

CUSTOMER : _____

NO. : MK-2835WW15

EDIT :

DATE : 2018. 08. 10

SPECIFICATION FOR APPROVAL

PRODUCT : MIKWANG 2835 Warm White LED 150mA
PART NO. : MK-2835WW15

APPROVAL			REVISION
CHK	CHK	APPD.	
REMARKS			



MIKWANG ELECTRONICS CO., LTD.

RM1401, 60-24, GASAN-DONG, GEUMCHEON-GU, SEOUL, KOREA

TEL : 82-2-2113-7700(Rep.) FAX : 82-2-2113-7707

URL : WWW.LED.CO.KR / E-MAIL : mkled7700@hanmail.net



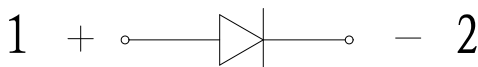
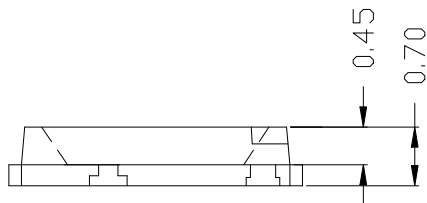
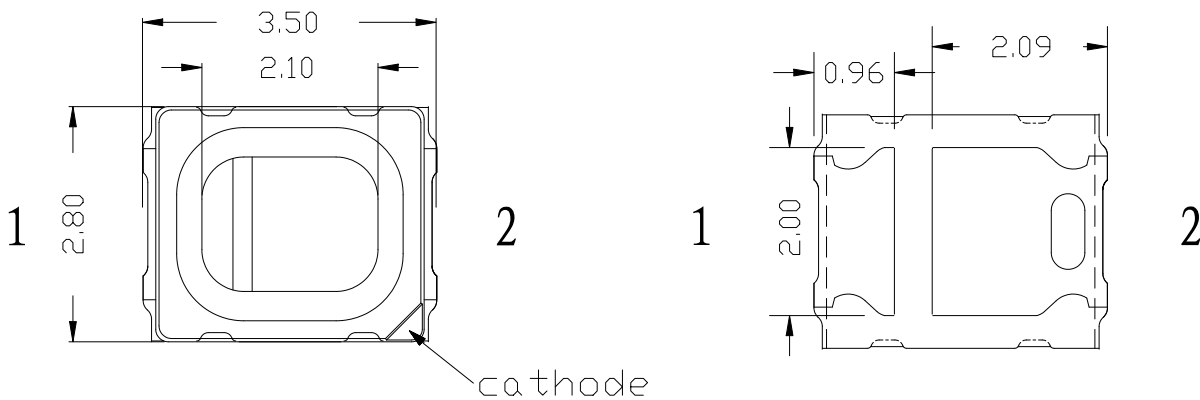
◆Features :

- * 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 ± 0.2 mm unless otherwise noted.



◆ Absolute Maximum Ratings (T_A=25°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	°C
Storage Temperature Range	T _{stg}	-40 to +70	°C
ESD Sensitivity (HBM)	--	2000	V
Soldering Temperature	300±20°C/3~5sec		

NOTE: * Pulse width ≤0.1msec Duty Ratio(≤1/10

◆ Electrical-Optical Characteristics (T_A=25°C)

Parameter	Test Condition	Symbol	Min	Typ	Max	Unit
Forward Voltage	I _F =150mA	V_F	---	3.2	---	V
Reverse Current	V _R =-5V	I_R	---	---	5	μA
View Angle	I _F =150mA	2θ_{1/2}	---	120	---	deg.
Luminous flux	I _F =150mA	Φ_v	60	---	65	lm
Color Coordinates	I _F =150mA	X	---	0.440	---	
		Y	---	0.403	---	
Color Temperature	I _F =150mA	CCT	---	3000	---	K
Color Rendering index	I _F =150mA	R_a	80	---	---	---
Color tolerance	I _F =150mA	SDCM	---	---	4	---

Note: the test tolerance

V_F : ±0.05V

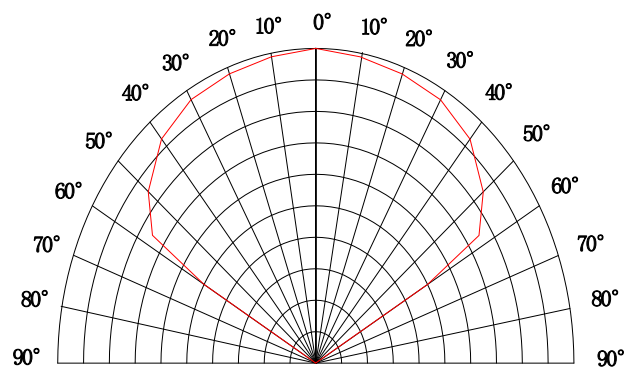
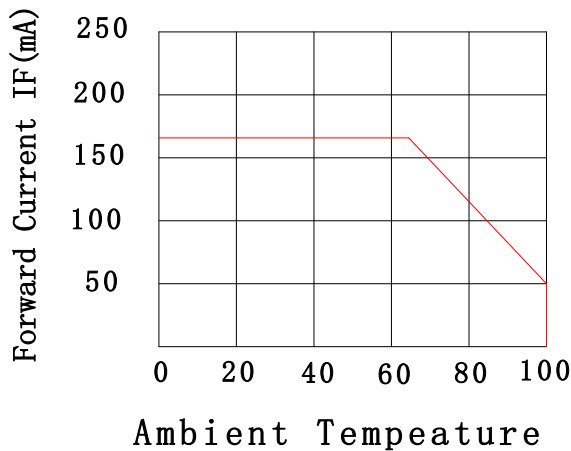
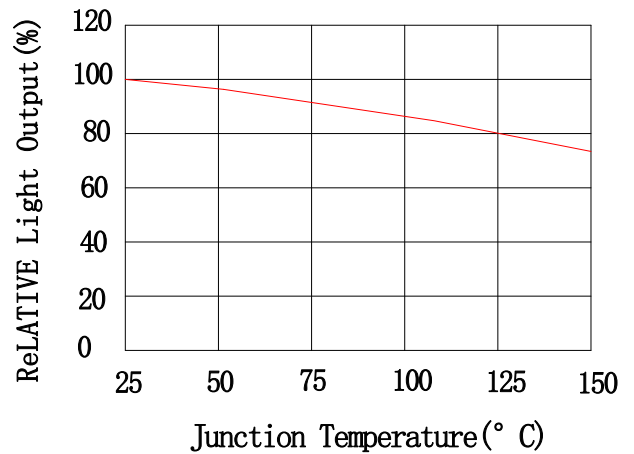
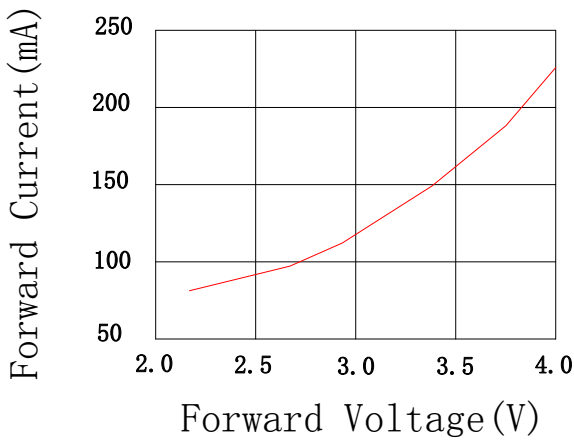
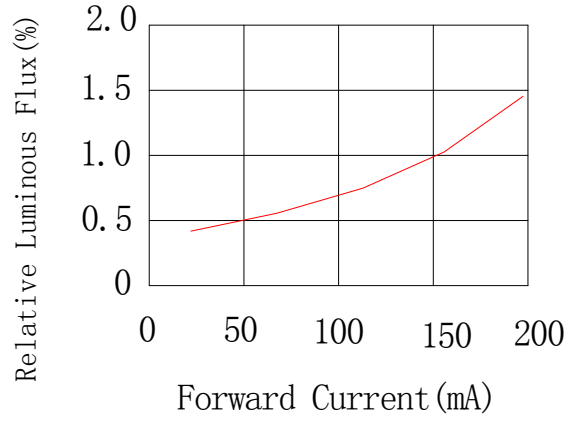
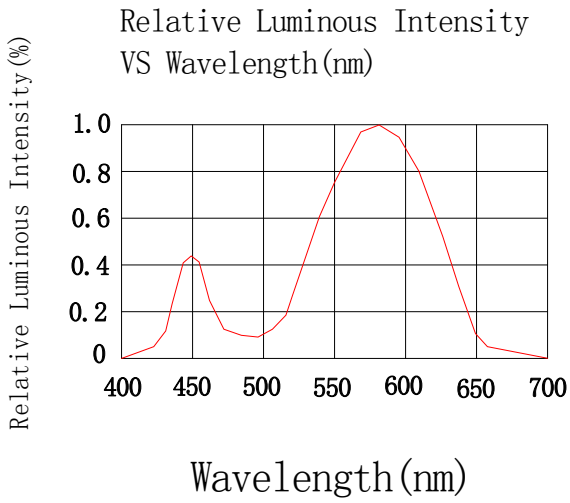
CCT : ±5%

XY : ±0.005

Φ_V : ±10%

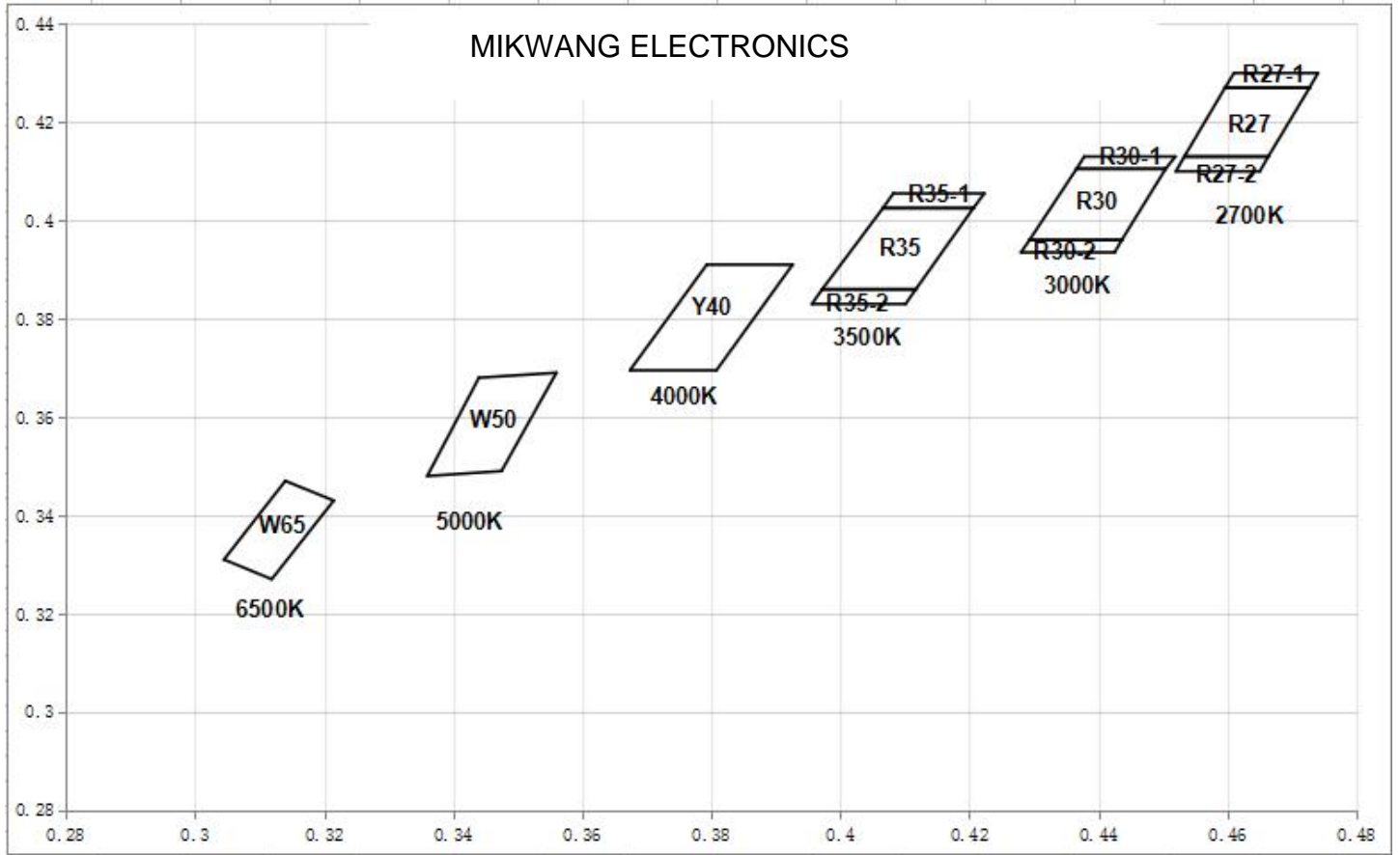


◆ Typical Electrical/Optical Characteristic Curves (If=150mA; TA=25°C)





◆ CIE Chromaticity Diagram:(If=150mA;TA=25°C)





Color RANK:(If=150mA;TA=25°C)

CODE	CCT	X	Y
W50	5000K	0.344	0.368
		0.336	0.348
		0.3475	0.349
		0.356	0.369

CODE	CCT	X	Y
W65	6500K	0.314	0.347
		0.3045	0.331
		0.3119	0.327
		0.3215	0.343

CODE	CCT	X	Y
Y40	4000K	0.3793	0.391
		0.3674	0.3695
		0.3808	0.3695
		0.3926	0.391

CODE	CCT	X	Y

CODE	CCT	X	Y
R27-1	2700K	0.461	0.43
		0.4596	0.427
		0.4727	0.427
		0.474	0.43
R27		0.4596	0.427
		0.4533	0.413
		0.4663	0.413
		0.4727	0.427
R27-2		0.4533	0.413
		0.452	0.41
		0.465	0.41
		0.4663	0.413

CODE	CCT	X	Y
R30-1	3000K	0.4378	0.413
		0.4366	0.4105
		0.4504	0.4105
		0.4519	0.413
R30		0.4366	0.4105
		0.4293	0.396
		0.4436	0.396
		0.4504	0.4105
R30-2		0.4293	0.396
		0.428	0.3935
		0.4425	0.3935
		0.4436	0.396

CODE	CCT	X	Y
R35-1	3500K	0.4082	0.4055
		0.4066	0.4025
		0.4206	0.4025
		0.4223	0.4055
R35		0.4066	0.4025
		0.3972	0.386
		0.4117	0.386
		0.4206	0.4025
R35-2		0.3972	0.386
		0.3956	0.383
		0.4101	0.383
		0.4117	0.386

CODE	CCT	X	Y



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

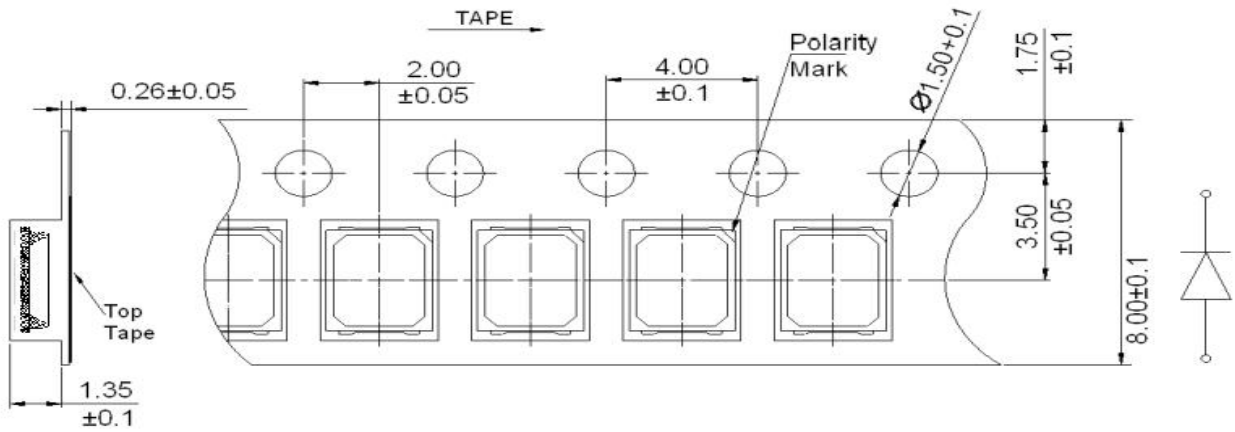
2. Criteria for Judging The Damage

Item	Symbol	Test Conditions	Criteria for Judgment	
			Min.	Max.
Forward Voltage	V _F	I _F = 150 mA	---	Initial Data × 1.1
Luminous Intensity	I _v	I _F = 150 mA	Initial Data × 0.9	---
Reverse Current	I _R	V _R = 5V	---	Initial Data × 2.0

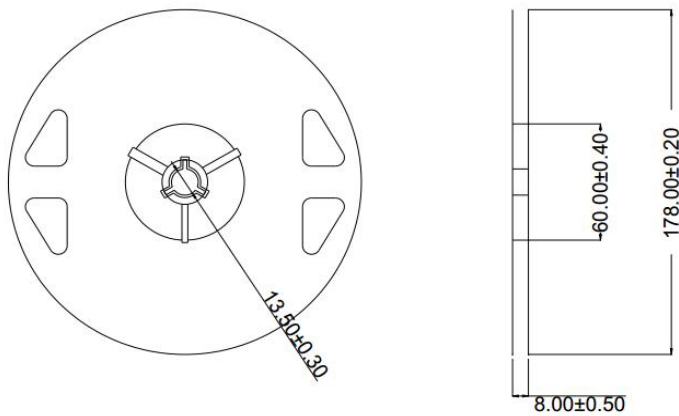


◆ Packaging Specifications

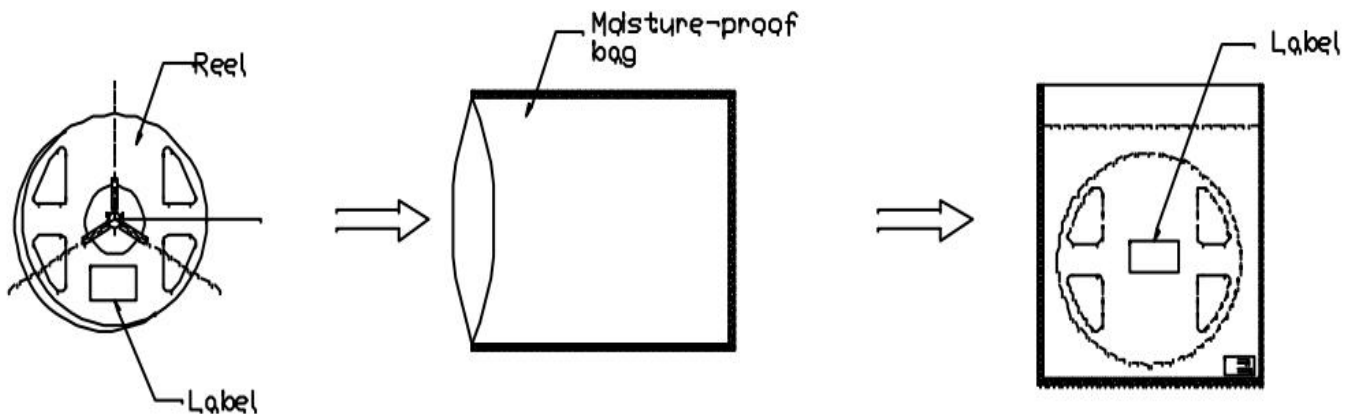
Dimensions of Tape



Dimensions of Reel



Packaging specifications



Label:

Φ (LM): Luminous flux rank

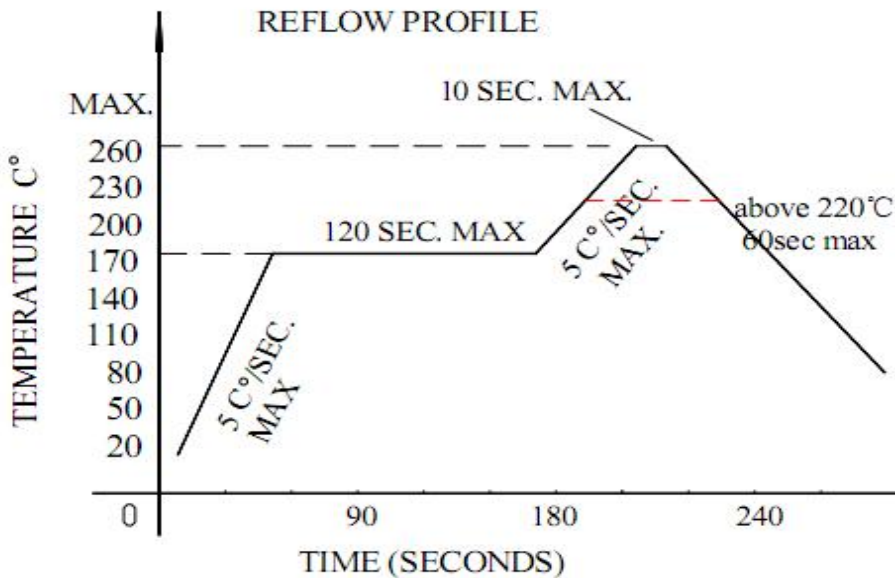
XY: Color Coordinates

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	R θ : 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.



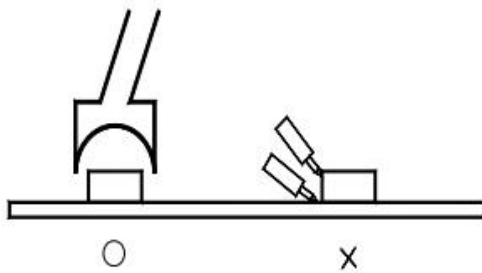
2. The hand soldering should be done only one time,

◆ 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.