SPECIFICATION FOR TOP LED

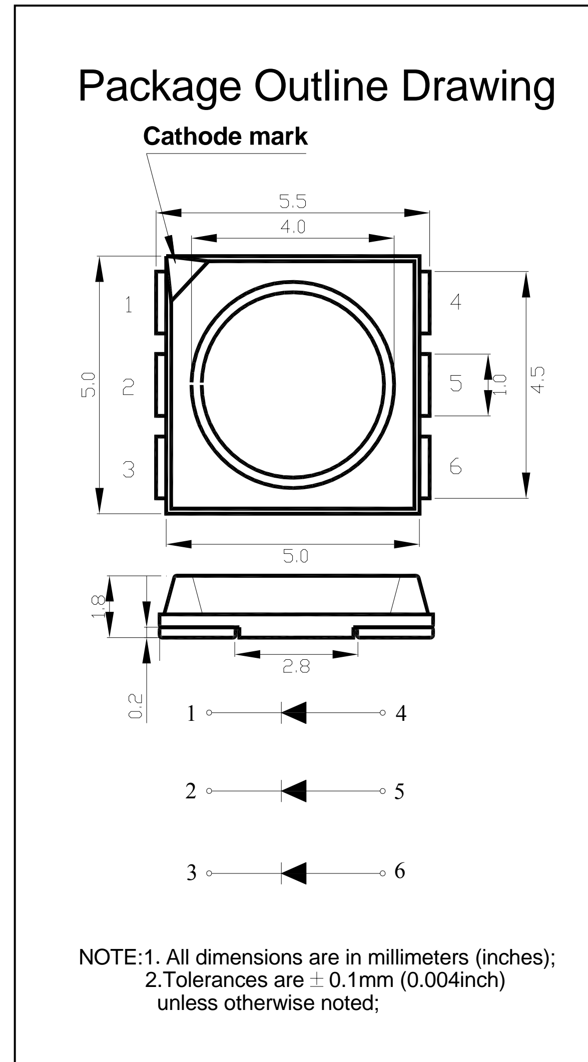
Part No.: SWL50503-01

REV: 1.0

Features:

1. Chip material: InGaN
2. Emitted color: white
3. Resin Color: yellow diffuse
4. Low power consumption.
5. High efficiency.
6. Compatible with infrared and vapor phase reflow solder process.
7. Low current requirement.
8. Tape/1000pcs.
9. This product don't contained restriction substance, compliance RoHS standard.

Package dimensions:



Applications:

1. TV set
2. Monitor
3. Mobile telephone
4. Computer
5. Circuit board
6. Backlight

Absolute maximum ratings(Ta=25℃)

Parameter	Symbol	Rating	Unit
Power Dissipation (per die)	Pd	108	mW
Forward Current (per die)	I_F	30	mA
Peak Forward Current*1	I_{FP}	100	mA
Reverse Voltage (per die)	V_R	5	V
Operating Temperature	Topr	-25~+60	℃
Storage Temperature	Tstg	-40~+85	℃
Soldering Temperature	Tsol	260 (for 5 seconds)	℃

*1Condition for I_{FP} is pulse of 1/10 duty and 0.1msec width

● Electrical and optical characteristics(Ta=25℃)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Forward Voltage*[1]	V_F	I_F=20mA	2.8	3.0	3.6	V
Luminous Intensity*[2]	Iv	I_F=60mA	4000	5000	7000	mcd
Reverse Current*[1]	IR	VR=5V	-	-	10	μA
CIE.Chromatic*[2] Coordinates	X	IF=60mA	0.28	0.31	0.33	
	Y	IF=60mA	0.29	0.32	0.35	
Viewing Angle*[2]	2θ1/2	I_F=60mA	-	120	-	deg

*[1] For each die.

*[2] When 3 Chips are operated simultaneously.

● Typical electro-optical characteristics curves

Fig.1 Relative intensity vs. Wavelength

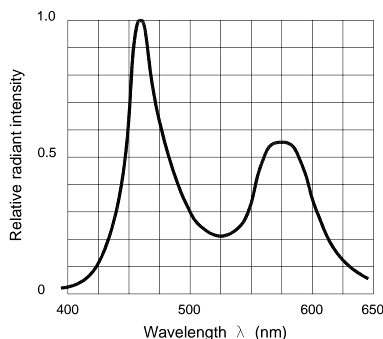


Fig.2 Forward current derating curve vs. Ambient temperature

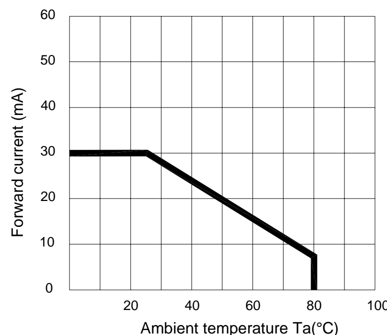


Fig.3 Forward current vs. Forward voltage

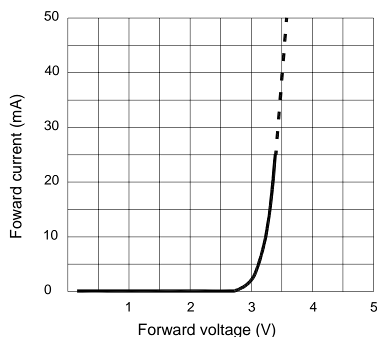


Fig.4 Relative luminous intensity vs. Ambient temperature

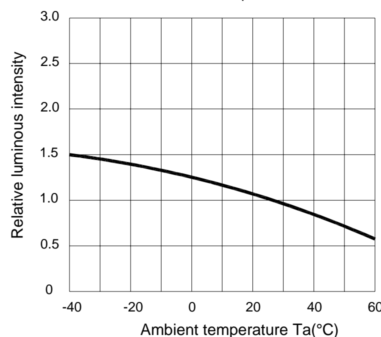


Fig.5 Relatove luminous intensity vs. Forward current

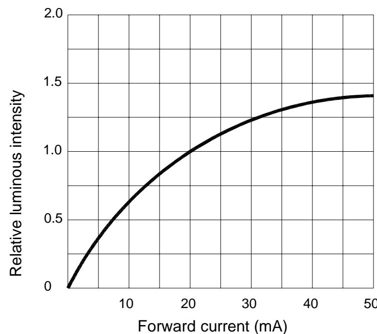
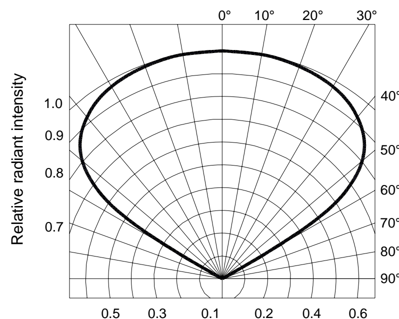


Fig.6 Radiation diagram



Bin Limits

1. Intensity bin limits (At IF= 60mA)

Bin Code	Min. (mcd)	Max. (mcd)
T1	4000	5000
T2	5000	6000
U1	6000	7000

2. Voltage Bin limits (At IF= 20mA) per die

Bin Code	Min. (V)	Max. (V)
G	2.8	3.0
H	3.0	3.2
I	3.2	3.4
J	3.4	3.6

3. Color Bin limits (At IF= 60mA)

Color Ranks		CIE			
W0	X	0.255	0.264	0.28	0.27
	Y	0.245	0.267	0.248	0.23
W1	X	0.264	0.283	0.296	0.28
	Y	0.267	0.305	0.276	0.248
W2	X	0.283	0.304	0.307	0.287
	Y	0.305	0.33	0.315	0.295
W3	X	0.304	0.33	0.33	0.307
	Y	0.33	0.36	0.339	0.315
W4	X	0.287	0.307	0.311	0.296
	Y	0.295	0.315	0.294	0.276
W5	X	0.307	0.33	0.33	0.311
	Y	0.315	0.339	0.318	0.294
W6	X	0.33	0.361	0.355	0.33
	Y	0.36	0.385	0.35	0.318

0.42
0.41
0.40
0.39
0.38
0.37
0.36
0.35
0.34
0.33
0.32
0.31
0.30
0.29
0.28
0.27
0.26
0.25
0.24
0.23
0.22
0.21
0.20
0.19
0.18

0.18 0.20 0.22 0.24 0.26 0.28 0.30 0.32 0.34 0.36 0.38 0.40 0.42

W6
W3
W5
W2
W4
W1
W0

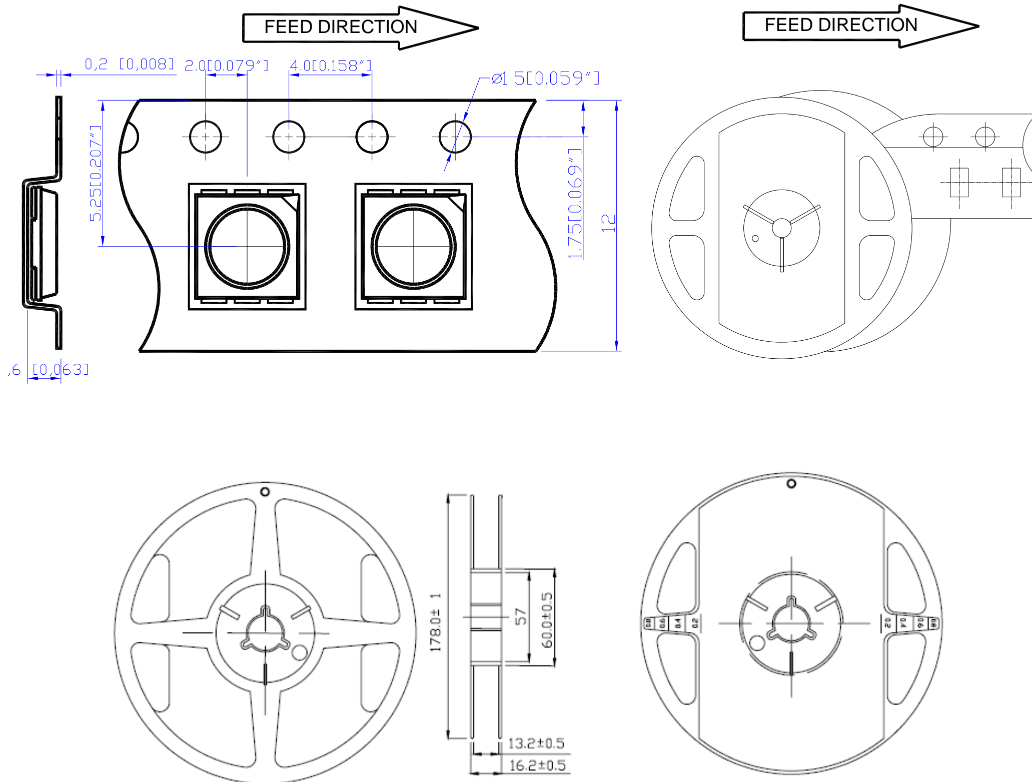
Bin : **x** **x** **-** **x**

Color bin code

Voltage bin code

Intensity bin code

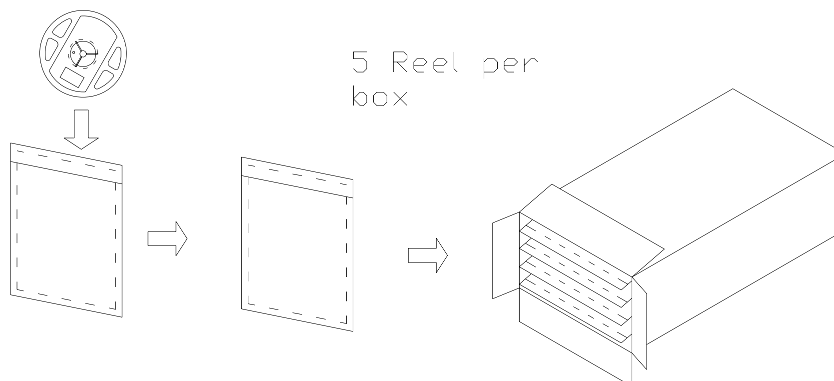
● Taping



Notes:

1. All dimensions are in millimeters(inches)，Tolerance is ±0.1mm Unless otherwise noted .
2. 1000pcs/Tape

● Packing

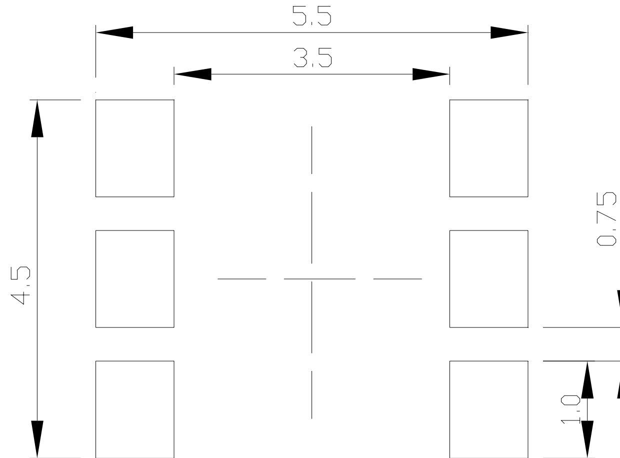


Notes:

1. All Dimensions are in millimeters, Tolerance is ±2.0mm unless otherwise noted.
2. Specifications are subject to change without notice.
3. 1Bag:1000pcs, 1Box:5,000pcs.

● Suggest Soldering Pad Dimensions:

Recommended Soldering Pattern
For Reflow Soldering

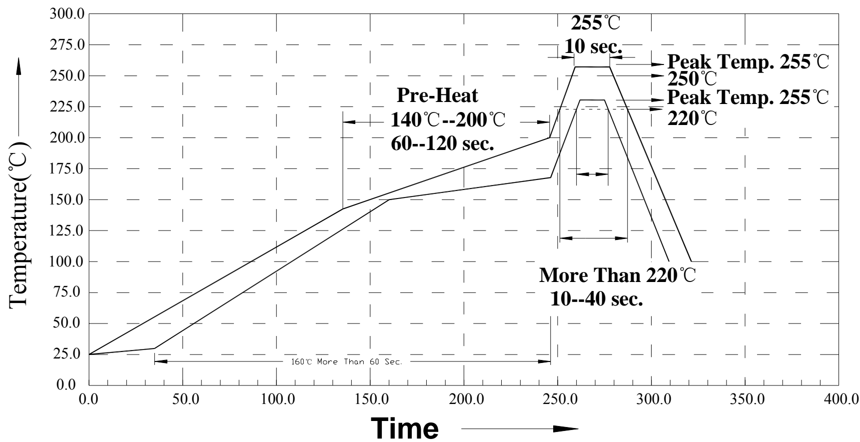


Notes:

1. All Dimensions are in millimeters (inches).

● Suggestion IR Reflow Profile For Pb Free Process

Dgree.C. **Recommended Profile between Assemble And Heat-Resistance Line**



The Profile is available that must to use SnAg(x=3.3-3.8)Cu(y=0.2-0.7)Solder paste