

SPECIFICATION

Product : Topview 5050 Green SMD LED

Part No. : IWS-L5056-UG-K3

Date : 2010. 04. 19 Ver. 2.0

Proposed By	Checked By	Checked By	Checked By	Approval

Comment



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Topview 5050 SMD LED

IWS-L5056-UG-K3

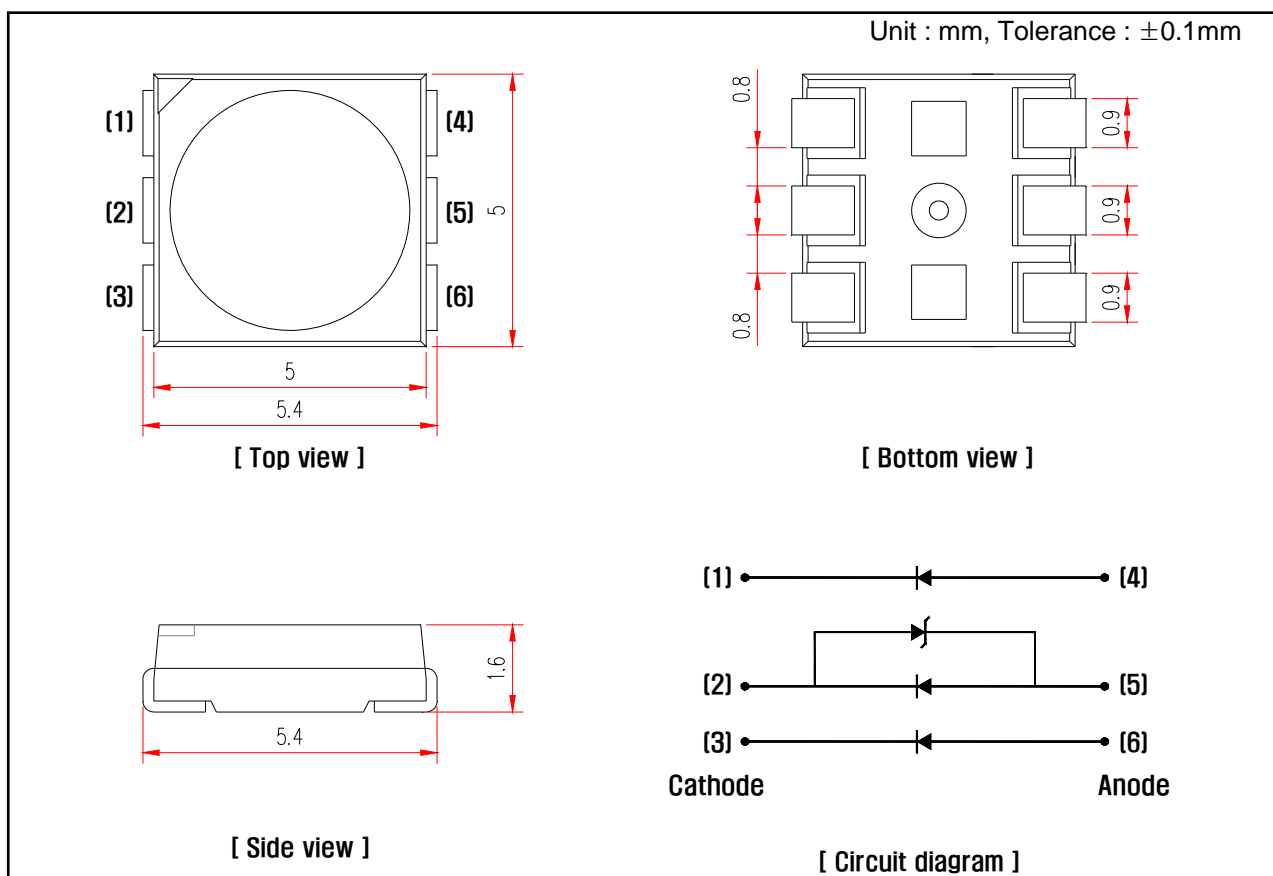
1. Features

- 3 Chip High-Luminosity SMD LED
- 5.4 x 5.0 x 1.6 mm (L x W x H), 6-Pin, Small Size Surface Mount Type
- Wide Viewing Angle
- Long Operating Life

2. Applications

- Automotive: Backlight in Dashboard and Switch
- Lighting Device: Indicator, General Lighting
- Camera Flash, Hand Carrier Flash
- General Use

3. Outline Drawing and Dimension



Note

1. All dimensions are in millimeters
2. All dimensions without tolerances are for reference only

4. Absolute Maximum Ratings($T_a = 25\text{ }^\circ\text{C}$)

Parameter	Symbol	Value	Unit
Power Dissipation	P_d	324	mW
Continuous Forward Current	I_F	90	mA
Peak Forward Current ^{※1}	I_{FP}	300	mA
Operating Temperature	T_{opr}	-30 ~ 85	$^\circ\text{C}$
Storage Temperature	T_{stg}	-40 ~100	$^\circ\text{C}$
Soldering Temperature	T_{sol}	260 (5sec)	$^\circ\text{C}$

※1 Duty ratio = 1/10, Pulse width = 0.1ms

5. Electro-optical Characteristics($T_a = 25\text{ }^\circ\text{C}$)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit.
Forward Voltage	V_F	$I_F = 60\text{ mA}$	2.8	3.2	3.6	V
Reverse Voltage	V_R	$I_R = 5\text{ mA}$	0.7	0.8	1.5	V
Luminous Intensity ^{※2}	I_v	$I_F = 60\text{ mA}$	2,700	-	5,800	mcd
Dominant Wavelength ^{※3}	W_D	$I_F = 60\text{ mA}$	515	-	535	nm
Viewing Angle ^{※4}	$2\theta_{1/2}$	$I_F = 60\text{ mA}$	-	120	-	$^\circ$

※2 Luminous Intensity is tested by a tester calibrated by CAS 140B(CIE LED_B) and has an accuracy of 10%

※3 Dominant Wavelength has an accuracy of $\pm 2\text{nm}$

※4 Viewing Angle is the angle until 50% of brightness measured from the front part of LED.

5.1 Luminous Intensity Rank

Rank	Luminous Intensity (mcd)
P	2700 ~ 3500
Q	3500 ~ 4500
R	4500 ~ 5800

5.2 Forward Voltage Rank

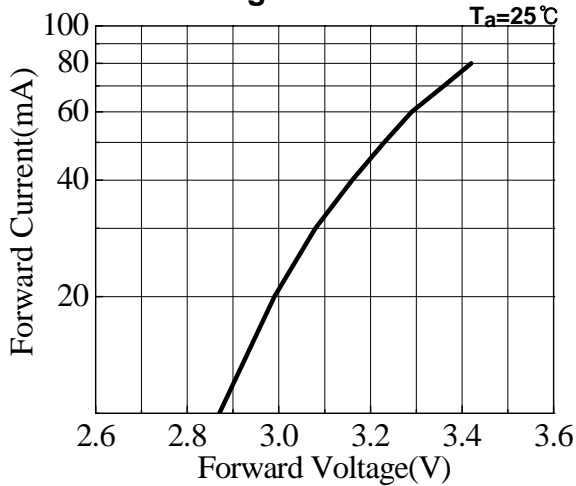
Rank	Forward Voltage (V)
0	2.8 ~ 3.0
2	3.0 ~ 3.2
4	3.2 ~ 3.4
6	3.4 ~ 3.6

5.3 Dominant Wavelength Rank

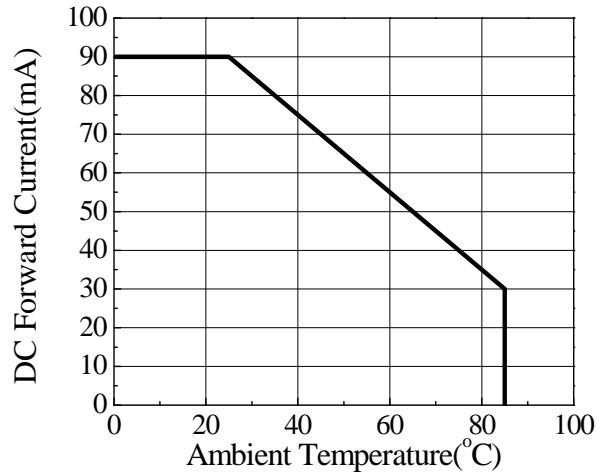
Rank	Dominant Wavelength (nm)
a	515 ~ 520
b	520 ~ 525
c	525 ~ 530
d	530 ~ 535

6. Typical Characteristics Curves

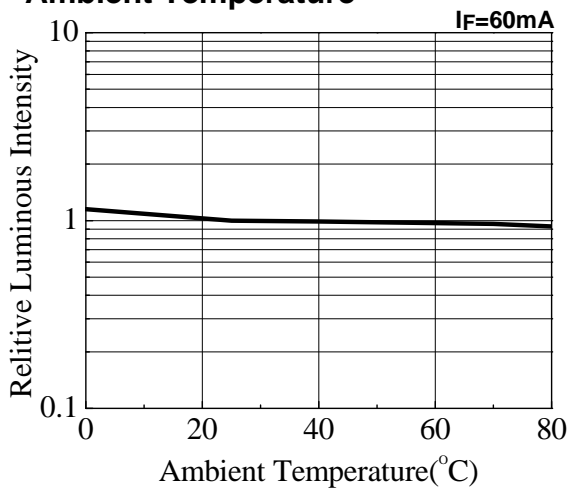
Forward Current vs. Forward Voltage



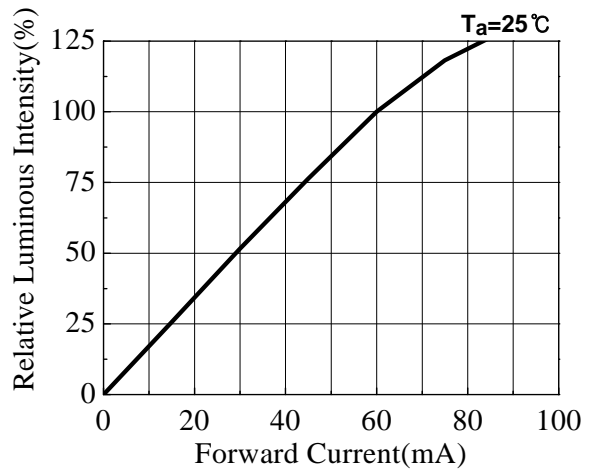
Forward Current vs. Ambient Temperature



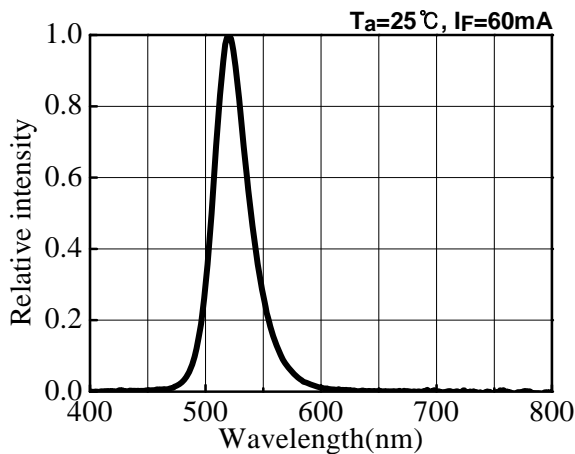
Relative Luminous Intensity vs. Ambient Temperature



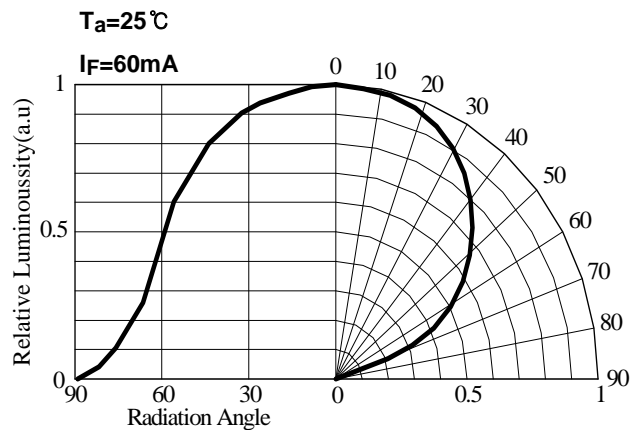
Relative Luminous Intensity vs. Forward Current



Relative Intensity vs. Wavelength

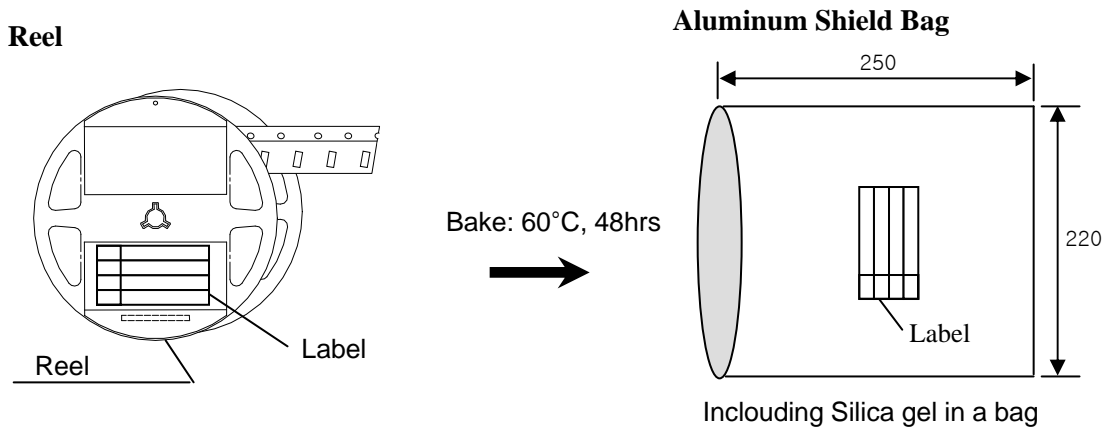


Radiation Diagram



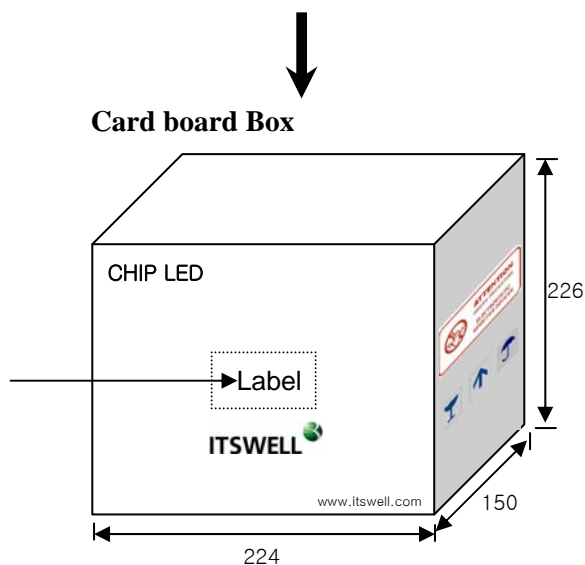
8. Packing Dimension

Unit :mm



AI Pack Label, Reel Label (70 × 37)

ITSWELL				
Lot :	IWS-L5056-UG-K3			
	MIN	AVG	MAX	STD
V _f [volt]				
I _v [mcd]				
CCT[K]				
Q'ty :	yyyy/mm/dd			



	Dimensions (mm)	Reel / Box	Q'ty / Box(pcs)
Reel	Φ180mm, 15mm Width	–	1,000 Max
Al Shield Bag	250x220	–	1,000 Max
Card board Box	224x150x226	9 Max	9,000 Max

10. Reliability

10.1 Reliability Test Item

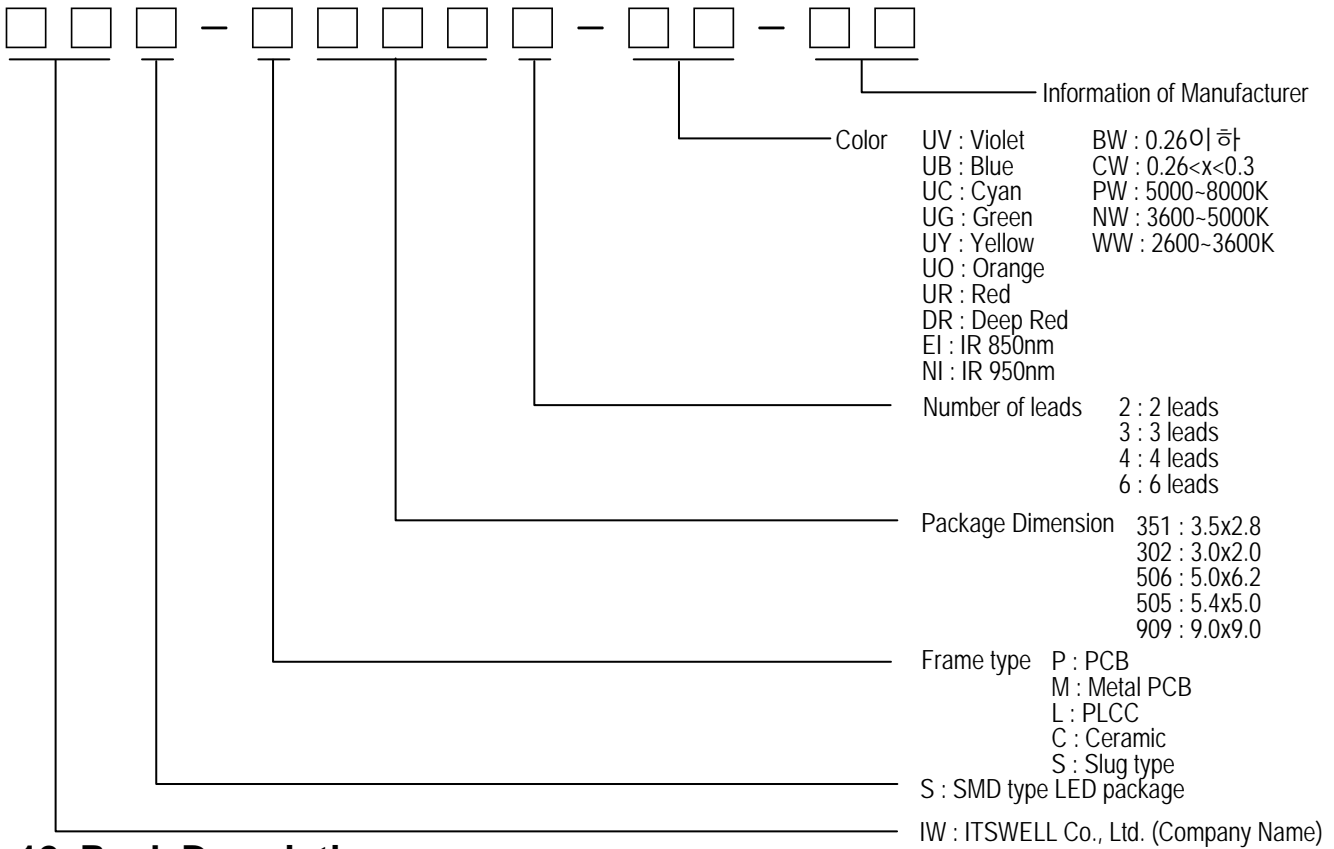
Test Items	Test Conditions	Notes
High Temperature Storage	100°C, 1,000hr.	0/25
Low Temperature Storage	-40°C, 1,000hr.	0/25
Temp. Humidity Storage	60°C, 90% RH, 1,000hr.	0/25
Steady State Operating life	25°C, 72mA, 1,000hr.	0/25
High Temperature Operating Life	85°C, 30mA, 1,000hr	0/25
Low Temperature Operating Life	-30°C, 60mA, 1,000hr.	0/25
Steady State Operating life Of High Humidity Heat	60°C, 90% RH, 45mA, 1,000hr.	0/25
Thermal Shock	-40°C (30min)↔100°C (30min.), 100 cycle	0/20
ESD	HBM, 100 pF, 1.5 kohm, 3 times	0/20

10.2 Criteria for Judging the Damage

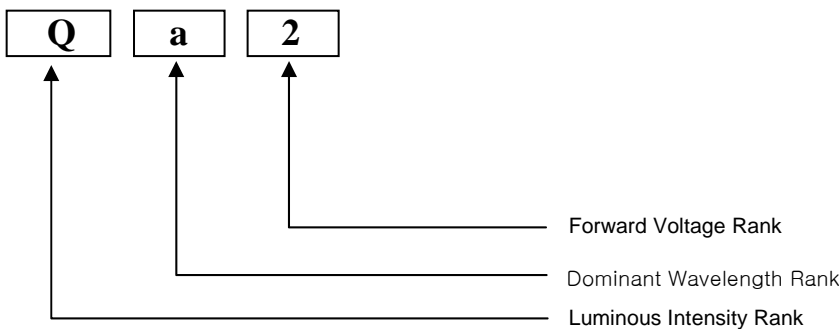
Parameters	Test Conditions	Criteria for judgment
Forward Voltage (V_F)	$I_F = 60 \text{ mA}$	Less than 110% of U
Luminous Intensity (I_V)	$I_F = 60 \text{ mA}$	> 70% of S

* U means the upper limit of specified characteristics, S means initial value.

11. Part Name Description



12. Rank Description



13. Attention : Electric Static Discharge (ESD) Protection



The symbol shown on the page herein to introduce 'Electro-Optical Characteristics'. ESD protection for GaP and AlGaAs based chips is still Necessary even though they are safe in low static-electric discharge. Material in AlInGaP, GaP, or/and InGaN based chips are STATIC SENSITIVE devices. ESD protection has to considered and taken in the initial design stage. If manual work/process is needed, please ensure the device is well protective From ESD during all the process.

