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SURFACE MOUNT LED TAPE AND REEL



Lead-Free Parts

AM-LG-020WKZ-L2-T20

DATA SHEET

DOC. NO : QW0905-AM-LG-020WKZ-L2-T20

REV. : A

DATE : 10 - Jun. - 2019



Features:

1. White SMD with PLCC 2 package.
2. Top view LED Package & Dimensions : 3.8x0.6x1.2 (unit:mm)
3. Luminous color:White
4. Viewing angle:120°
5. Compliant with RoHS and REACH

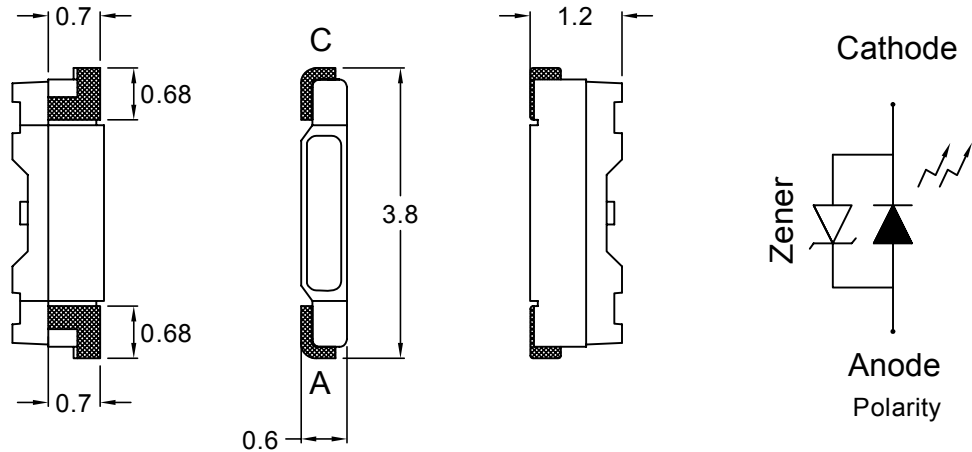
Application:

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

Device Selection Guide:

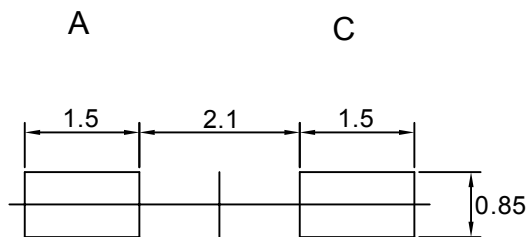
PART NO	MATERIAL	COLOR	
		Emitted	Lens
AM-LG-020WKZ-L2-T20	InGaN	White	Yellow Diffused

Package Dimensions



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

Recommended Soldering Pad Dimensions



Note : The tolerances unless mentioned is $\pm 0.1\text{mm}$,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	100	mA
Power Dissipation	PD	108	mW
Reverse Current @5V	Ir	1	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	100	°C/W

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

Items	Symbol	Min.	Typ.	Max.	UNIT	CONDITION
Luminous Intensity	Iv	1000	----	2000	mcd	IF=20mA
Chromaticity Coordinates	X	0.287	----	0.318	----	IF=20mA
	Y	0.276	----	0.329	----	IF=20mA
Forward Voltage	V _F	2.8	----	3.6	V	IF=20mA
Viewing Angle	2θ 1/2	----	110	----	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 color coordinates measurement allowance is ±0.01 testing tolerance.

Luminous Intensity Classification

BIN CODE	Iv(mcd) at 20mA	
	Min.	Max.
V21W11	1000	1200
W12W15	1200	1400
W21W24	1400	1600
W25W33	1600	1800
W34W37	1800	2000

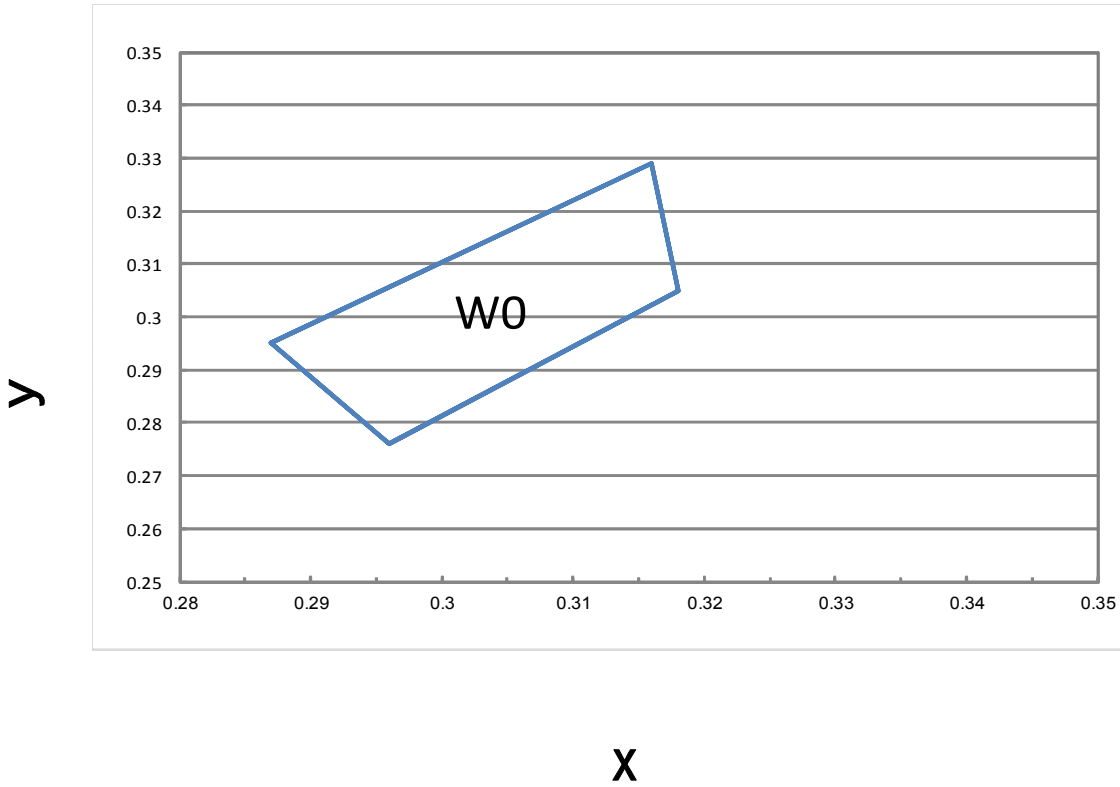
Forward Voltage Classification

BIN CODE	Vf(v) at 20mA	
	Min.	Max.
1	2.8	2.9
2	2.9	3
3	3	3.1
4	3.1	3.2
5	3.2	3.3
6	3.3	3.4
7	3.4	3.5
8	3.5	3.6

Chromaticity Coordinates Specifications For Bin Grading

Color Coordiante at20mA								
BIN CODE	1		2		3		4	
	X	Y	X	Y	X	Y	X	Y
W0	0.296	0.276	0.287	0.295	0.316	0.329	0.318	0.305

CIE Chromaticity Diagram



Typical Electro-Optical Characteristics Curve

WK CHIP

Fig.1 Forward current vs. Forward Voltage

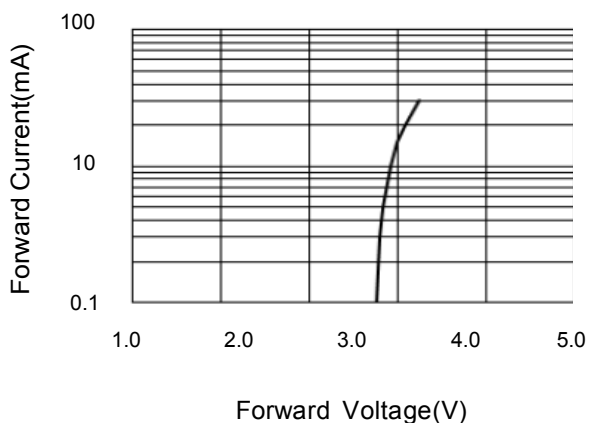


Fig.2 Relative Intensity vs. Forward Current

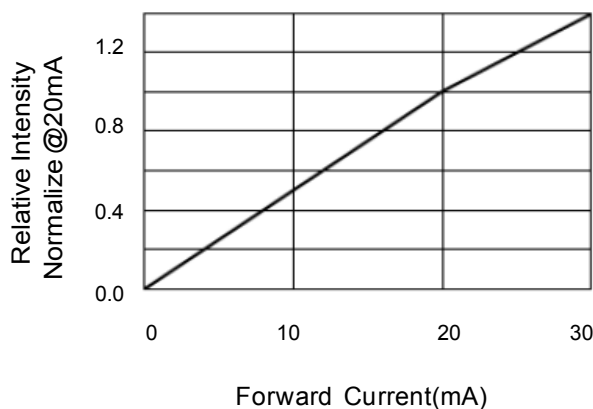


Fig.6 Forward Current vs. Temperature

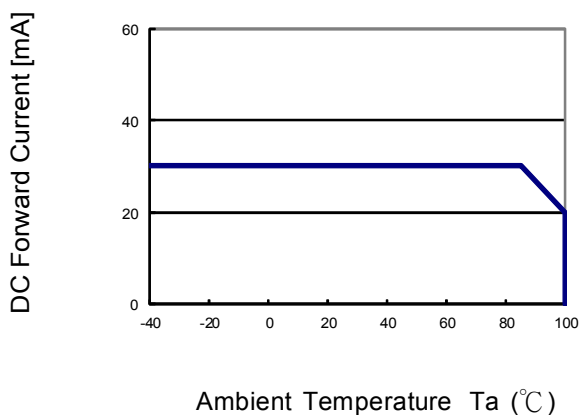


Fig.4 Relative Intensity vs. Temperature

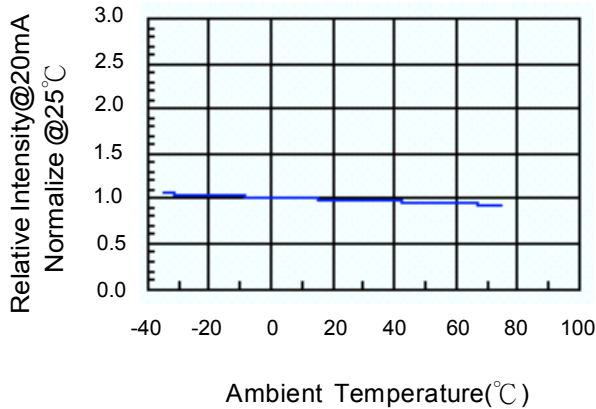


Fig.5 Luminous Spectrum (Ta=25°C)

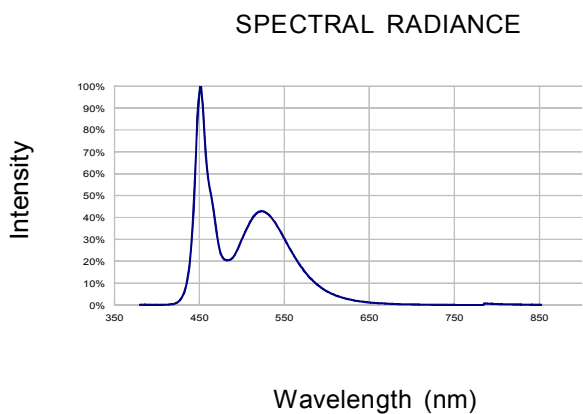
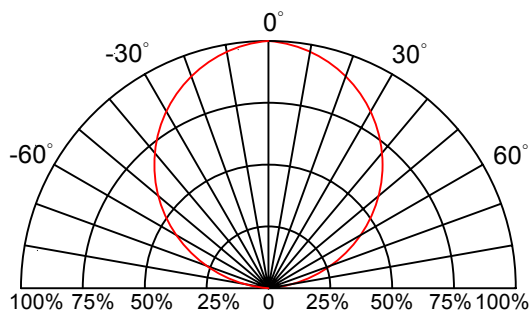
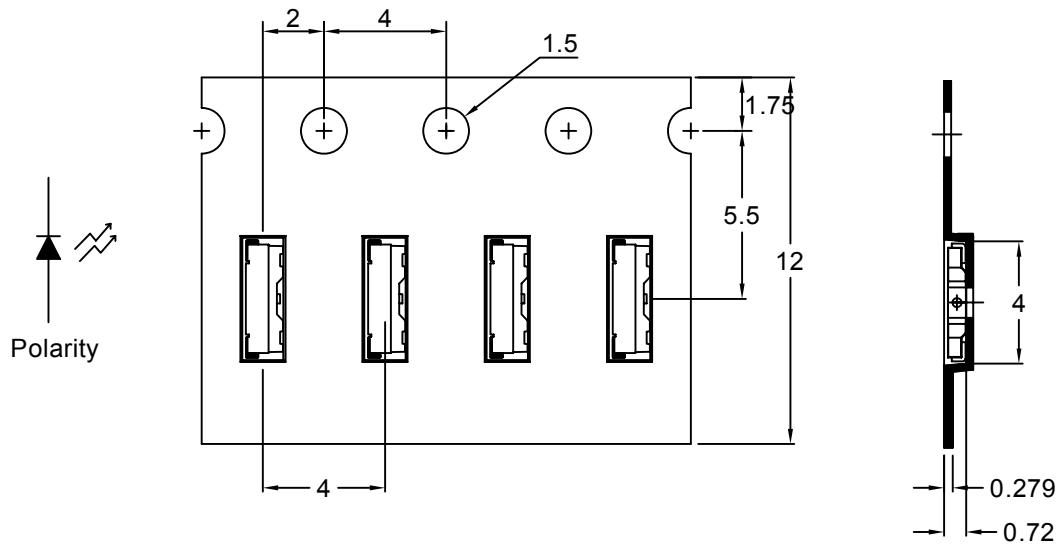


Fig.6 Directive Radiation

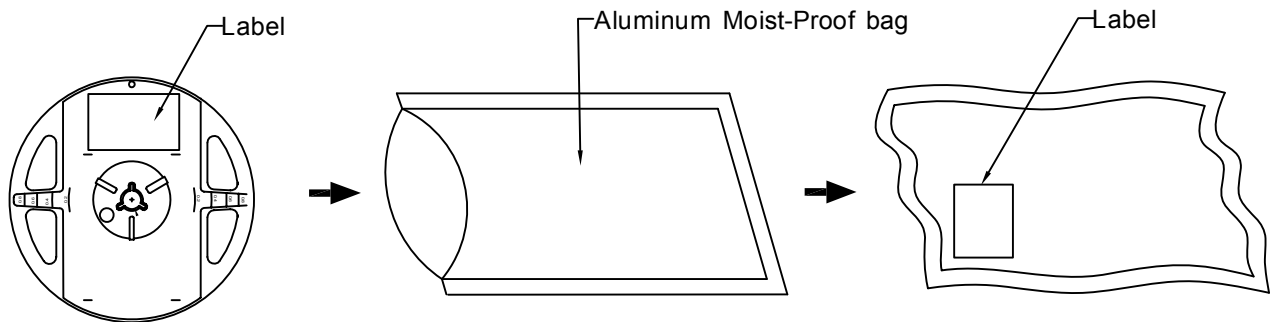


Carrier Type Dimensions








Note : The tolerances unless mentioned is ± 0.1 mm, Angle ± 0.5 . Unit=mm.

Packing Specifications



Part No.	Description	Quantity/Reel
AM-LG-020WKZ-L2-T20	12.0mm tape,7"reel	3000 PCS

Label Explanation

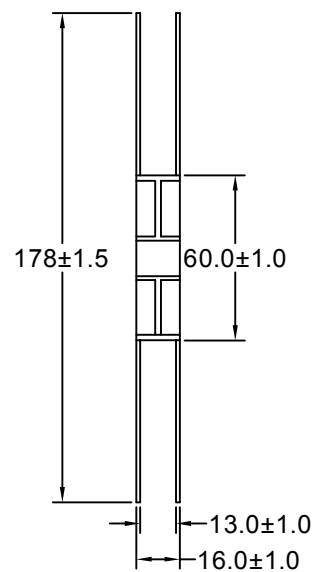
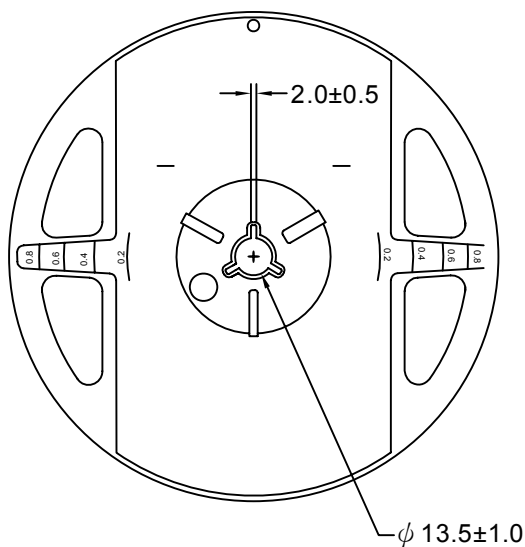
	LIGITEK ELECTRONICS CO., LTD.	
		
	PART :	AM-LG-020WKZ-L2-T20
		
	LOT :	GS11630168
		
QTY(PCS):	3000	
		
BIN/HUE :	V21W11/W0	VF:2.8-2.9

BIN : Luminous Flux

HUE : Chromaticity Coordinates
(CIE_x , CIE_y)

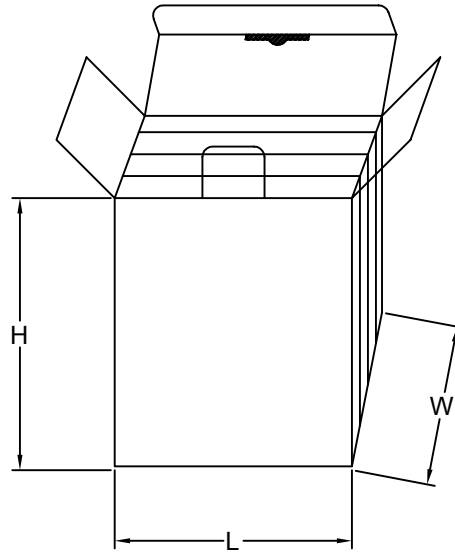
VF : Forward Voltage

Reel Dimensions

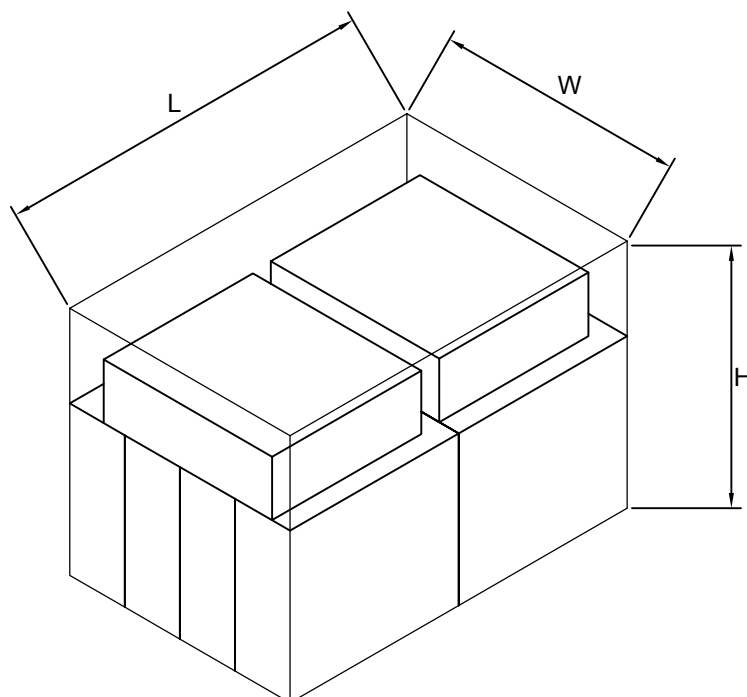


Box Explanation

1. 4 BAG / INNER BOX
2. INNER BOX SIZE : L X W X H 23cm X 8.5cm x 26cm

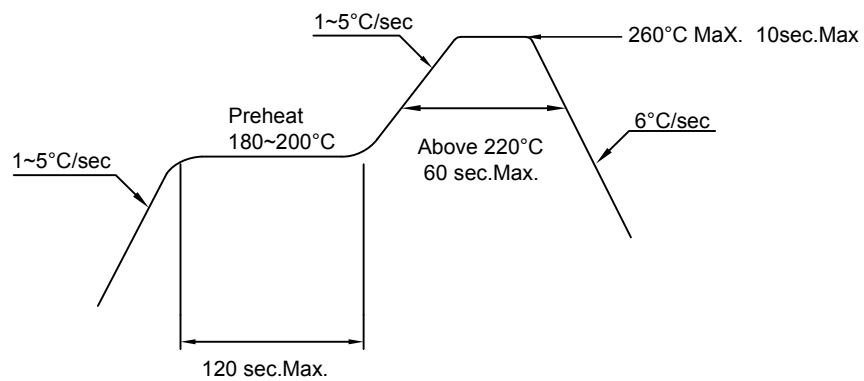


3. 10 INNER BOXES / CARTON
4. CARTON SIZE : L X W X H 58cm X 34cm x 35cm



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:**

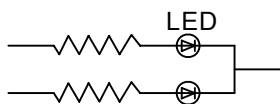
1. Calculated shelf life before opening is 12 months at $< 30^{\circ}\text{C}$ and $< 90\%$ relative humidity (RH)
2. After bag is opened, devices which will be subjected to reflow soldering or other high temperature processes must be
 - a) Assembled within 168 hours in an environment of $\leq 30^{\circ}\text{C}$ / 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:

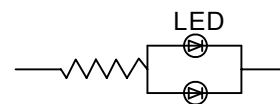
LED is a current operated device, and therefore, requires some kind of current limiting incorporated into the driver circuit. This current limiting typically takes the form of a current limiting resistor placed in series with the LED.

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.