LUMISEE®

•HIGH-POWER CERAMIC PACKAGE LED – 3535 RGB SERIES
L35C-RGB13C1A-LSLV

Product Brief（产品简介）

Description （描述）

. This surface-mount LED size is standard package: 3.45x3.45x2.26mm
. The L35C series is designed for high flux output applications with high current operation capability.

Features And Benefits（特性优点）

. Designed for high current operation
. Low thermal resistance
. Pb-free reflow soldering application

Key Applications （应用）

- Indoor lighting
- Outdoor lighting
- Architectural lighting
- Industrial lighting
- Plant Factory
- Flower Production
- Tissue Culture
- Refreshment

Table 1. Product Selection Table（产品目录）

Parameter	Peak Wavelength		
	Color	**Min.**	**Max.**
L35C-RGB13C1A-LSLV	Red	620	622.5
	Green	522.5	525
	Blue	455	457.5

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Performance

Table 2. Electro Optical Characteristics （光电特性）, Ta = 25℃, RH60%

Color	Luminous Flux (350mA)	
	Min.	Max.
Red	60	65
Green	110	115
Blue	20	22

Color	Wavelength Bin (nm)	
	Min.	Max.
Red	620	622.5
Green	522.5	525
Blue	455	457.5

•Wavelength measurement tolerance is ±2nm.
• Correlated Color Temperature is derived from the CIE 1931 Chromaticity diagram.
• The luminous intensity Iv was measured at the peak of the spatial pattern which may not be aligned with the mechanical axis of the LED package.
• The lumen table is only for reference.

Performance

Table 3. Electro Optical Characteristics （光电特性）, IF = 350mA , Ta = 25℃, RH60%

Item	Symbol	Color	Value			Unit	Test Condition
			Min.	Typ.	Max	Min.	
Forward Voltage	VF	Red	2.2	-	2.4	V	IF=350mA
		Green	2.8	-	3.0		
		Blue	3.0	-	3.2		
Reverse Current	IR	RGB	-	-	10	μA	VR=5V
Viewing Angle	2θ1/2	RGB	-	120	-	°	IF=350mA
Electrostatic Discharge	ESD	RGB	2000	-	-	V	HBM
Thermal Resistance	(Rth j-sp)	Red	-	16	-	℃/W	IF=350mA
		Green	-	16	-		
		Blue	-	18	-		

Table 4. Absolute Maximum Ratings （最大额定参数）, Ta = 25℃, RH60%

Item	Symbol	Absolute Maximum Ratings	Unit
Forward Current	IF	400	mA
Power Dissipation	PD	R: 850; G/B: 1200	mW
Reverse Voltage	VR	5	V
Operating Temperature	Topr	-40～+105	℃
Storage Temperature	Tstg	-40～+105	℃
Junction Temperature	Tj	125	℃
Electrostatic Discharge	Tsld	230℃ or 260℃ for 10sec	-

- Tolerance of measurement of Luminous Flux or Radiometric Power: ±10%
- Tolerance of measurement of wavelength: ±2nm
- Tolerance of measurement of Forward Voltage: ±0.05V
- All the data are just for reference, specific parameters refer to the label

Relative Spectral Distribution

Fig 1. Color Spectrum （光谱图）, Ta = 25℃, RH60%

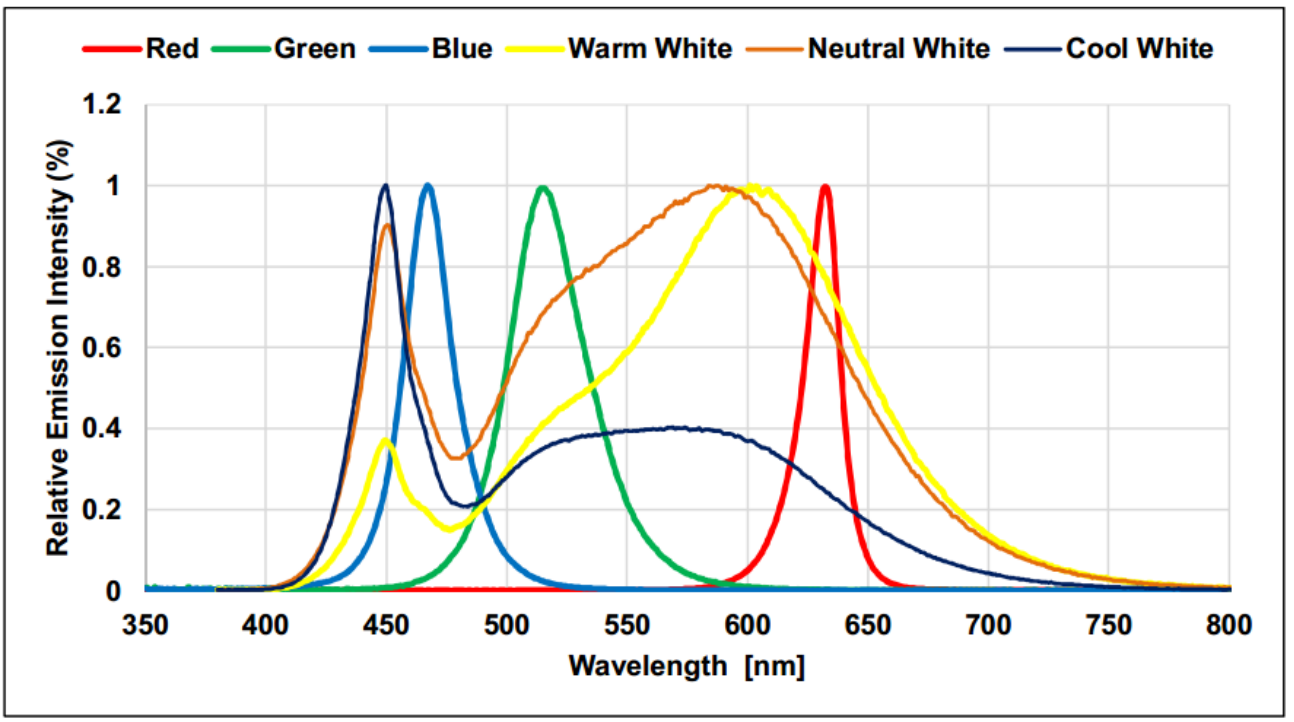
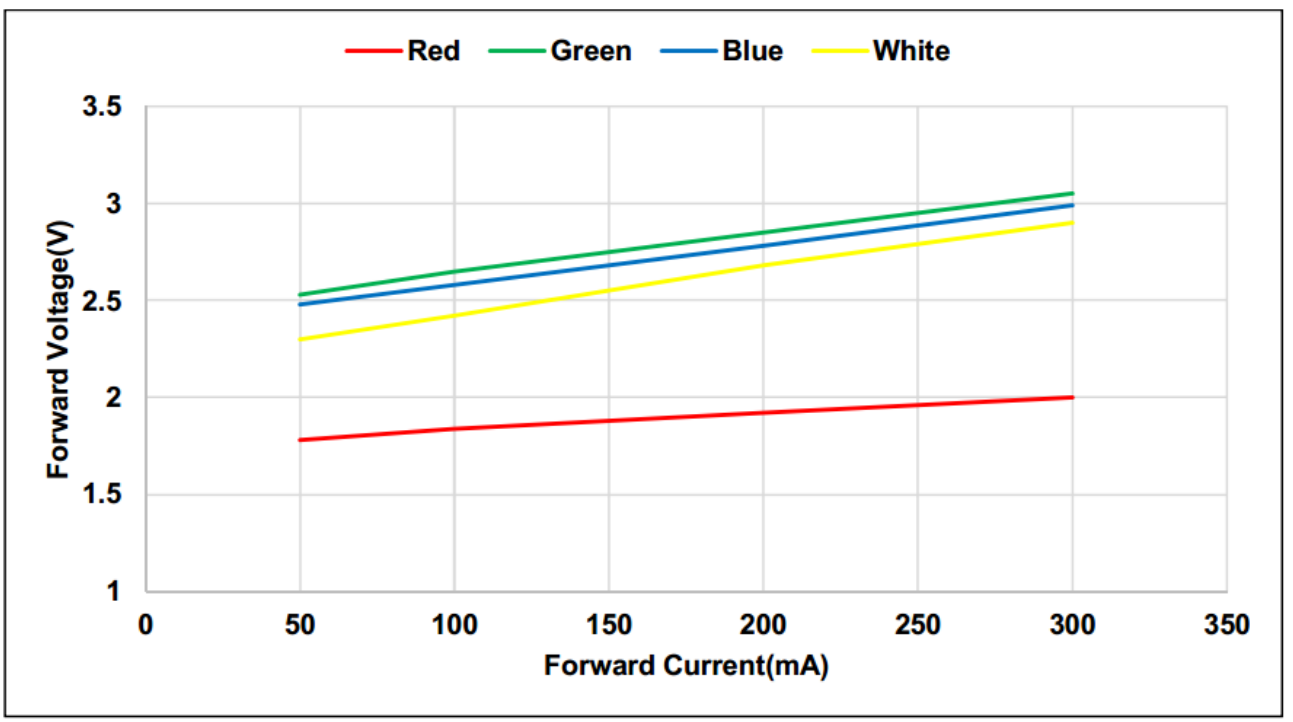
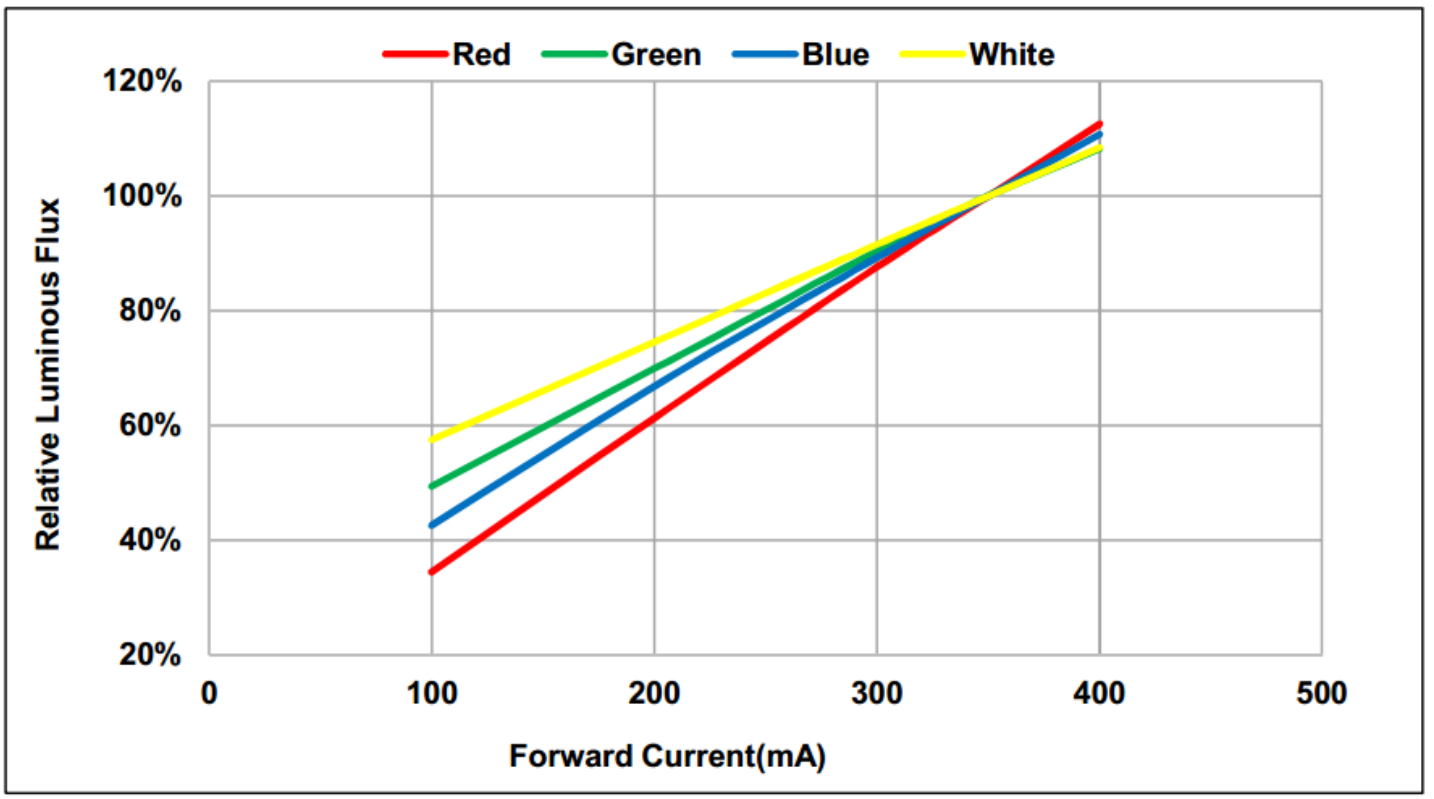


Fig 2. Forward Voltage vs. Forward Current （电压与电流关系）, Ta = 25℃



Relative Spectral Distribution

Fig 3. IF Vs. Relative Intensity （亮度与电流关系）, Ta = 25℃



Outline Vs. Recommended Solder Pad

Fig 4. Mechanical Dimensions（产品尺寸）

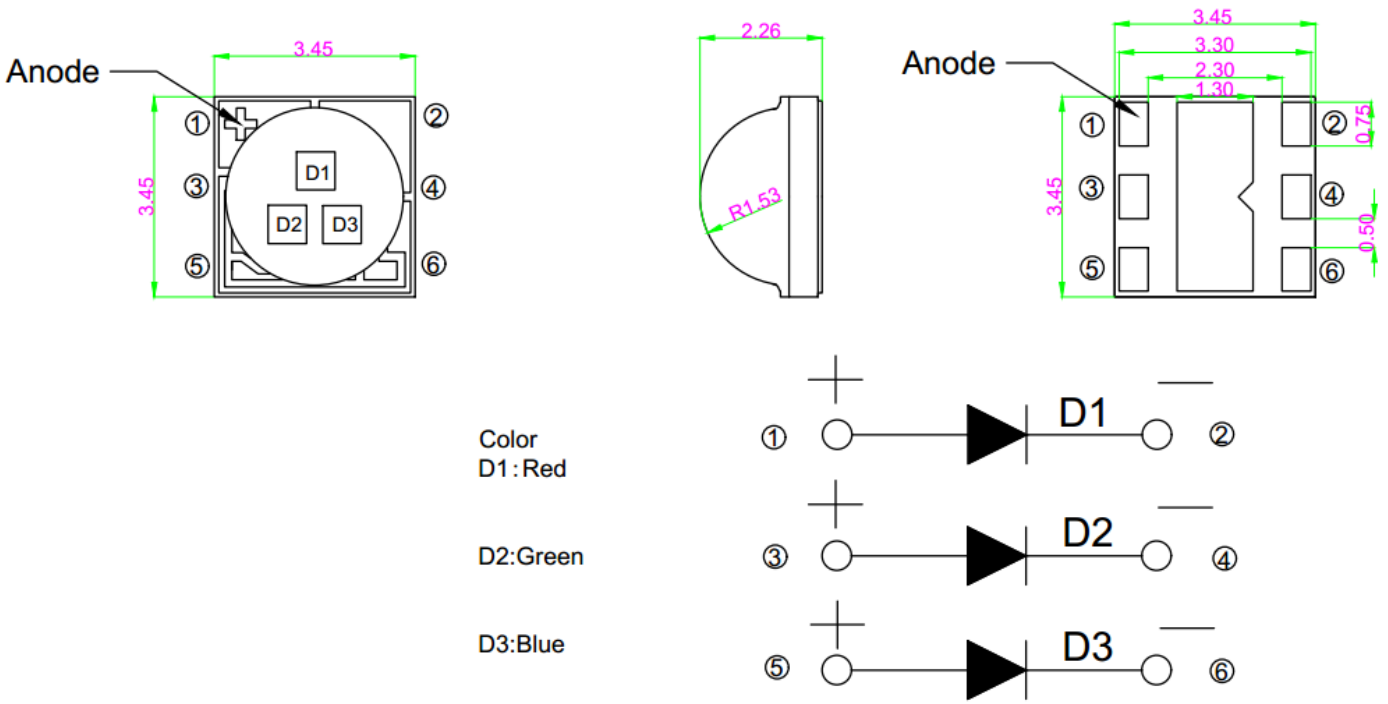
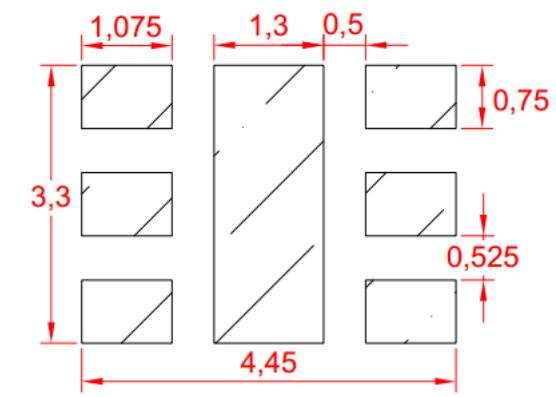
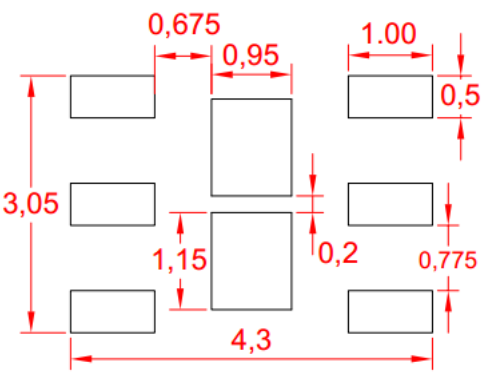


Fig 5. Recommended Solder Pad



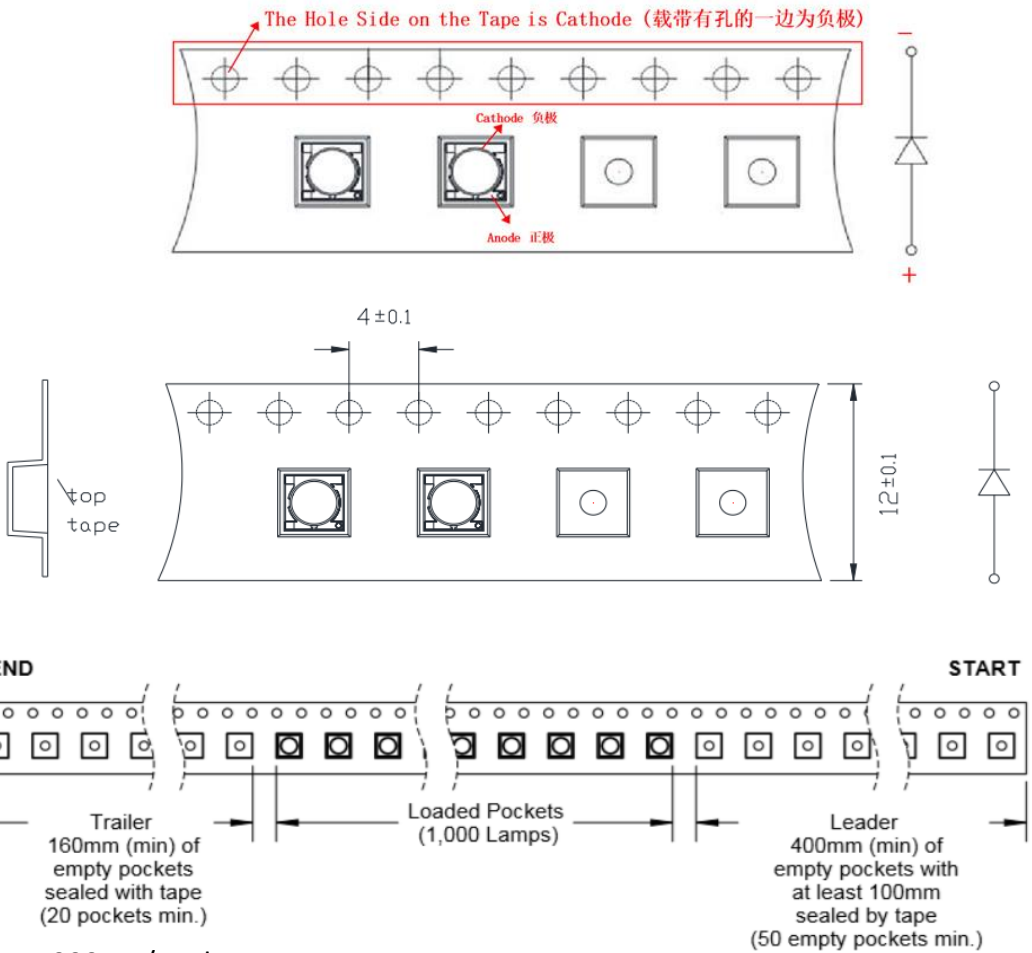
Recommended PCB Solder Pad



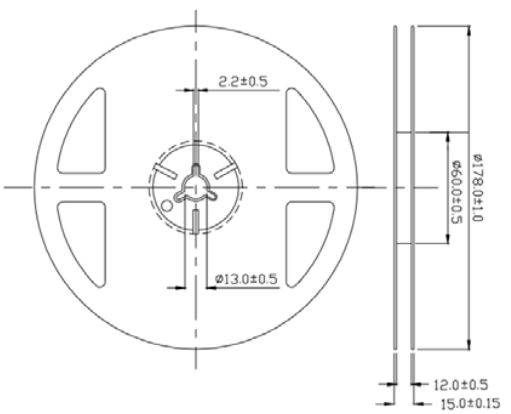
Stencil: 0.12mm
Recommended Stencil Pattern

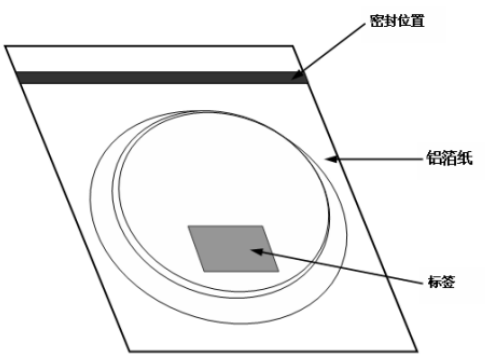
Packaging Information

Fig 6. Reel Packaging 1000pcs/Reel（卷带包装, 1000pcs/卷）



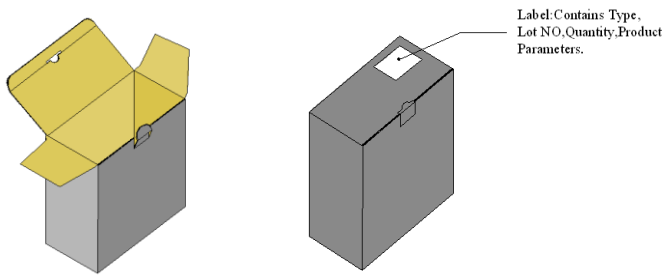
- Quantity : Max 1000pcs/Reel
- Cumulative Tolerance : Cumulative Tolerance/10 pitches to be ±0.25mm
- Adhesion Strength of Cover Tape Adhesion strength to be 0.1-0.7N when the cover tape is turned off from the carrier tape at the angle of 10˚ to the carrier tape.
- Package : P/N, Manufacturing data Code No. and Quantity to be indicated on a damp proof Package.





Packaging Information

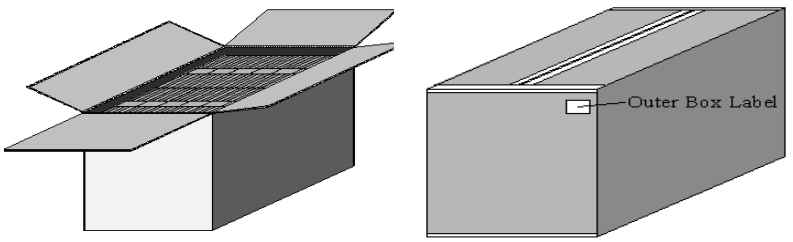
Inner Box（内箱）



* Capacity 5 or 10 reels per box（内箱容量：5或10卷）

Label（标签）

Outer Box（外箱）



* Capacity 30 or 60 reels per box（外箱容量：30或60卷）

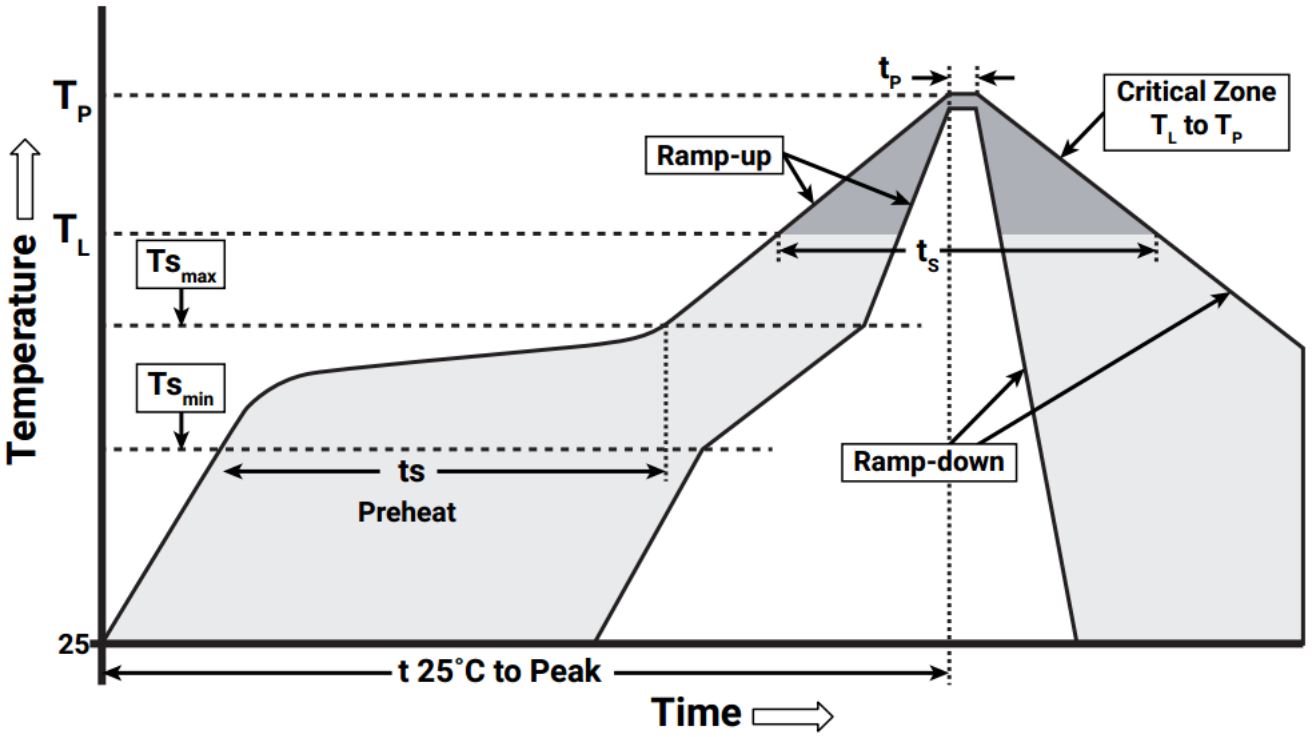
Table 5. Part Numbering System : L □□ □ — □□□ □ □ □ □ - □□□□

	X1	X2		X3	X4	X5	X6	X7		X8
L	35	C	-	RGB	1	3	C1	A	-	LSLV

Item Number Code	Description	Item Number
X1	LED Type Code 产品代码	60: 6060; 30: 3030; 35: 3535;
X2	Light Color 发光颜色	W: White Color; C: Colored; I: IR; U: UV
X3	Wavelength 波长	280: 280nm; 365: 365-370nm; 390: 395-400nm
X4	No. of Serial Chip 晶片串联数量	1-Z.
X5	No. of Parallel Chip 晶片并联数量	1-Z.
X6	Lead Frame Code 支架代码	E1: EMC; E2: SMC; C1: Al_2O_3 Ceramic; C2: AlN Ceramic
X7	Viewing Angle 发光角度	A: 120 Deg. ; B: 30 Deg. ; C: 60 Deg. ; D: 90 Deg.
X8	Material Code 物料代码	LumiS Material Code

Reflow Soldering

Recommended Mid-Temperature Solder Paste
建议使用中温锡膏



Profile Feature	Lead-Free Solder
Average Ramp-Up Rate (Ts_{max} to Tp)	1.2 °C/second
Preheat: Temperature Min (Ts_{min})	120 °C
Preheat: Temperature Max (Ts_{max})	170 °C
Preheat: Time (ts_{min} to ts_{max})	65-150 seconds
Time Maintained Above: Temperature (T_L)	217 °C
Time Maintained Above: Time (t_L)	45-90 seconds
Peak/Classification Temperature (Tp)	235 - 245 °C
Time Within 5 °C of Actual Peak Temperature (tp)	20-40 seconds
Ramp-Down Rate	1 - 6 °C/second
Time 25 °C to Peak Temperature	4 minutes max.

Pre-caution

Caution

1. Reflow soldering is recommended not to be done more than two times. In the case of more than 24 hours passed soldering after first, LEDs will be damaged.
2. Repairs should not be done after the LEDs have been soldered. When repair is unavoidable, suitable tools must be used.
3. Die slug is to be soldered.
4. When soldering, do not put stress on the LEDs during heating.
5. After soldering, do not warp the circuit board.

Notes on LumiSee Series soldering:

1. Recommend to use reflow machine.
2. Recommend to use heating plate soldering.
3. Manual soldering is not recommended.

Notes on reflow process:

1. To confirm whether the actual temperature curve in the reflow soldering conditions comply with recommended conditions. LEDs are guaranteed for one time reflow.
2. During reflow process do not apply force on LED active area.
3. After reflow process, PCB board should be cooled down before packing or storage.

Published by

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Company Profile

Set up as a high-tech company in 2011, LumiSee has been dedicated in the R&D and manufacturing of High Power Ceramic products such as 3535/5050 RGB/RGBW/R/G/B/Y LED diode, UVA and IR recognition.

Based on the technological innovation & healthy life, LumiSee sticks to safety and health, quality and innovation with the concept of creating a new vision of LED technology and providing new applications in LED industry, further more LumiSee would take good advantages of Outdoor Lighting, Plant Glowing, health and safety, energy saving and environmental protection.

With years of engineers and a professional management team in LED industry, LumiSee has established strategical cooperation with famous companies both at home and abroad, but also developed together the LED applications of curing, health, medical care, security and safety etc.

LumiSee focuses on independent innovation and R&D. Now with dozens of inventions and utility model patents having been authorized, LumiSee would continue to recruit elites for industry innovations, improvements and services. LumiSee could strive to be one of the most influential companies in the field of health and safety of global LED industry.