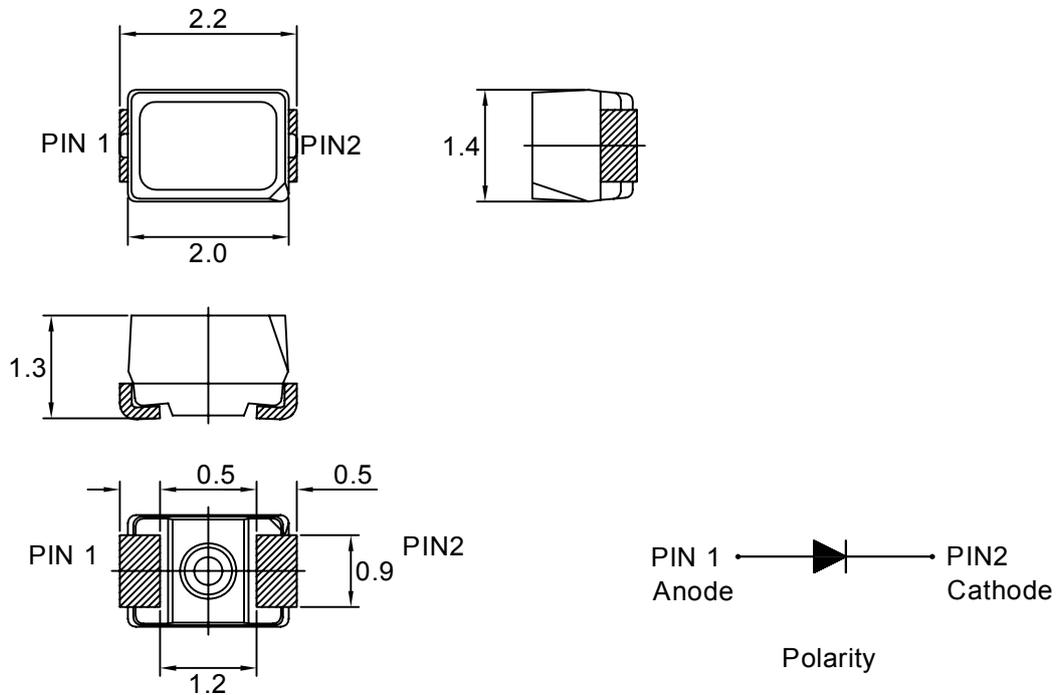
## Application:

1. Automotive parts
2. Backlight
3. Interior optical indicator
4. General applications

## Device Selection Guide:

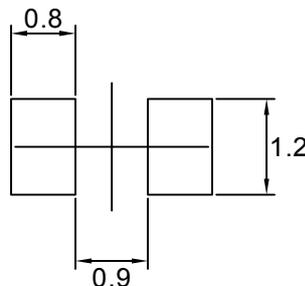
PART NO	MATERIAL	COLOR	
		Emitted	Lens
AM-LG-2214HYS-T20	AlGaInP	Yellow	Water Clear

## Package Dimensions



Note : 1.All dimension are in millimeter tolerance is  $\pm 0.2$ mm unless otherwise noted.  
2.Specifications are subject to change without notice.

## Recommended Soldering Pad Dimensions



Note : The tolerances unless mentioned is  $\pm 0.1$ mm. Unit=mm.

### Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Ratings	UNIT
Forward Current	IF	30	mA
Peak Forward Current Duty 1/10@10KHz	IFP	60	mA
Power Dissipation	PD	78	mW
Reverse Current @12V	Ir	5	μA
Electrostatic Discharge	ESD	2000	V
Operating Temperature	Topr	- 40 ~ + 100	°C
Storage Temperature	Tstg	- 40 ~ + 100	°C
LED junction Temperature	Tj	125	°C
Thermal resistance*	Rth j-s	300	K/W

### Typical Electrical & Optical Characteristics (Ta=25°C)

Items	Symbol	Min.	Typ.	Max.	UNIT	CONDITION
Luminous Intensity	Iv	140	260	450	mcd	IF=20mA
Dominant Wavelength	λD	580	587	595	nm	IF=20mA
Spectral Line Half-Width	Δλ	----	15	----	nm	IF=20mA
Forward Voltage	V <sub>F</sub>	1.7	----	2.6	V	IF=20mA
Viewing Angle	2θ 1/2	----	120	----	deg	IF=20mA

Note : 1.The forward voltage data did not including ±0.1V testing tolerance.  
 2.The luminous intensity data did not including ±15% testing tolerance.  
 3.The dominant wavelength data did not including ±1nm testing tolerance

### Luminous Intensity Classification

BIN CODE	Iv(mcd) at20mA	
	Min.	Max.
R2	140	180
S1	180	224
S2	224	280
T1	280	355
T2	355	450

### Dominant Wavelength Classification

BIN CODE	$\lambda D$ (nm) at20mA	
	Min.	Max.
Y0	580	583
Y1	583	586
Y2	586	589
Y3	589	592
Y4	592	595

## Typical Electro-Optical Characteristics Curve

Fig.1 Forward current vs. Forward Voltage

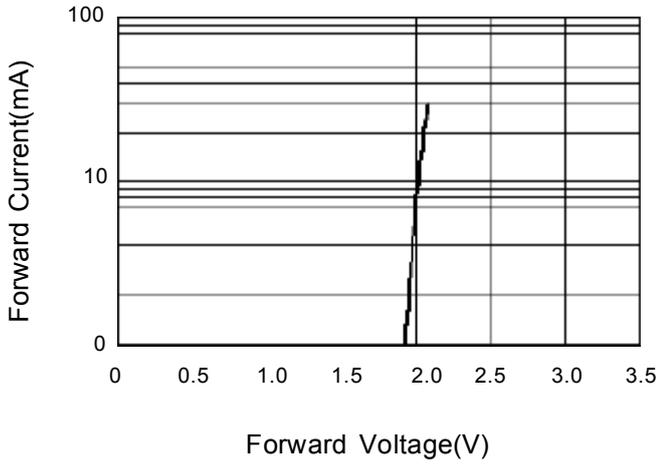


Fig.2 Luminous Intensity vs. Forward Current

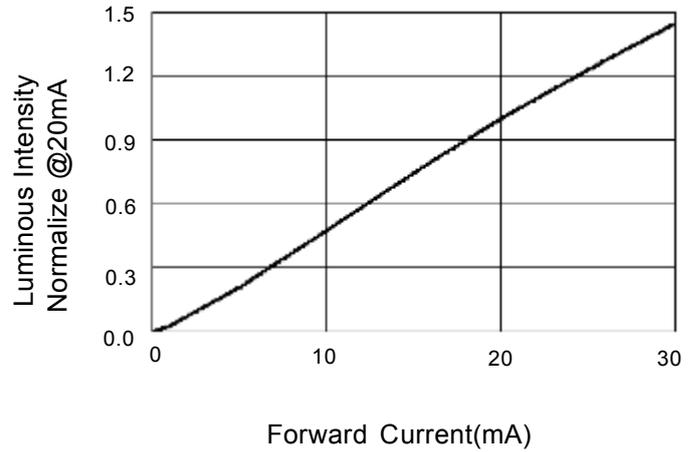


Fig.3 Forward Current vs. Temperature

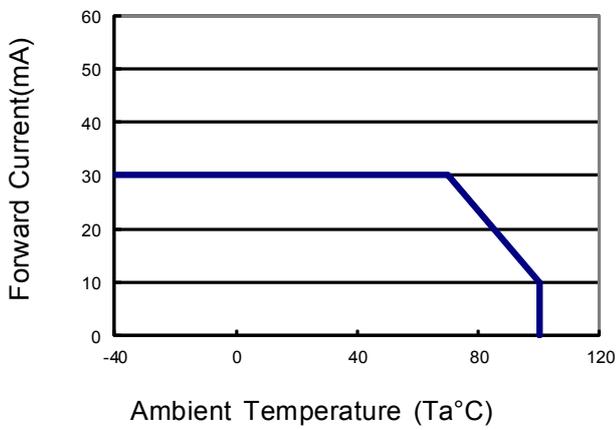


Fig.4 Luminous Intensity vs. Temperature

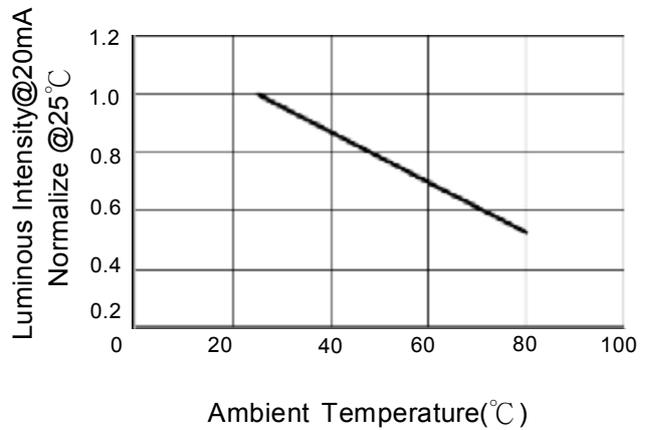


Fig.5 Relative Intensity vs. Wavelength

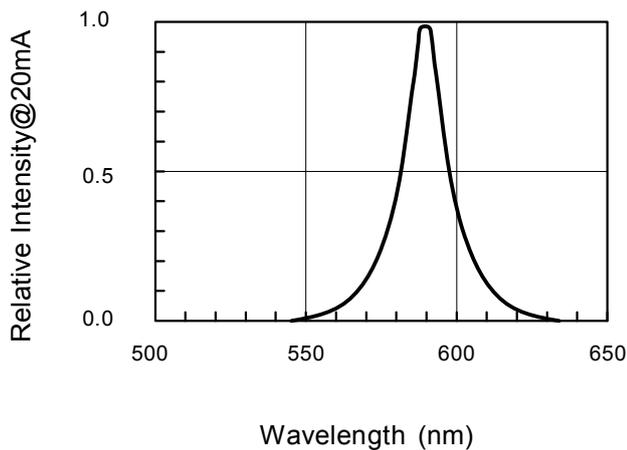
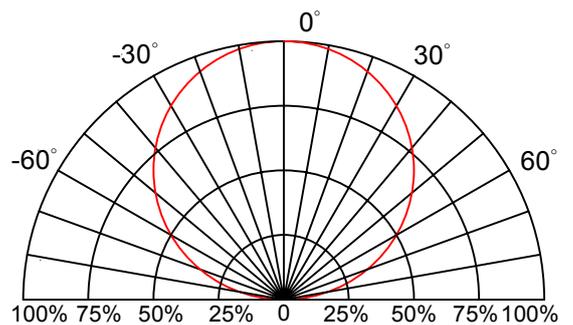
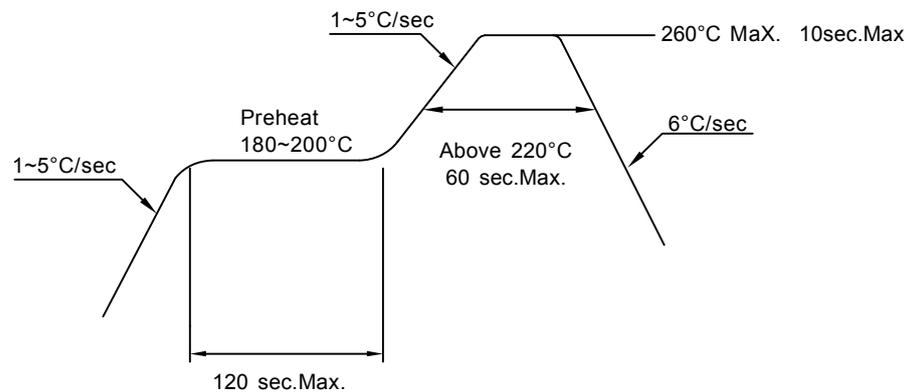


Fig.6 Directive Radiation



**Recommended Soldering Conditions****1. Hand Solder**

Basic spec is  $\leq 320^{\circ}\text{C}$  3 sec one time only.

**2. PB-Free Reflow Solder****Note:**

- 1.Reflow soldering should not be done more than two times.
- 2.When soldering,do not put stress on the LEDs during heating.
- 3.After soldering,do not warp the circuit board.

**Precautions For Use:****Storage time:**

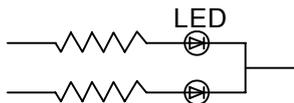
1. Calculated shelf life before opening is 12 months at  $< 30^{\circ}\text{C}$  and  $< 90\%$  relative humidity (RH)
  2. After bag is opened, devices which will be subjected to reflow soldering or other high temperature processes must be
    - a) Assembled within 168 hours in an environment of  $\leq 30^{\circ}\text{C}$  / 60% RH, or
    - b) Stored at ambient of 10% RH or less
  3. Devices are required baking before assembly if:
    - a) Humidity Indicator Card reads  $>10\%$  (for level 2a -5a) or  $>60\%$  (for level 2) at ambient temperature  $23\pm 5^{\circ}\text{C}$
    - b) 2.a) or 2.b) doesn't meet
  4. If baking is required, devices should be baked for  $>72$  hours at  $60\pm 5^{\circ}\text{C}$  / 5% RH. Performing baking only once, and using the baked devices within 72 hours.
- MSL LEVEL 3

**Drive Method:**

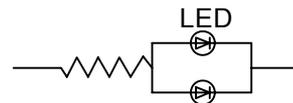
LED is a current operated device, and therefore, requires some kind of current limiting incorporated into the driver circuit. This current limiting typically takes the form of a current limiting resistor placed in series with the LED.

Consider worst case voltage variations than could occur across the current limiting resistor. The forward current should not be allowed to change by more than 40% of its desired value.

Circuit model A



Circuit model B



(A) Recommended circuit.

(B) The difference of brightness between LED could be found due to the VF-IF characteristics of LED.

**Cleaning:**

Use alcohol-based cleaning solvents such as isopropyl alcohol to clean the LED.

**ESD(Electrostatic Discharge):**

Static Electricity or power surge will damage the LED. Use of a conductive wrist band or anti-electrostatic glove is recommended when handling these LED. All devices, equipment and machinery must be properly grounded.