

CUSTOMER : \_\_\_\_\_

NO. : MK-2835B15

EDIT :

DATE : 2018. 08. 10

# SPECIFICATION FOR APPROVAL

PRODUCT : MIKWANG 2835 BLUE LED 150mA  
PART NO. : MK-2835B15

APPROVAL			REVISION
CHK	CHK	APPD.	
REMARKS			



**MIKWANG ELECTRONICS CO., LTD.**

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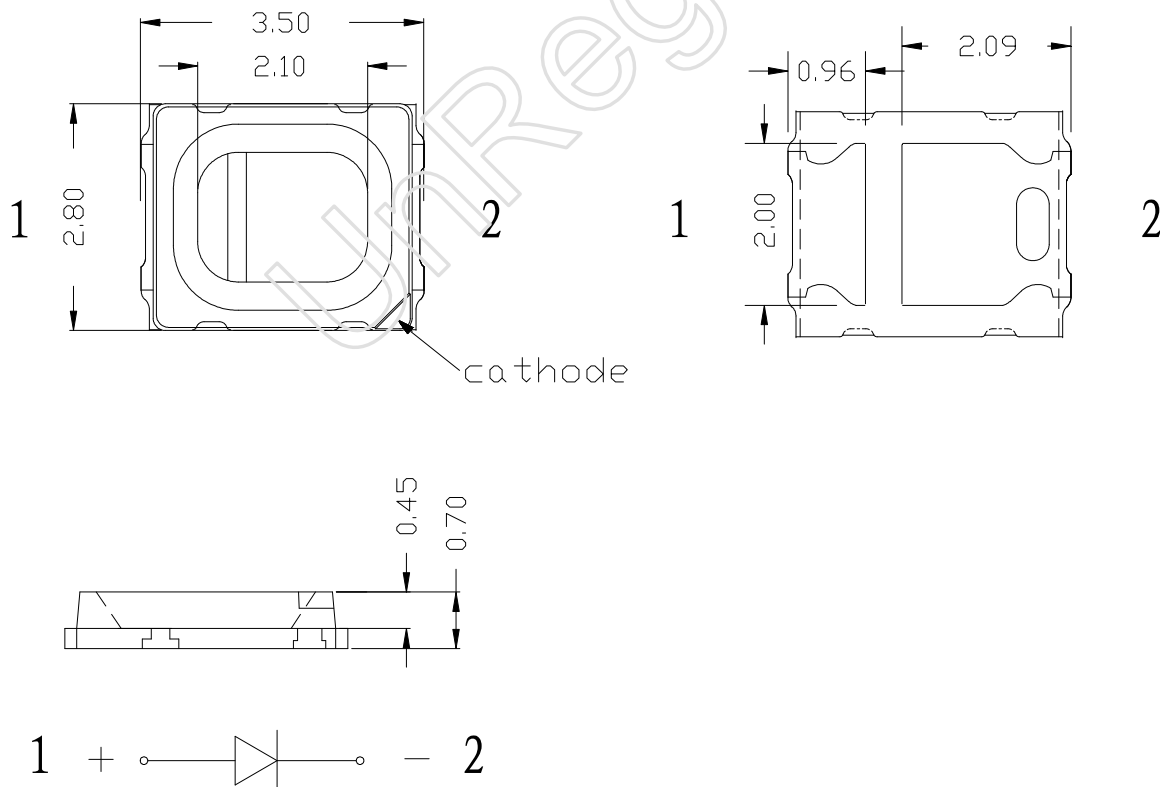
◆ Features :

- \* Small package with high efficiency
- \* Low voltage operation, Instant light
- \* Long operation life
- \* Lead free product
- \* RoHS compliant

◆ Applications :

- \* Mobile phone flash
- \* Automotive interior lighting
- \* Automotive forward lighting
- \* Architectural lighting
- \* LCD TV / Monitor backlight
- \* Traffic signals
- \* Task lighting
- \* Decorative / Pathway lighting
- \* Remote / Solar powered lighting
- \* Household appliances

◆ Package Dimensions



Notes:

1. All dimensions are in mm
2. Tolerance is  $\pm 0.2$ mm unless otherwise noted.



### ◆ Absolute Maximum Ratings ( $T_A=25^{\circ}\text{C}$ )

Parameter	Symbol	Rating	Unit
Power Dissipation	$P_D$	0.5	W
Forward Current	$I_F$	150	mA
Peak Forward Current	$I_{FP}$	200	mA
Operation Temperature Range	$T_{opr}$	-35 to +60	$^{\circ}\text{C}$
Storage Temperature Range	$T_{stg}$	-40 to +70	$^{\circ}\text{C}$
ESD Sensitivity (HBM)	--	2000	V
Soldering Temperature		300 $\pm$ 20 $^{\circ}\text{C}$ /3~5sec	

NOTE: \* Pulse width  $\leq 0.1\text{msec}$  Duty Ratio  $\leq 1/10$

### ◆ Electrical-Optical Characteristics ( $T_A=25^{\circ}\text{C}$ )

Parameter	Test Condition	Symbol	Min	Typ	Max	Unit
Forward Voltage	$I_F=150\text{mA}$	$V_F$	---	3.2	---	V
Reverse Current	$V_R=-5\text{V}$	$I_R$	---	---	5	$\mu\text{A}$
View Angle	$I_F=150\text{mA}$	$2\theta_{1/2}$	---	120	---	deg.
Luminous flux	$I_F=150\text{mA}$	$\Phi_V$	10	---	15	lm
Wavelength	$I_F=150\text{mA}$	$\lambda_d$	452.5		455	nm

**Note:** the test tolerance

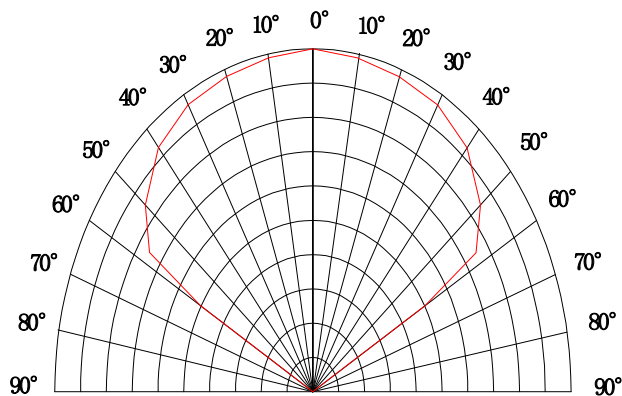
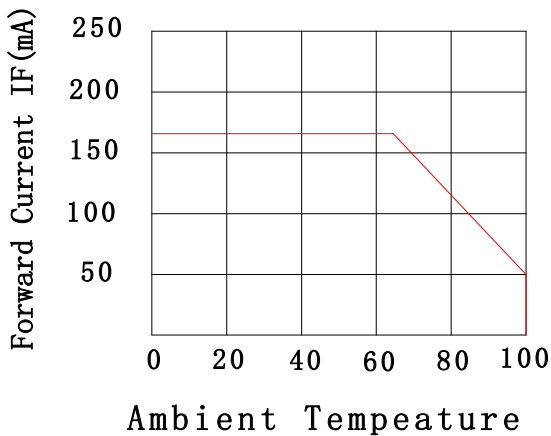
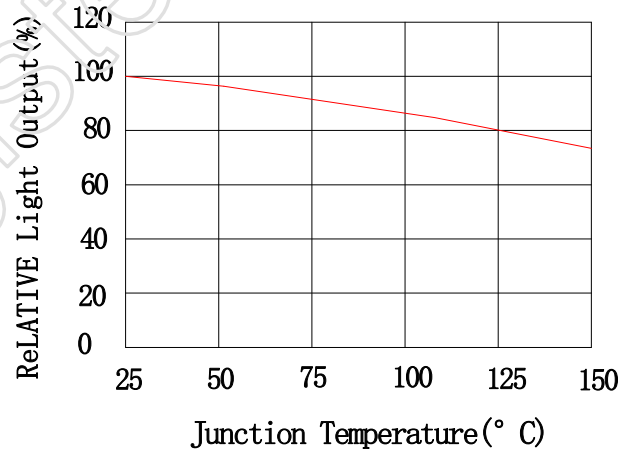
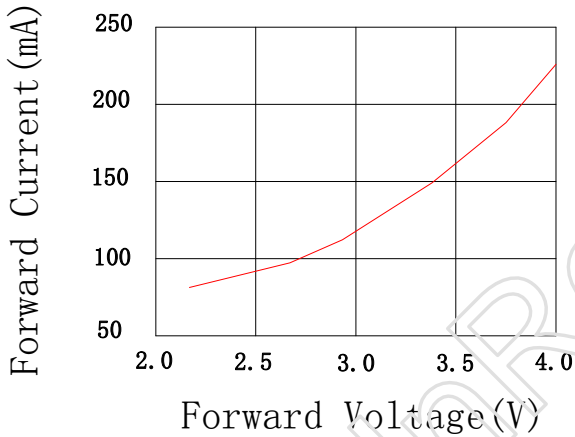
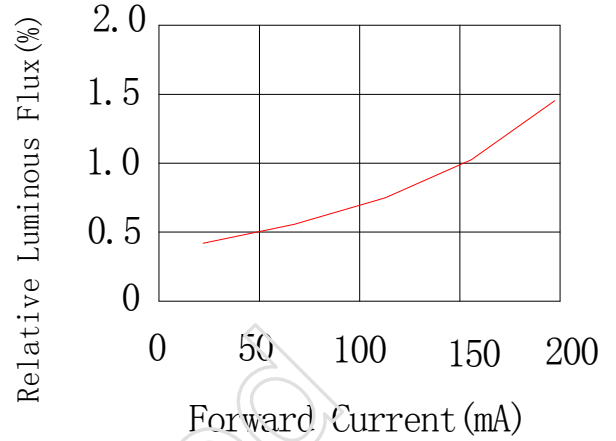
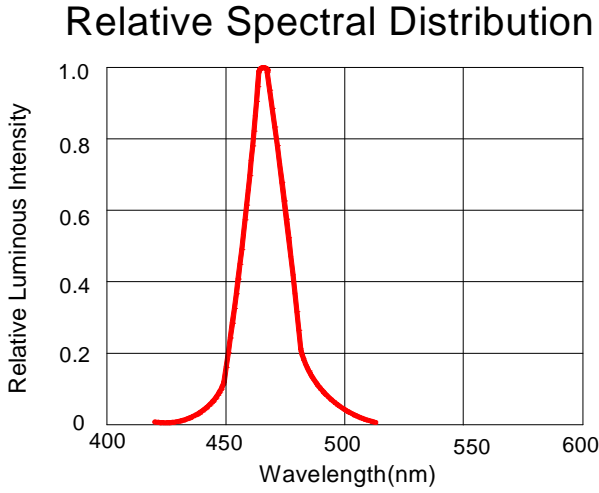
$V_F : \pm 0.05\text{V}$

$\lambda_d : \pm 5\%$

$\Phi_V : \pm 10\%$



◆ Typical Electrical/Optical Characteristic Curves( $I_f=150\text{mA}; T_A=25^\circ\text{C}$ )





## Reliability

### 1. Test Items And Results

Item	Test conditions	Note	Number of Damaged
Reflow	Temp:260°C max T=10 sec	2 time	0/30
Thermal Shock	-40~100°C 30min, 10s, 30min	100cycles	0/30
High Temperature High Humidity Storage	Ta=60°C, RH=90%	300hrs	0/30
Steady State Operating life	Ta=25°C, IF=150mA	1000hrs	0/30
Steady State Operating life of High Humidity Heat	Ta=60°C RH=90%, IF=150mA	1000hrs	0/30
High Temperature Storage	Ta=100°C	1000HRS	0/30
Low Temperature Storage	Ta=-40°C	1000HRS	0/30

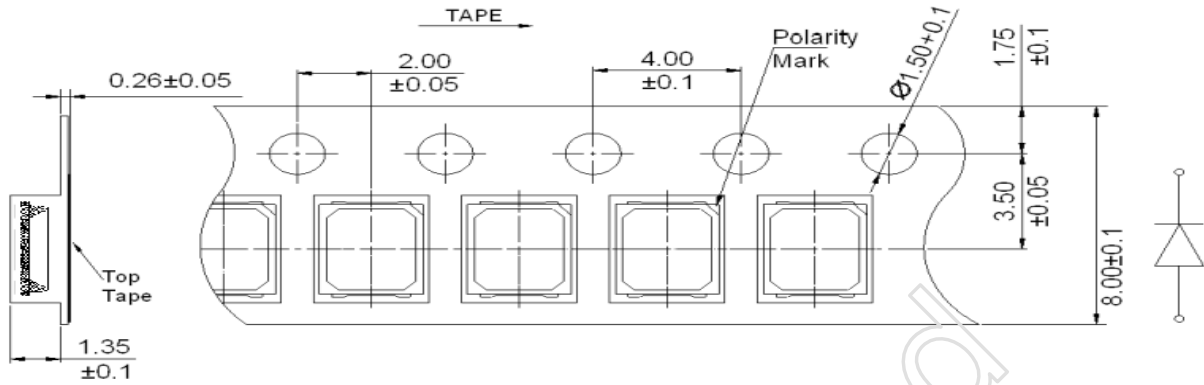
### 2. Criteria for Judging The Damage

Item	Symbol	Test Conditions	Criteria for Judgment	
			Min.	Max.
Forward Voltage	$V_F$	$I_F = 150 \text{ mA}$	---	Initial Data $\times 1.1$
Luminous Intensity	$I_V$	$I_F = 150 \text{ mA}$	Initial Data $\times 0.9$	---
Reverse Current	$I_R$	$V_R = 5V$	---	Initial Data $\times 2.0$

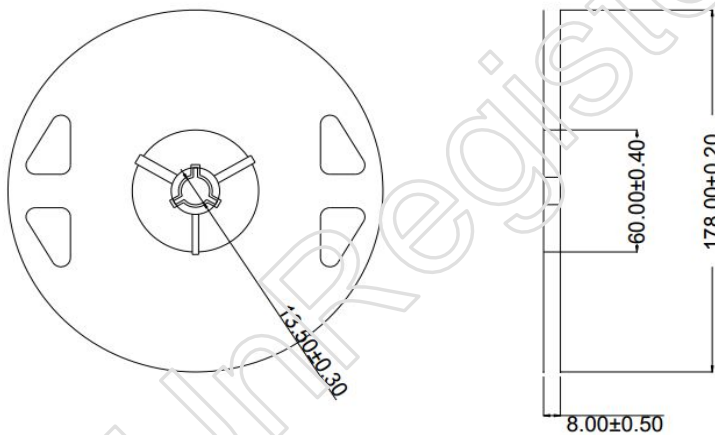


### ◆ Packaging Specifications

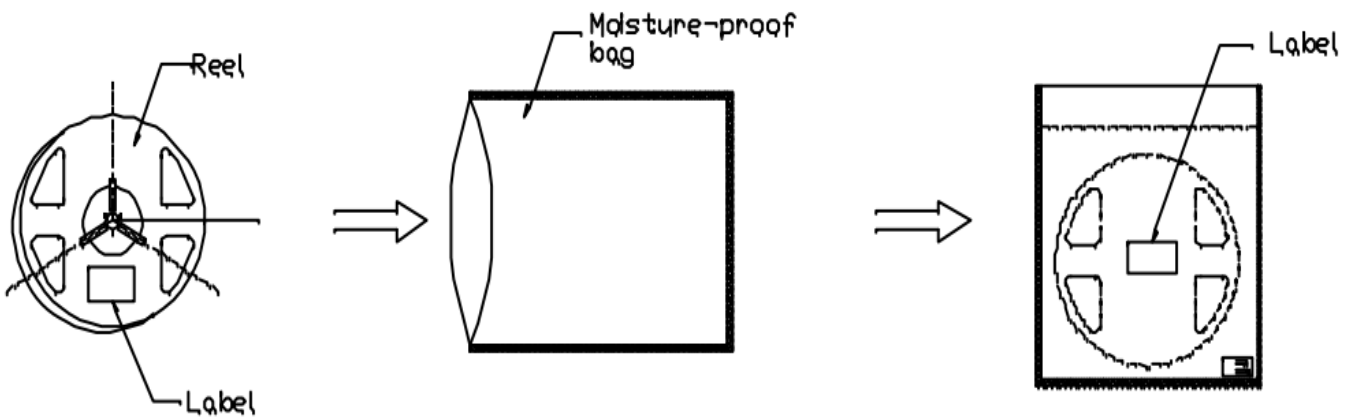
#### Dimensions of Tape



#### Dimensions of Reel



#### Packaging specifications





**Label:**

Φ(LM): Luminous flux rank

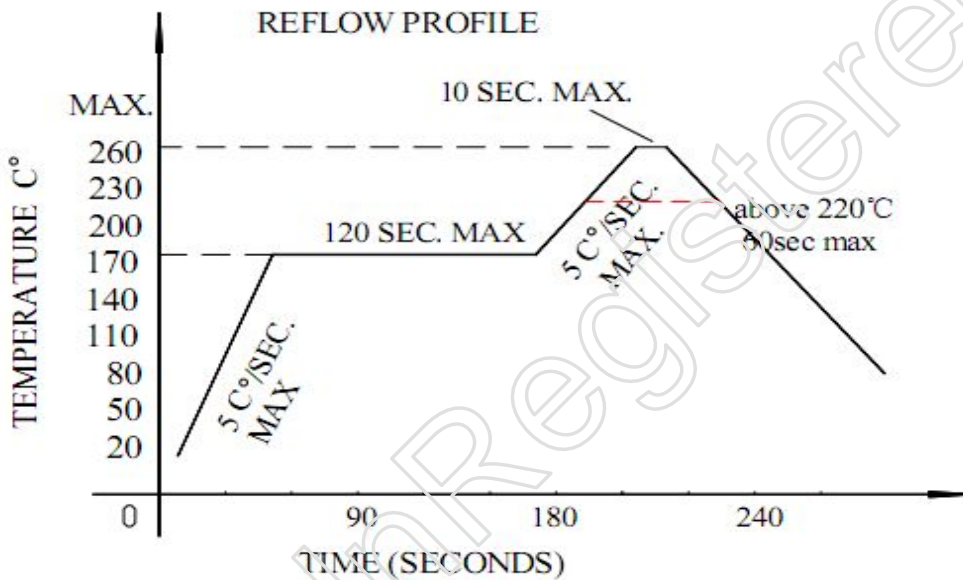
XY: Color Coordinates

VF: Forward Voltage

RA: Color Rendering index

MIKWANG ELECTRONICS CO., LTD				
Part NO. : XY-XXXXXXXX		Lot NO. : XX-XXX		Q'ty: XXXX pcs
Code	Min	Typ	Max	
XY: XX	TC: XXXX		XXXX	
PO: XX	Φ (LM): XX		XX	
IF: XX	VF (V): XX		XX	
SDCM: X	RA: XX			
BIN NO. : X-X-X		Rθ: X	DATE: XXXX/XX/XX	
备注: XXXXXXXX XX (XX)				

◆ **SMT Reflow Soldering Instructions**



1. Reflow soldering should not be done more than two times
2. When soldering, do not put stress on the LEDs during heating

◆ **Soldering iron**

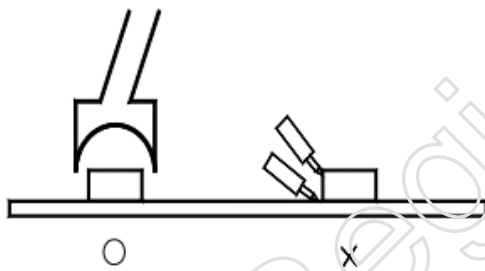
1. When hand soldering, keep the temperature of the iron under 300°C, and at that temperature keep the time under 3 sec.



2. The hand soldering should be done only one time,

◆ Rework

1. Customer must finish rework within 3 sec under 300°C
2. The head of iron can not touch the resin
3. Twin-head type is preferred.



◆ CARTIONS

The encapsulated material of the LEDs is silicone .Therefore the LEDs have a soft surface on the top of package. The pressure to the top surface will be influence to the reliability of the LEDs. Precautions should be taken to avoid the strong pressure on the encapsulated part. So when using the picking the picking up nozzle,the pressure on the silicone resin should be proper.