

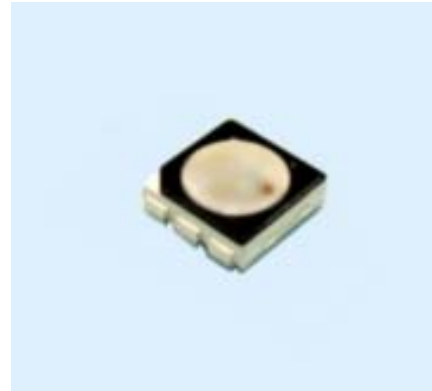
**Technical Data Sheet**

**Luminosity Full Color LED**

**61-036/RSGBB7C-B12/ET**

**Features**

- White package with black surface.
- Optical indicator.
- Colorless clear window.
- Ideal for backlight and light pipe application.
- Interior reflector.
- Wide viewing angle.
- Suitable for vapor-phase reflow, infrared reflow and wave solder processes.
- Computable with automatic placement equipment.
- Pb-free.
- The product itself will remain within RoHS compliant version.



**Descriptions**

- Due to the package design, 61-036 has wide viewing angle , low power consumption and adjusting each color is possible thanks to serial connection by 6 terminal connection (Individual driving by each terminal) in case of using several number of LED. And makes it ideal for light pipe application.

**Applications**

- Amusement equipment.
- Information boards.
- Flashlight for digital camera of cellular phone.

**Device Selection Guide**

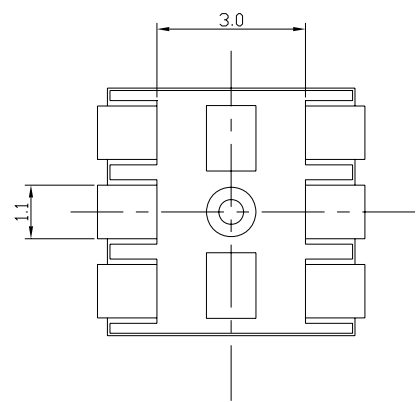
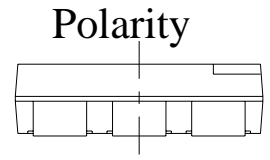
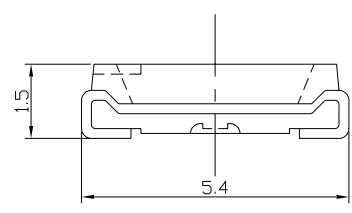
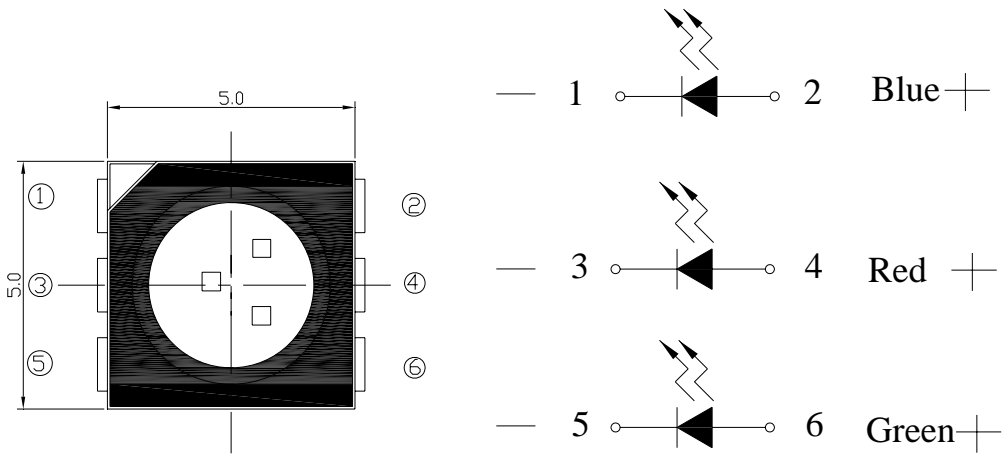
Chip		Emitted Color	Resign Color
Type	Material		
RS	AlGaInP	Brilliant Red	Water Clear
GB	InGaN	Brilliant Green	
B7	InGaN	Blue	

Technical Data Sheet

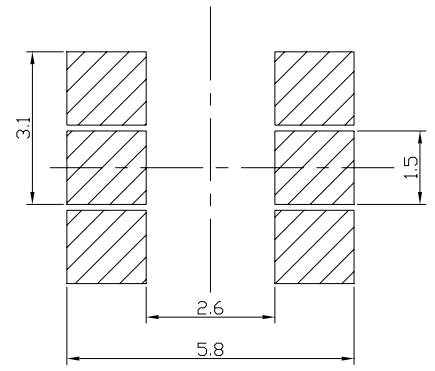
Luminosity Full Color LED

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Package Outline Dimensions



Recommended soldering pad design



Note: The tolerances unless mentioned is  $\pm 0.1\text{mm}$  ,Unit = mm



## Technical Data Sheet

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## Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Rating		Unit
Reverse Voltage	V <sub>R</sub>	5		V
Forward Current	I <sub>F</sub>	RS	50	mA
		GB	30	
		B7	30	
Peak Forward Current (Duty 1/10 @ 1KHZ)	I <sub>FP</sub>	RS	100	mA
		GB	100	
		B7	100	
Power Dissipation	Pd	RS	120	mW
		GB	110	
		B7	110	
Electrostatic Discharge(HBM)	ESD	RS	2000	V
		GB	1000	
		B7	1000	
Operating Temperature	Topr	-40 ~ +85		°C
Storage Temperature	Tstg	-40~ +90		°C
Soldering Temperature	Tsol	Reflow Soldering : 260 °C for 10 sec. Hand Soldering : 350 °C for 3 sec.		



## Technical Data Sheet

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## Electro-Optical Characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition	
Luminous Intensity	I <sub>v</sub>	RS	360	-----	565	mcd	I <sub>F</sub> =20mA
		GB	1120	-----	1800		
		B7	285	-----	450		
Viewing Angle	2θ <sub>1/2</sub>	-----	120	-----	deg	I <sub>F</sub> =20mA	
Peak Wavelength	λ <sub>p</sub>	RS	-----	632	-----	nm	I <sub>F</sub> =20mA
		GB	-----	518	-----		
		B7	-----	468	-----		
Dominant Wavelength	λ <sub>d</sub>	RS	621.5	-----	629.5	nm	I <sub>F</sub> =20mA
		GB	520.0	-----	535.0		
		B7	467.5	-----	476.5		
Spectrum Radiation Bandwidth	Δλ	RS	-----	20	-----	nm	I <sub>F</sub> =20mA
		GB	-----	35	-----		
		B7	-----	35	-----		
Forward Voltage	V <sub>F</sub>	RS	1.75	-----	2.35	V	I <sub>F</sub> =20mA
		GB	2.75	-----	3.95		
		B7	2.75	-----	3.95		
Reverse Current	I <sub>R</sub>	RS	-----	-----	10	μA	V <sub>R</sub> =5V
		GB	-----	-----	50		
		B7	-----	-----	50		

## Notes:

1. Tolerance of Luminous Intensity: ±11%
2. Tolerance of Dominant Wavelength: ±1 nm



## Technical Data Sheet

## Luminosity Full Color LED

**61-036/RSGBB7C-B12/ET****Bin Range of Luminous Intensity**

Symbol		Bin Code	Min.	Max.	Unit	Condition
I <sub>v</sub>	RS	T2	360	450	mcd	I <sub>F</sub> =20mA
		U1	450	565		
	GB	W1	1120	1420		
		W2	1420	1800		
	B7	T1	285	360		
		T2	360	450		

**Bin Range of Dominant Wavelength**

Symbol		Bin Code	Min.	Max.	Unit	Condition
λ <sub>d</sub>	RS	E5	621.5	625.5	nm	I <sub>F</sub> =20mA
		E6	625.5	629.5		
	GB	X	520.0	525.0		
		Y	525.0	530.0		
		Z	530.0	535.0		
	B7	A10	467.5	470.5		
		A11	470.5	473.5		
		A12	473.5	476.5		

**Notes:**

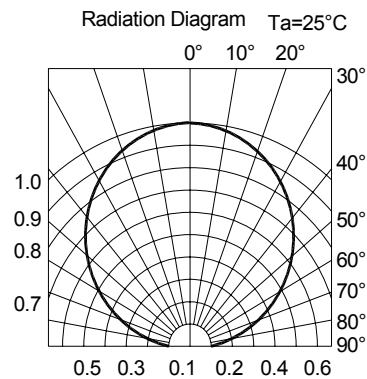
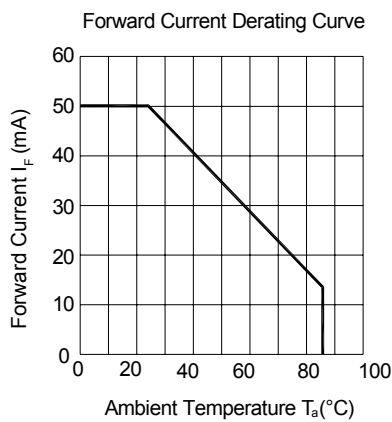
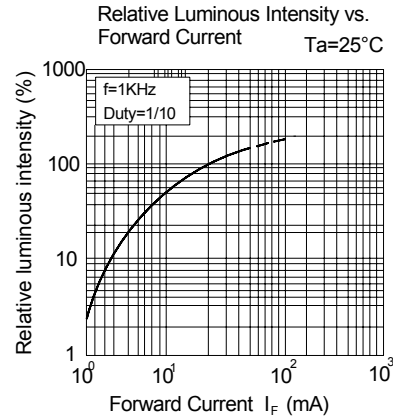
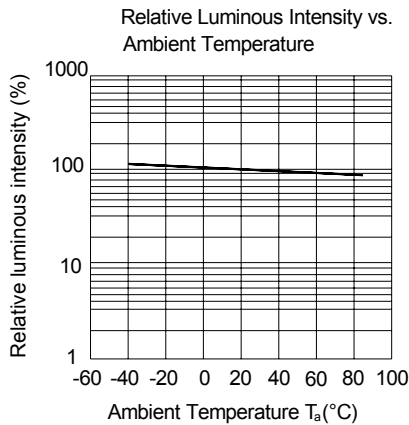
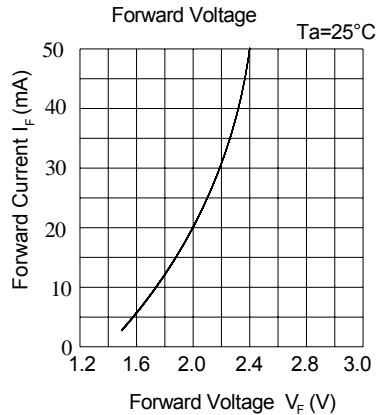
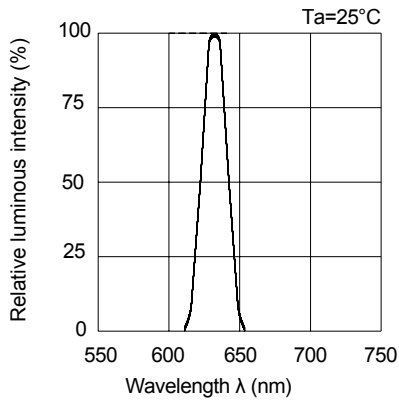
- 1.Tolerance of Luminous Intensity  $\pm 11\%$
- 2.Tolerance of Dominant Wavelength  $\pm 1$  nm

Technical Data Sheet

Luminosity Full Color LED

**61-036/RSGBB7C-B12/ET**

Typical Electro-Optical Characteristics Curves (RS)

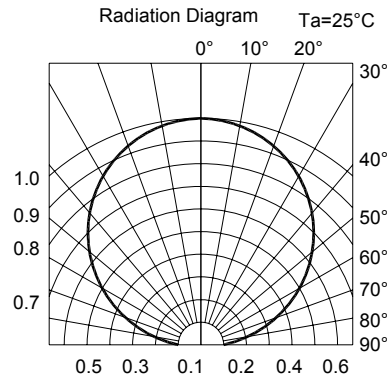
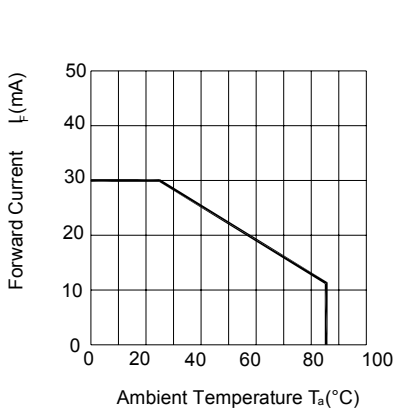
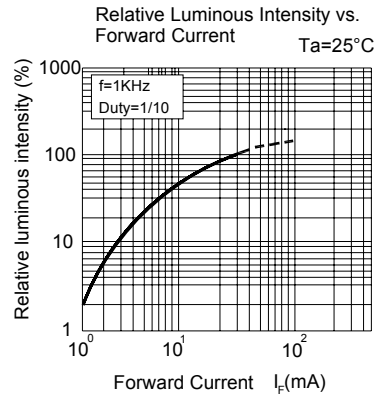
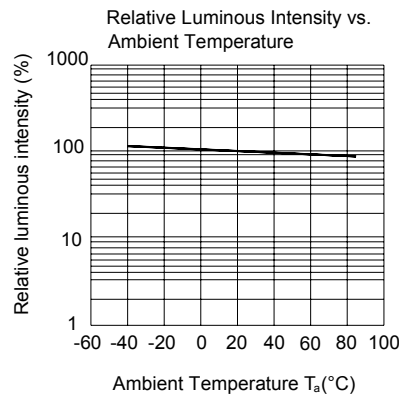
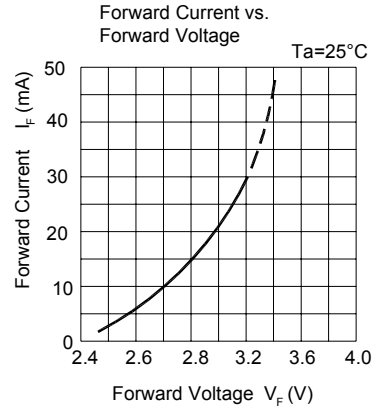
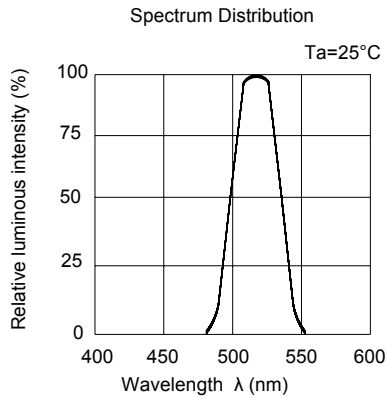


Technical Data Sheet

Luminosity Full Color LED

**61-036/RSGBB7C-B12/ET**

Typical Electro-Optical Characteristics Curves (GB)

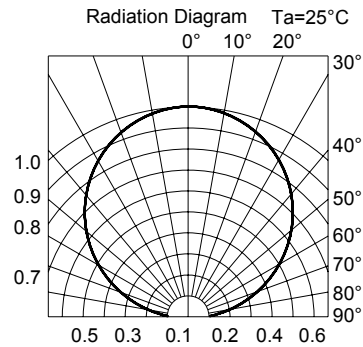
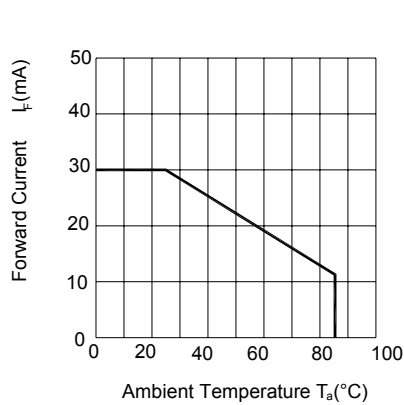
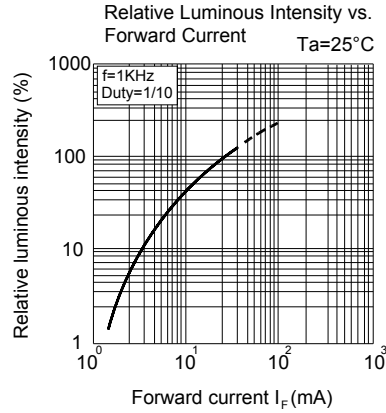
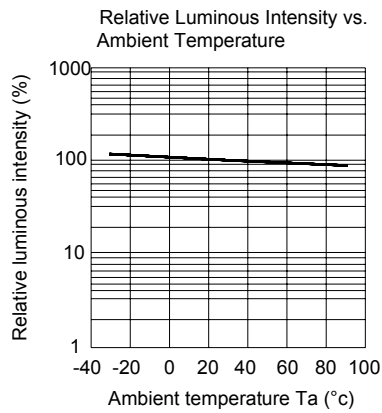
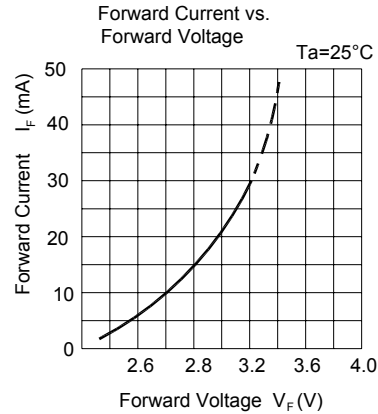
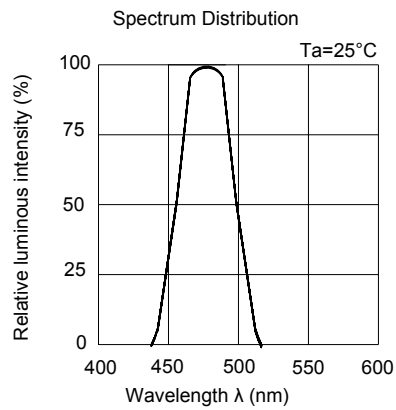


Technical Data Sheet

Luminosity Full Color LED

**61-036/RSGBB7C-B12/ET**

Typical Electro-Optical Characteristics Curves (B7)







Technical Data Sheet

Luminosity Full Color LED

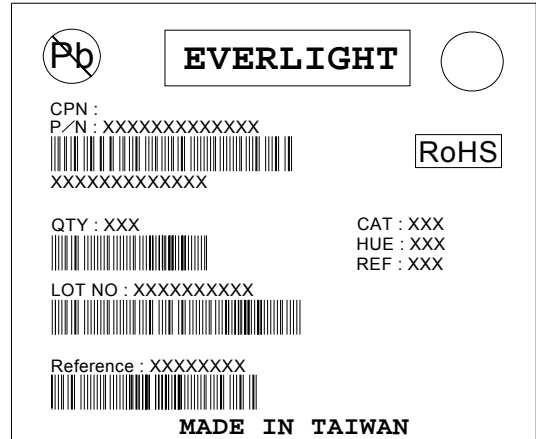
61-036/RSGBB7C-B12/ET

Label Explanation

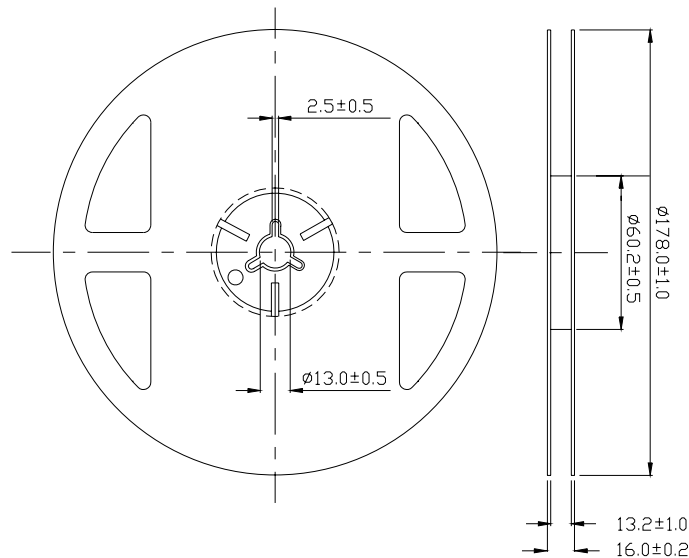
CAT: Luminous Intensity Rank

HUE: Dom. Wavelength Rank

REF: Forward Voltage Rank



Reel Dimensions



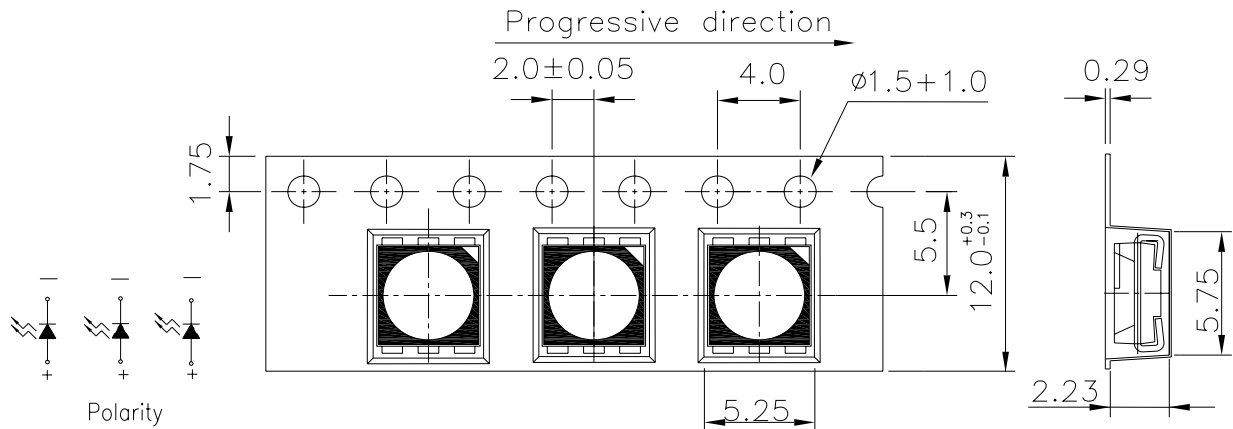
Note: Tolerance unless mentioned is ±0.1mm; Unit = mm

Technical Data Sheet

Luminosity Full Color LED

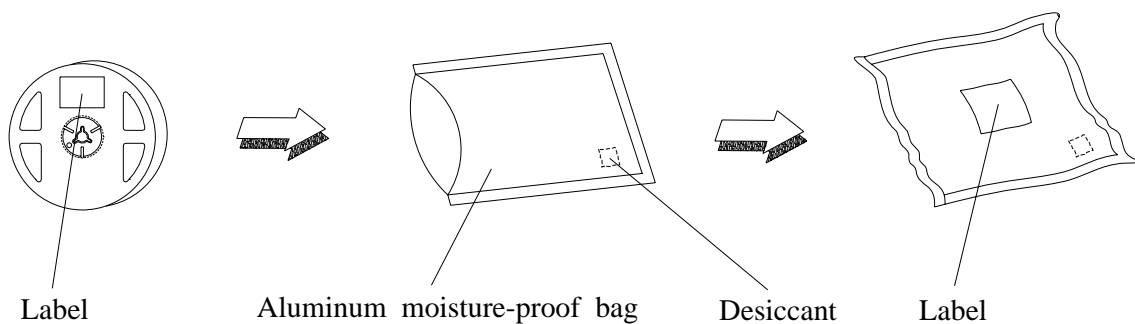
**61-036/RSGBB7C-B12/ET**

Carrier Tape Dimensions: Loaded Quantity 800 pcs Per Reel



**Note:** Tolerance unless mentioned is  $\pm 0.1\text{mm}$ ; Unit = mm

Moisture Resistant Packaging



**Technical Data Sheet****Luminosity Full Color LED****61-036/RSGBB7C-B12/ET****Reliability Test Items and Conditions**

The reliability of products shall be satisfied with items listed below.

Confidence level : 90%

LTPD : 10%

No.	Items	Test Condition	Test Hours/Cycles	Sample Size	Ac/Re
1	Reflow Soldering	Temp. : 260°C±5°C Min. 5sec.	6 Min.	22 PCS.	0/1
2	Temperature Cycle	H : +100°C 15min ∫ 5 min L : -40°C 15min	300 Cycles	22 PCS.	0/1
3	Thermal Shock	H : +100°C 5min ∫ 10 sec L : -10°C 5min	300 Cycles	22 PCS.	0/1
4	High Temperature Storage	Temp. : 100°C	1000 Hrs.	22 PCS.	0/1
5	Low Temperature Storage	Temp. : -40°C	1000 Hrs.	22 PCS.	0/1
6	DC Operating Life	IF = 20 mA	1000 Hrs.	22 PCS.	0/1
7	High Temperature / High Humidity	85°C / 85%RH	1000 Hrs.	22 PCS.	0/1

\* For each die

## Technical Data Sheet

### Luminosity Full Color LED

**61-036/RSGBB7C-B12/ET**

#### Precautions for Use

##### 1. Over-current-proof

Customer must apply resistors for protection; otherwise slight voltage shift will cause big current change (Burn out will happen).

##### 2. Storage

2.1 Do not open moisture proof bag before the products are ready to use.

2.2 Before opening the package: The LEDs should be kept at 30°C or less and 90%RH or less.

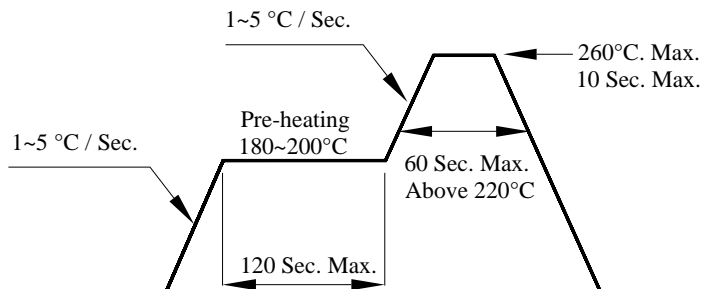
2.3 After opening the package: The LED's floor life is 1 year under 30°C or less and 60% RH or less. If unused LEDs remain, it should be stored in moisture proof packages.

2.4 If the moisture absorbent material (silica gel) has faded away or the LEDs have exceeded the storage time, baking treatment should be performed using the following conditions.

Baking treatment: 60±5°C for 24 hours.

##### 3. Soldering Condition

###### 3.1 Pb-free solder temperature profile



3.2 Reflow soldering should not be done more than two times.

3.3 When soldering, do not put stress on the LEDs during heating.

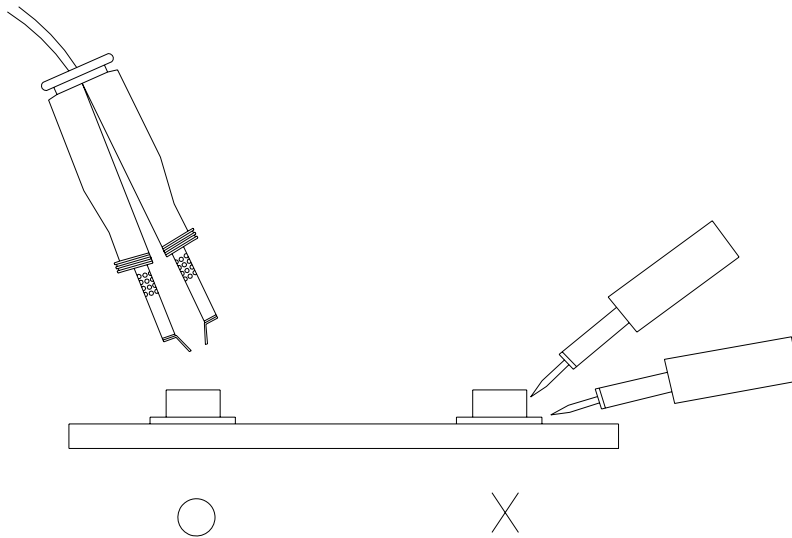
3.4 After soldering, do not warp the circuit board.

**Technical Data Sheet****Luminosity Full Color LED****61-036/RSGBB7C-B12/ET****4. Soldering Iron**

Each terminal is to go to the tip of soldering iron temperature less than 350°C for 3 seconds within once in less than the soldering iron capacity 25W. Leave two seconds and more intervals, and do soldering of each terminal. Be careful because the damage of the product is often started at the time of the hand solder.

**5. Repairing**

Repair should not be done after the LEDs have been soldered. When repairing is unavoidable, a double-head soldering iron should be used (as below figure). It should be confirmed beforehand whether the characteristics of the LEDs will or will not be damaged by repairing.



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<http://www.everlight.com>