

SPECIFICATION FOR APPROVAL

Customer MonkeyLectric LLC

Product Name SMD RGB

Part No. SDP5050RGBCT

Customer Part No. _____

Date _____

APPROVED SIGNATURES			

APPROVE	CHECK	DRAW

FEATURES:

- AlGaInP Red、 InGaN Blue、 InGaN Green
- Size: 5.0×5.0×1.5MM
- High luminous intensity, high reliability and long life
- With ROHS Compliant

APPLICATIONS:

- Amusement equipment、 Information boards、 Flashlight for digital camera of cellular phone、 Lighting for small size device.

ABSOLUTE MAXIMUM RATINGS (at T_A=25°C):

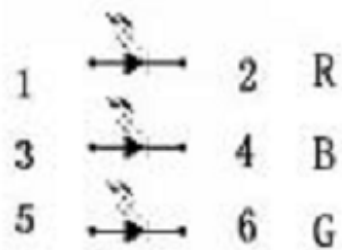
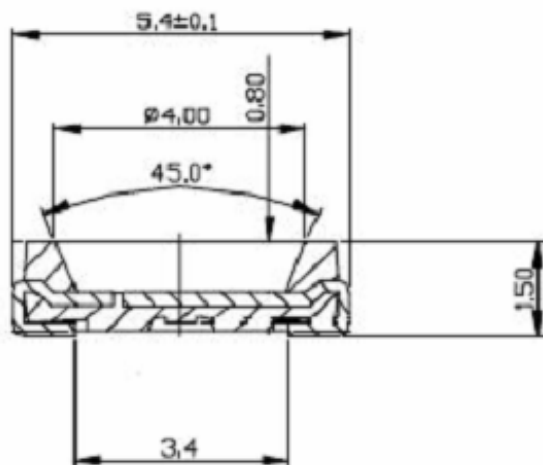
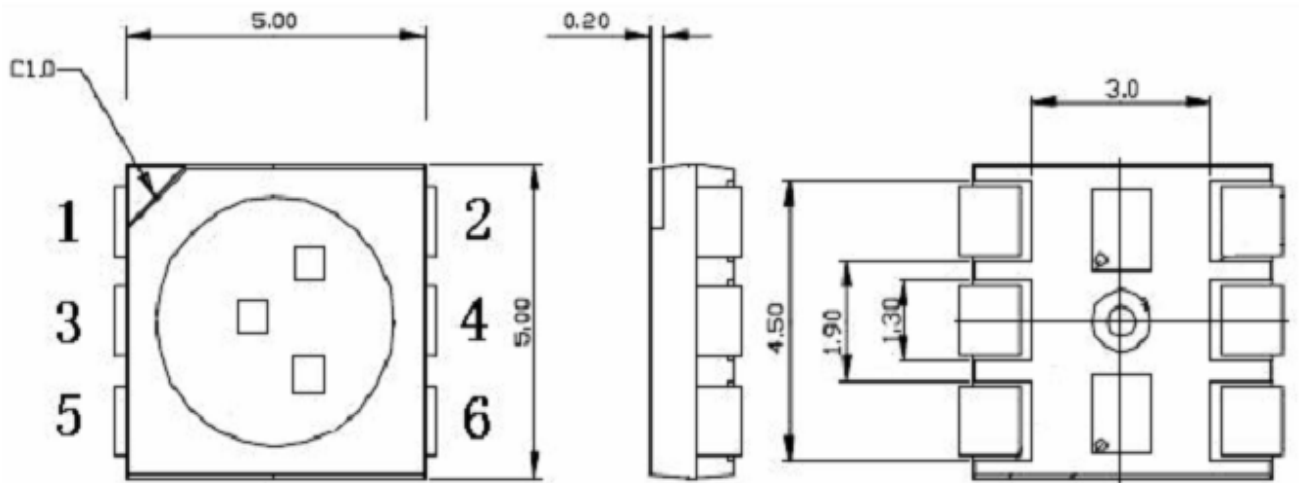
Parameter	Symbol	Min.	Max.	Unit
Forward Current	I _F		100	mA
Pulse Forward Current	I _{FP} *		300	mA
Reverse Voltage	V _R		5	V
Operating Temperature	Topr.	-30	+85	°C
Storage Temperature	Tstg.	-40	+85	°C
Power Dissipation	P _D		350	mW

*Pulse width:Max.10ms, Duty ratio: Max 1/10

Electrical/Optical Characteristics (at T_A=25°C):

Parameter	Condition	Color	Unit	Min.	Typ.	Max.
Forward Voltage V _F	I _F =20mA	Red	V	1.8	2.0	
		Blue		3.0	3.4	
		Green		3.0	3.2	
Reverse Current I _R	V _R =5V	Red	μ A		10	
		Blue			50	
		Green			50	
Peak Wavelength λ _p	I _F =20mA	Red	nm	620	625	
		Blue		465	470	
		Green		518	525	
Spectrum width of half value Δ λ	I _F =20mA	Red	nm		25	
		Blue			30	
		Green			30	
Luminous Intensity I _v	I _F =20mA	Red	mcd	500	800	
		Blue		500	800	
		Green		800	1200	
Viewing Angle 2 θ _{1/2}		Red	(°)		120	
		Blue			120	
		Green			120	

Package Dimensions:



- ✧ All dimensions are millimeters.
- ✧ Tolerance is 0.2mm unless otherwise noted.

CHARACTERISTIC CURVES:

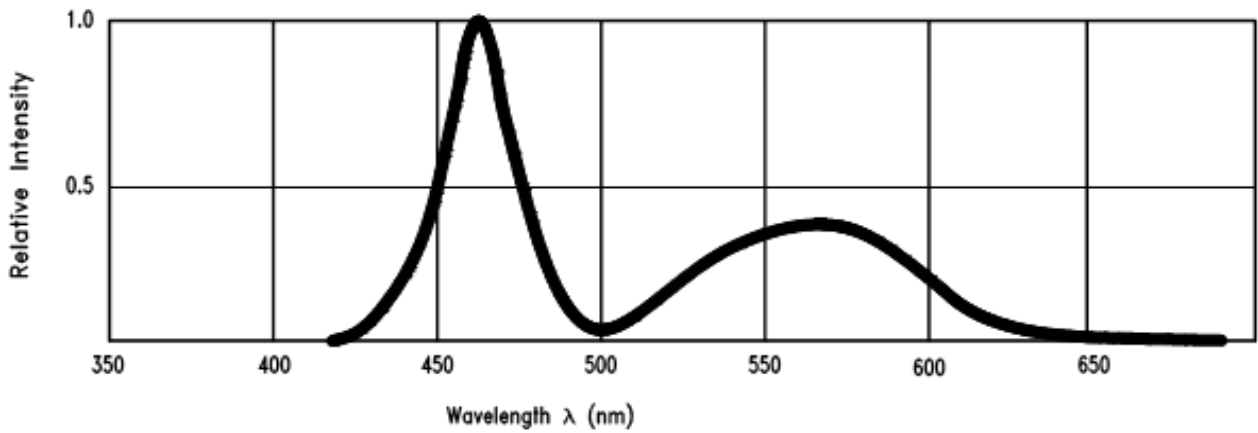


Fig.1 Relative Intensity vs. Wavelength

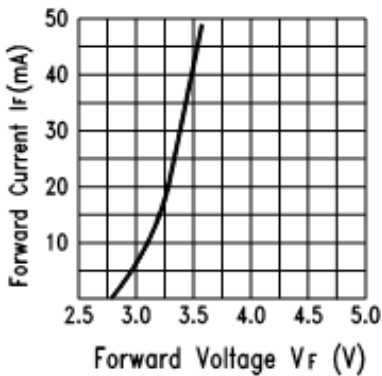


Fig.2 Forward Current vs. Forward Voltage

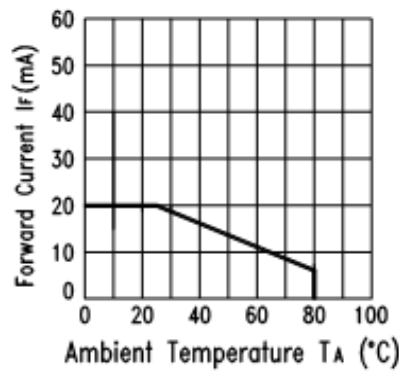


Fig.3 Forward Current Derating Curve

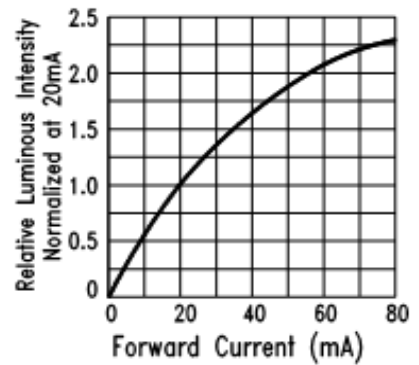


Fig.4 Relative Luminous Intensity vs. Forward Current

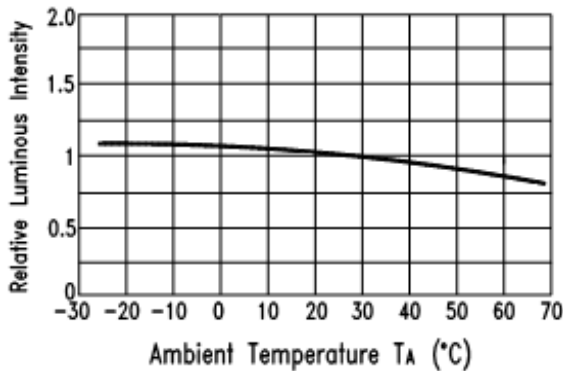


Fig.5 Luminous Intensity vs. Ambient Temperature

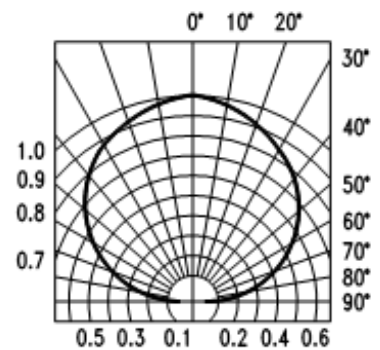


Fig.6 Spatial Distribution

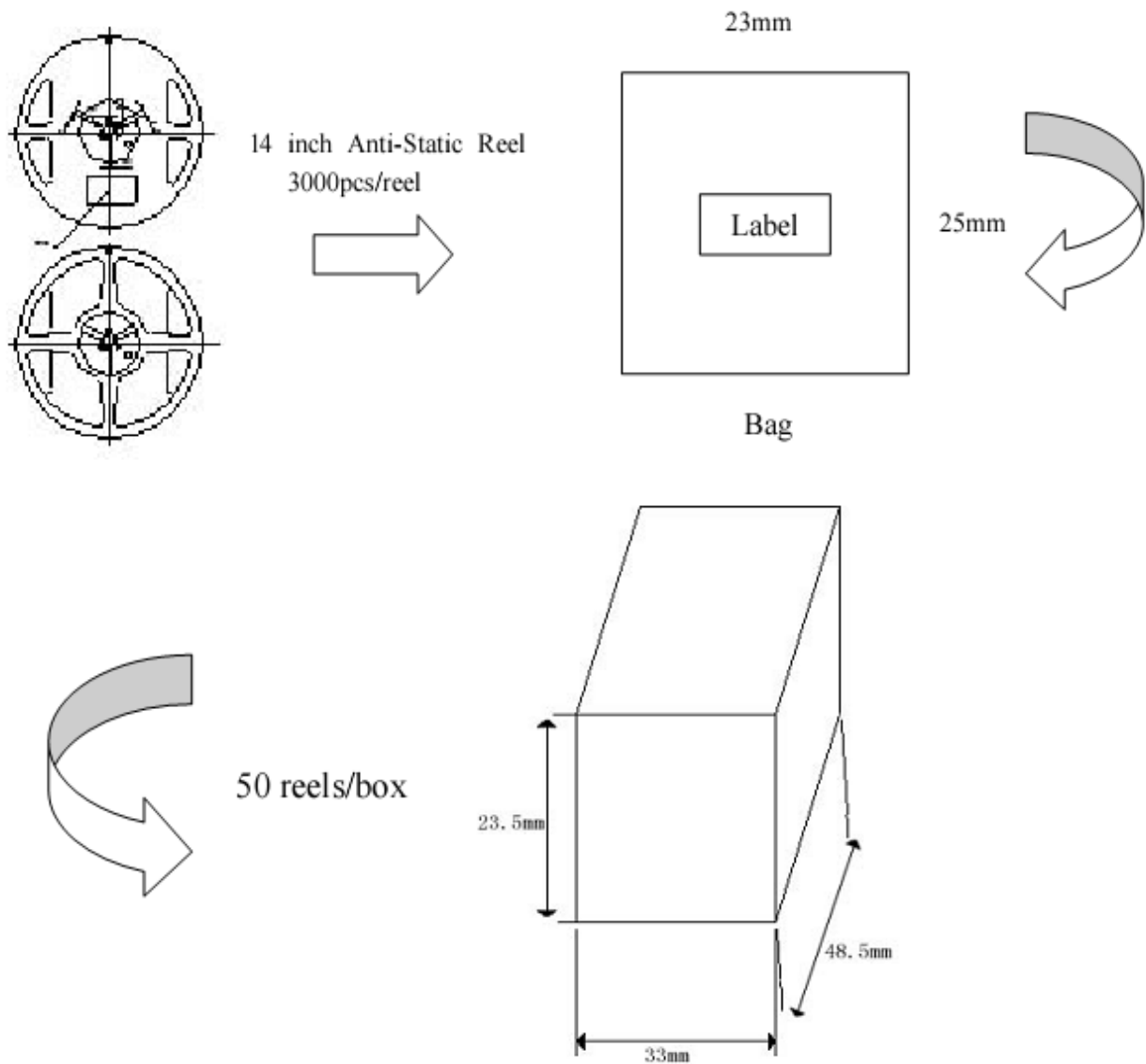
RELIABILITY TEST ITEM AND CONDITION:

No	Item	Test Condition	Sample Number	Criteria for Judging	Ac/Re
1	Solderability	$T=235 \pm 5^{\circ}\text{C}$ $T=5\text{sec.}$	15	Good wetting	0/1
2	Soldering heat	$T=260 \pm 5^{\circ}\text{C}$ $T=10\text{sec.}$	15	$I_V \geq \text{LSL}^*$ $V_F \leq \text{USL}^*$ $I_R \leq \text{USL}$	0/1
3	Rapid change of temperature followed by: damp heat, cyclic	L: -40°C 10min \updownarrow (2~3) min H: $+100^{\circ}\text{C}$ 10min 5cycle $T = (25 \sim 55)^{\circ}\text{C}$ RH: (90~95) % 2cycle 48h recovery time 2h	11	$I_V \geq \text{LSL}$ $V_F \leq \text{USL}$ $I_R \leq \text{USL}$	0/1
4	Damp heat, cyclic	$T = (25 \sim 55)^{\circ}\text{C}$ RH = (90~95) % 6 cycle 144h recovery time 2h	11	$I_V \geq 0.7\text{LSL}$ $V_F \leq 1.1\text{USL}$ $I_R \leq 2\text{USL}$	0/1
5	Electrical endurance	$I_f = 30\text{mA}$ $T = 1000\text{h}$	22	$I_V \geq 0.7\text{LSL}$ $V_F \leq 1.1\text{USL}$ $I_R \leq 2\text{USL}$	0/1
6	Storage at high temperature	$T_{\text{stg}} = 100 \pm 2^{\circ}\text{C}$ $t = 1000\text{h}$	15	$I_V \geq \text{LSL}$ $V_F \leq \text{USL}$ $I_R \leq \text{USL}$	0/1
7	Terminal strength	Tensile: $W = 5\text{N}$ $t = 30\text{s}$ Bending: $W = 2.5\text{N}$ 2times	15	No damage	0/1

*U.S.L.: Upper Standard Level

* L.S.L.: Lower Standard Level

PACKAGING:



APPLICATION NOTES:

1) Soldering:

① Manual soldering by soldering iron:

The use of a soldering iron of less than 25W is recommended and the temperature of the iron must be kept at no higher than 300°C.

② Reflow soldering:

a. The temperature profile as shown in Fig.3 is

recommended for soldering SMD LED by the reflow furnace.

- b. Care must be taken that the products be handled after their temperature has dropped down to the normal room temperature after soldering.

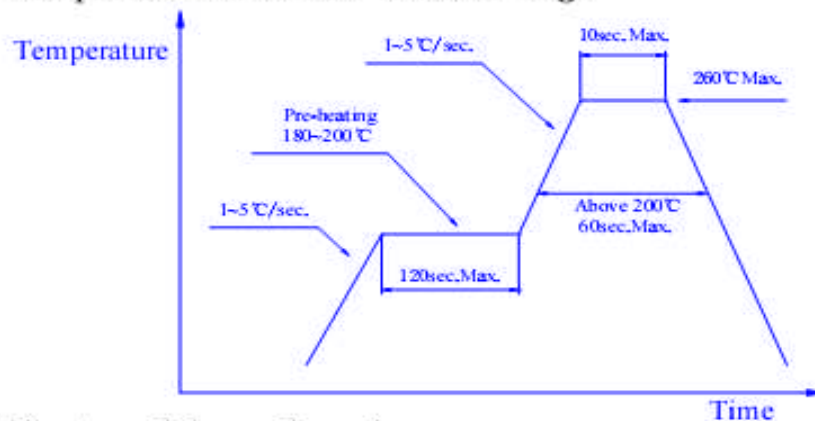


Fig.3

2) Post solder cleaning:

When cleaning after soldering is needed, the following conditions must be adhered to.

①Cleaning solvents: Freon TF or equivalent or alcohol.

②Temperature: 50°C Max. for 30 seconds or
30°C Max. for 3 minutes

③Ultrasonic: 300W Max.

3) OTHERS:

- a. Care must be taken not to cause stress to the epoxy resin portion of SMD LED while it is exposed to the high temperature.
- b. Care must be taken not to rub the epoxy resin portion of SMD LED with a hard or sharp edged article such as the sand blast and the metal hook as the epoxy resin is rather soft and liable to be damaged.

