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# SPECIFICATION

MODEL : SLSNNRA825TS

Red FLASH LED

CUSTOMER : \_\_\_\_\_

## Preliminary

*SAMSUNG ELECTRO-MECHANICS CO, .LTD.*

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## ■ Product Outline

### 1) Feature

1. Lead Frame Type LED Package ( 5.2 \* 5.2 \* t 1.3mm )
2. Beam Angle (  $\Delta\theta$  : 120 ° )
3. AlGaInP Chip & Long Time Reliability

### 2) Applications

- Channel letter, General lighting, Architectural lighting.....

## ■ Absolute Maximum Rating

- Operation Forward Current Per Chip..... 30 mA
- Peak Pulsed Forward Current Per Chip..... 100 mA  
(Duty 1/10 Pulse Width 10msec)
- Operating Temperature Range (  $T_{opr}$  ) ..... -35°C ~ 85°C
- Storage Temperature Range (  $T_{stg}$  ) ..... -40°C ~ 100°C

## ■ Characteristics

(  $T_a$  : 25°C )

	Symbol	Min.	Typ.	Max.	Unit	Conditions
Forward Voltage	$V_F$	1.7	-	2.6	V	$I_F = 40mA$
Reverse Voltage	$I_R$	-	-	3	$\mu A$	$V_R = 5V$
Wavelength	$W_D$	617	-	632	nm	$I_F = 40mA$

### Luminous Intensity

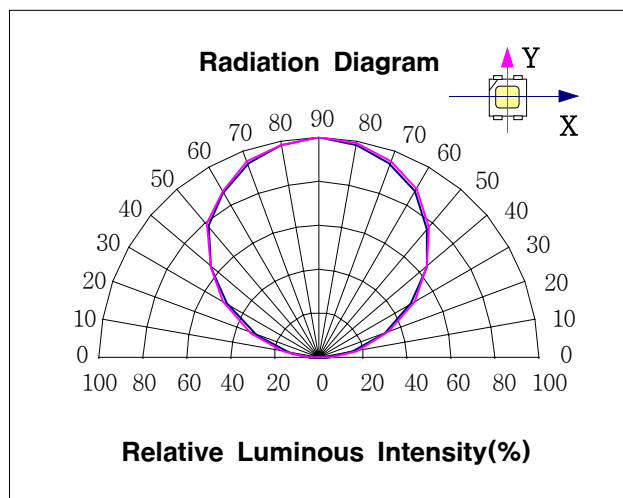
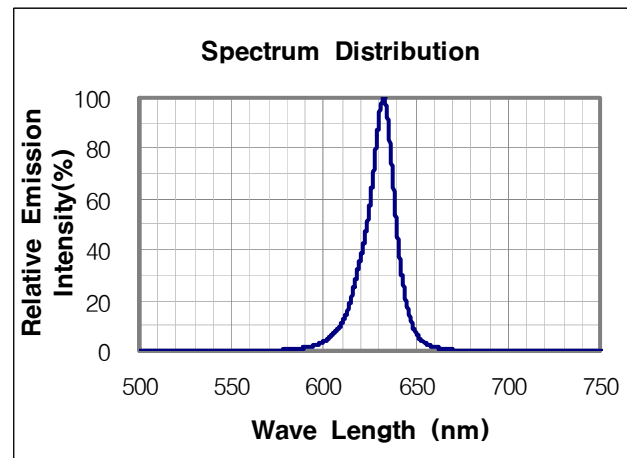
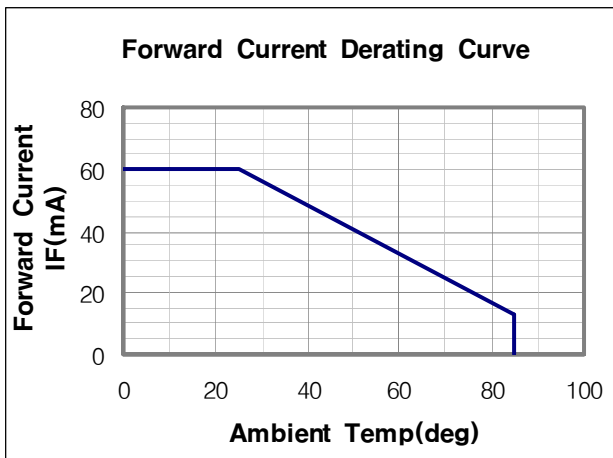
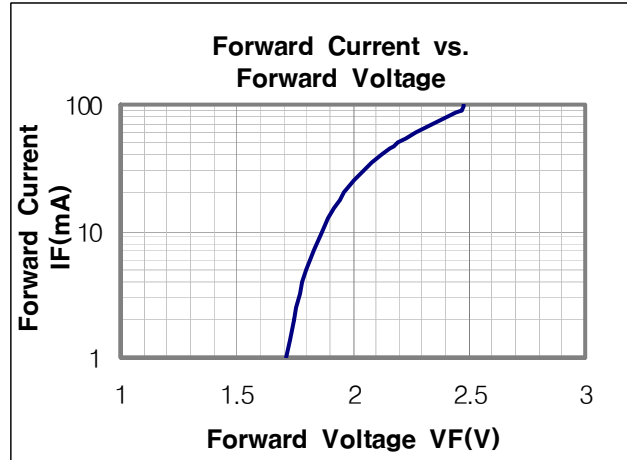
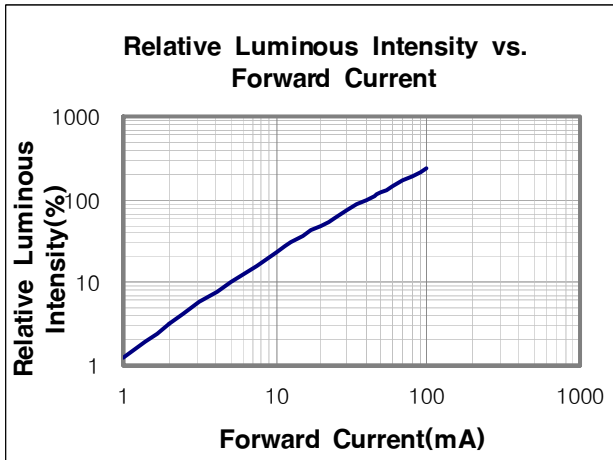
Rank	Symbol	Min.	Typ.	Max.	Unit	Conditions
S	IV	0.6	-	1.2	cd	$I_F = 40mA$
T		1.2	-	1.8		

\* Tolerance :  $V_F$ : $\pm 0.1$ ,  $I_V$ : $\pm 10\%$

\* Luminous intensity measuring equipment : CAS140 B

# Typical Characteristics Graph

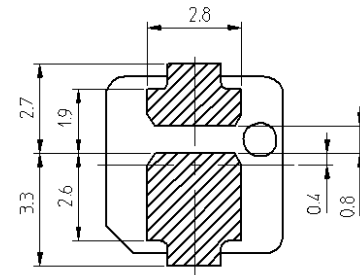
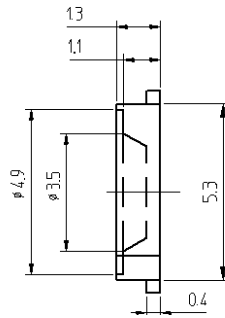
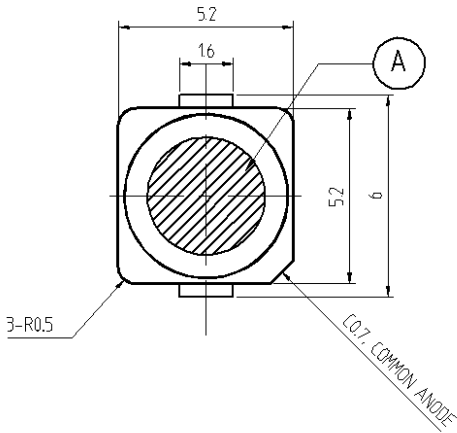
( Ta : 25°C )



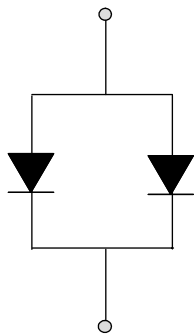
# LED Package Outline Dimensions

unit:mm

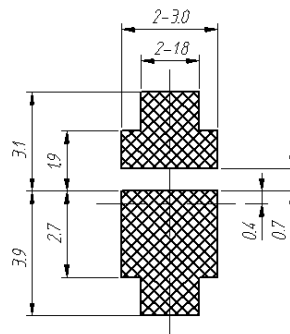
Tolerance:±0.1



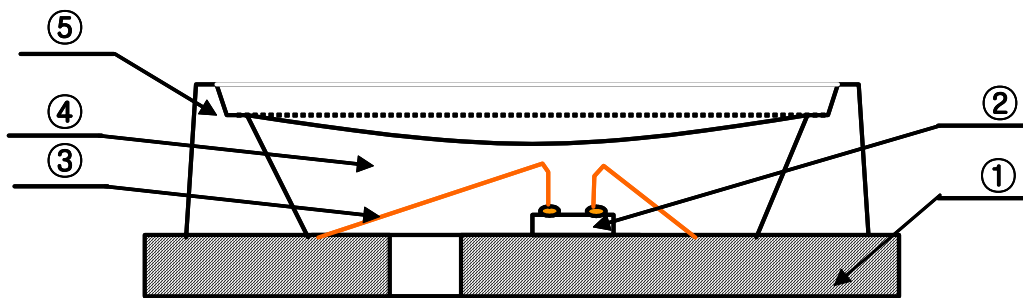
Tolerance is ±0.1mm unless otherwise noted.  
The maximum compressing pressure is 15N.  
Do not apply any damage on the phosphor ( "A" ).



Circuit Diagram



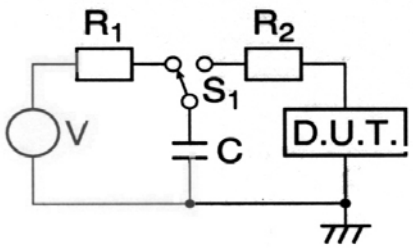
PCB PATTERN



NUMBER	ITEM	MATERIAL
①	FRAME	Copper Frame(Silver Plated)
②	LED CHIP	AlGaInP
③	WIRE	Gold Wire
④	RESIN	Resin
⑤	PACKAGE	Heat-resistant Polymer

## ■ Reliability Test Items and Conditions

### 1) Test Items

Test Item	Test Conditions	Test Hours/Cycles	Sample No
Room Temperature life test	25°C±3°C, DC60 mA	500 h	50
High Temperature humidity life test	60°C±3°C, 95%±2%RH, DC33 mA	500 h	50
High Temperature life test	85°C±3°C, DC12.5mA	500 h	50
Low Temperature life test	-30°C±3°C, DC60 mA	500 h	50
High Temperature Storage	Ta=100°C±3°C	500 h	22
Low Temperature Storage	Ta=-40°C±3°C	500 h	22
High Temperature humidity Storage	60°C±3°C, 95%±2%RH	500 h	22
Thermal Shock	-40°C ~ 100°C 0.5 h      0.5 h	100 cycles	22
Temperature humidity Cycle	25°C ~ 65°C ~ -10°C 24hrs/1cycle, 95%RH	10 cycles	22
Reflow (Pb-Free)	Peak 260±5°C for 10sec	3 times	22
ESD(HBM)	 <p>-R1:10MΩ , R2:1.5KΩ , C:100pF</p>	5 times	5
On/Off test	50°C±3°C, 95%±2%RH, DC60 mA, On/2sec, Off/2sec	108000 cycles	50

## 2) Criteria for Judging the Damage

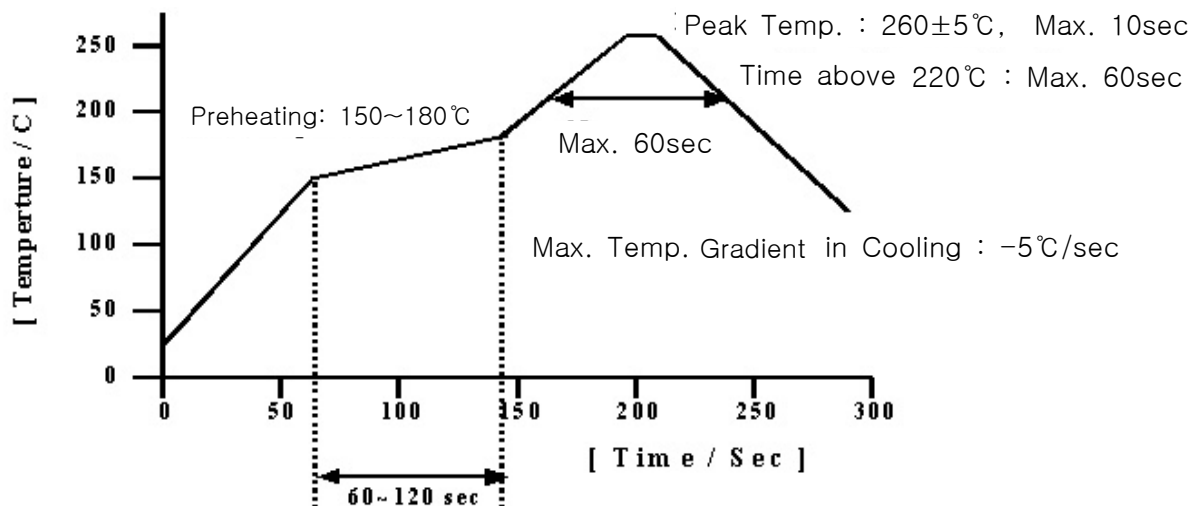
Item	Symbol	Test Condition	Limit	
			Min	Max
Forward Voltage	$V_F$	$I_F = 40\text{mA}$	-	U.S.L.*1.2
Luminous Intensity	$I_V$	$I_F = 40\text{mA}$	L.S.L.*0.5	-
Reverse Current	$I_R$	$V_R = 5\text{V}$	-	U.S.L.*2.0

\* USL : Upper Standard Level    LSL : Lower Standard Level

## ■ Solder Conditions

### 1) Reflow Conditions ( Pb Free )

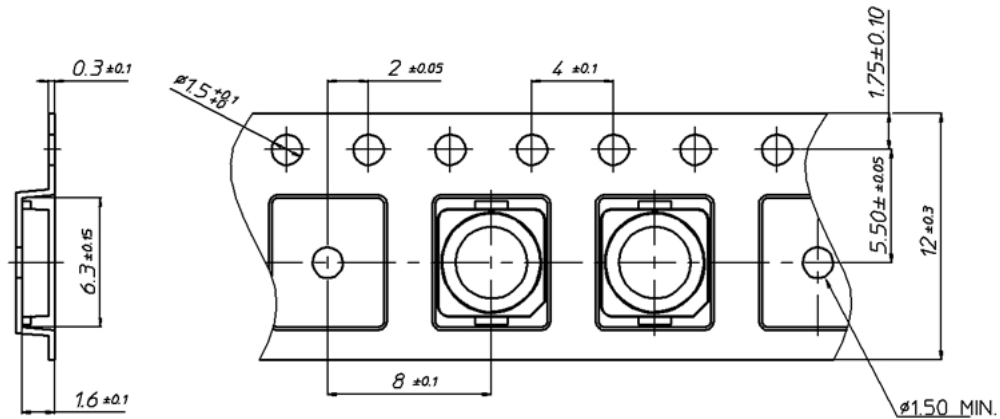
Reflow Frequency : 2 times max.



### 2) For Manual Soldering

Not more than 5 seconds @MAX $300^\circ\text{C}$ , under soldering iron.

## ■ Taping Dimension



End

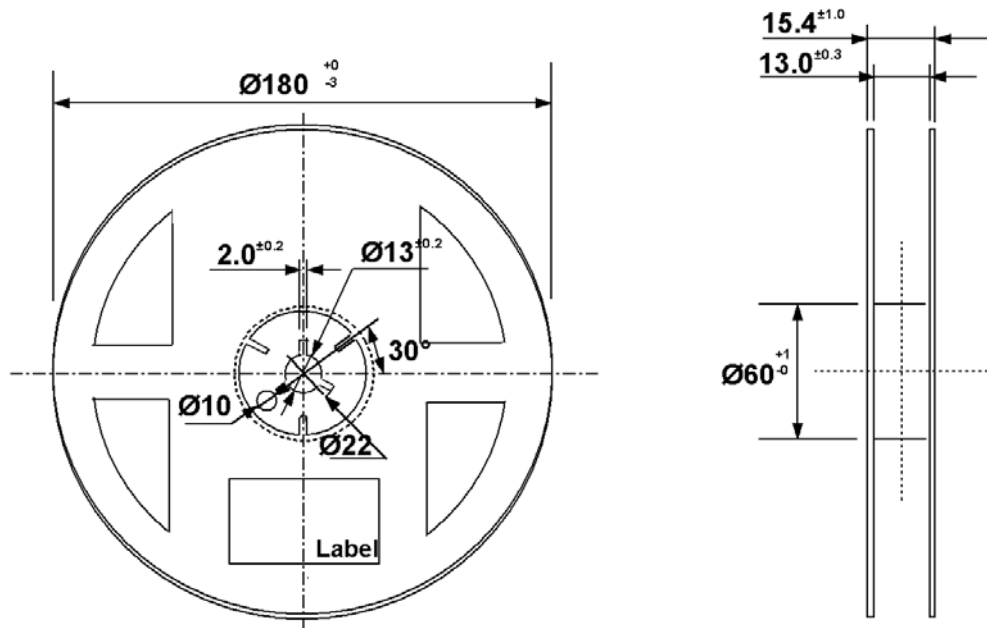
Start

More than 40 mm  
Unloaded tape

Mounted with  
Flash LED

More than (100~200)mm  
Unloaded tape

Leading part more than  
(200~400)mm

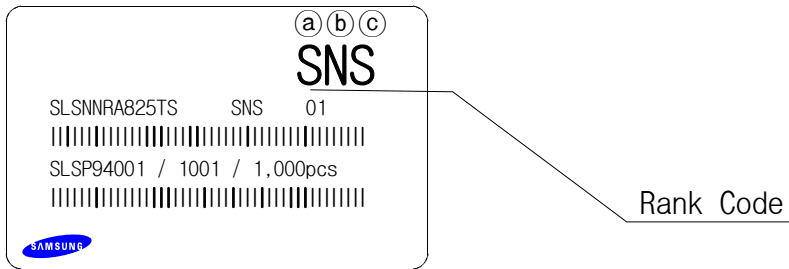


Tolerance  $\pm 0.2$  , Unit:mm

- (1) Quantity : The quantity/reel to be 1000pcs.
- (2) Cumulative Tolerance : Cumulative tolerance/10 pitches to be  $\pm 0.2$  mm
- (3) 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  $10^\circ$  angle to be the carrier tape.
- (4) Packaging : P/N, Manufacturing data code no. and quantity to be indicated on a damp proof package.



## ■ Label Structure



- Ⓐ : VF Rank
- Ⓑ : Wave Length Rank
- Ⓒ : IV Rank

## ■ Precaution for Use

1. This device should not be used in any type of fluid such as water, oil, organic solvent, etc.  
When washing is required, IPA should be used.
2. When the LEDs are illuminating, operating current should be decided after considering the ambient maximum temperature.
3. LEDs must be stored to maintain a clean atmosphere.  
If the LEDs are stored for 3 months or more after being shipped from Samsung Electro-Mechanics, a sealed container with a nitrogen atmosphere should be used for storage.
4. The LEDs must be used within seven days after opening the moisture proof packing. Repack unused Products with anti-moisture packing, fold to close any opening and then store in a dry place.
5. The appearance and specifications of the product may be modified for improvement without notice.
6. This LEDs is sensitive to the static electricity and surge. It is recommended to use a wrist band or anti-electrostatic glove when handling the LEDs. If over voltage which exceeds the absolute maximum rating is applied to LEDs, it will cause damage LEDs and result in destruction.

Damaged LEDs will show some unusual characteristics such as leak current remarkably increase, turn-on voltage becomes lower and the LEDs get unlighted at low current.

