LG-T1921RGBA-TD-AL

DATA SHEET

SPEC. NO. : SZ22101501
DATE : 2022/10/15
REV. A/0

Approved By: Checked By: Prepared By:

LG-T1921RGBA-TD-AL

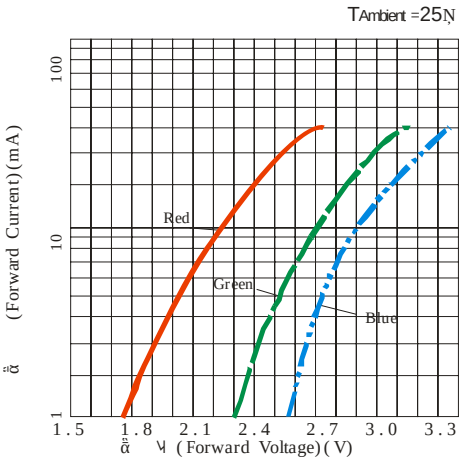
TOP Full-color LED

Catalogue

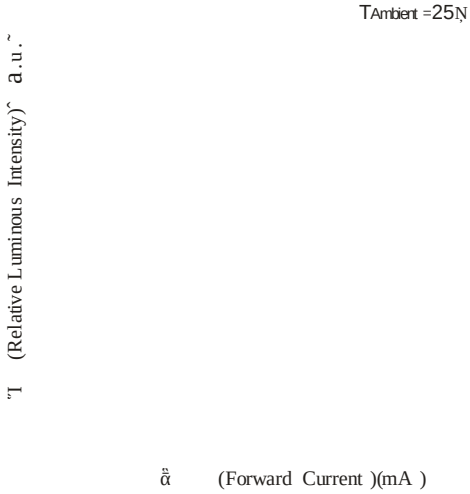
ή شخ

Typical Characteristics Curves

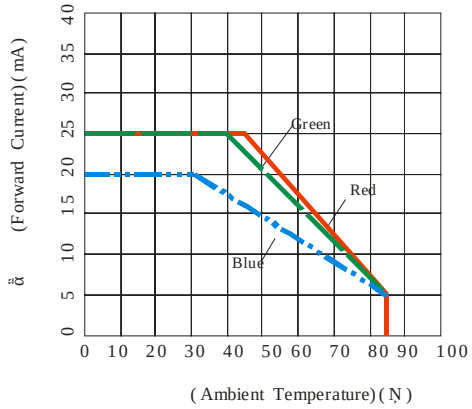
‘
Volt-Ampere Characteristics



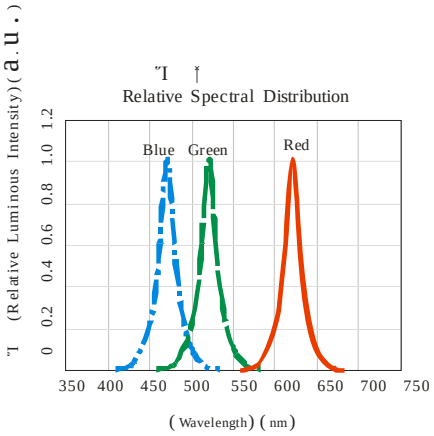
΄Ι б α̈
Relative Luminous Intensity VS Forward Current



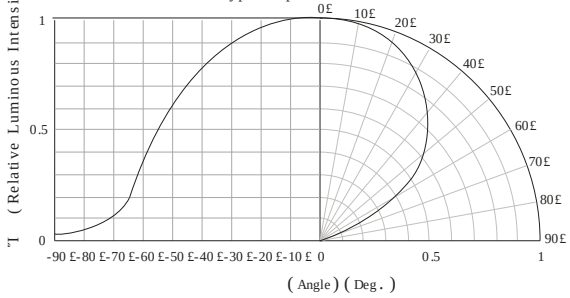
α̈
Forward Current Derating Curve



΄Ι ΄
Relative Spectral Distribution



΄Ι ΄
Typical Spatial Distribution



Reliability Test Items And Conditions

实验项目 Test Items	参考标准 Reference	实验条件 Test Conditions	时间 Time	样品数 Quantit	判据 Crite
ã ă Thermal Shock	MIL-STD-202G	-40Ņ(30min)←→100Ņ(30min)	300 300 cycles	22	0/22
Temperature And Humidity Cyclic	JEITA ED-4701 200 203	-10Ņ——+65Ņ˜ 0%-90%RH 24hrs./1cycle	10 10 cycles	22	0/22
ẏ High Temperature Storage	JEITA ED-4701 200 201	Ta=100Ņ	1000h	22	0/22
æ ẏ Low Temperature Storage	JEITA ED-4701 200 202	Ta=-40Ņ	1000h	22	0/22
ẏ High Temperature High Humidity Storage	JEITA ED-4701 100 103	Ta=60Ņ˜ RH=90%	1000h	22	0/22
Ɓ Life Test	JESD22-A108D	Ta=25Ņ IF_R =15mA,IF_G=8mA,IF_B =5mA	1000h	22	0/22
Ɓ High Temperature Life Test	JESD22-A108D	Ta=85Ņ IF_R =15mA,IF_G=8mA,IF_B =5mA	1000h	22	0/22
æ Ɓ Low Temperature Life Test	JESD22-A108D	Ta=-40Ņ IF_R =15mA,IF_G=8mA,IF_B =5mA	1000h	22	0/22
Resistance to Soldering Heat	GB/T 4937, ň ,2.2&2.3	Tsol*=260 10sec.	2 2 times	22	0/22

" ñ Criteria For Judging Damage

测试项目 Test Items	符号 Symbol	测试条件 Test Conditions	判定标准 Criteria For Judging Damage
ã ă Forward Voltage	V_F	I_F= I_{FT}	˥ ḣ ±10% Initial Data±10%
˥ ã Reverse Current	I_R	V_R= 5V	I_R Ů 10μA
˝I Luminous Intensity	I_V	I_F = I_{FT}	ɞ I_V ˜ Ů 30%˜ ` ɜ I_V ˜ Ů 50% Average I_V degradation≤30%; Single LED I_V degradation≤50%
Resistance to Soldering Heat			ɥ ث Â No dead light exists.

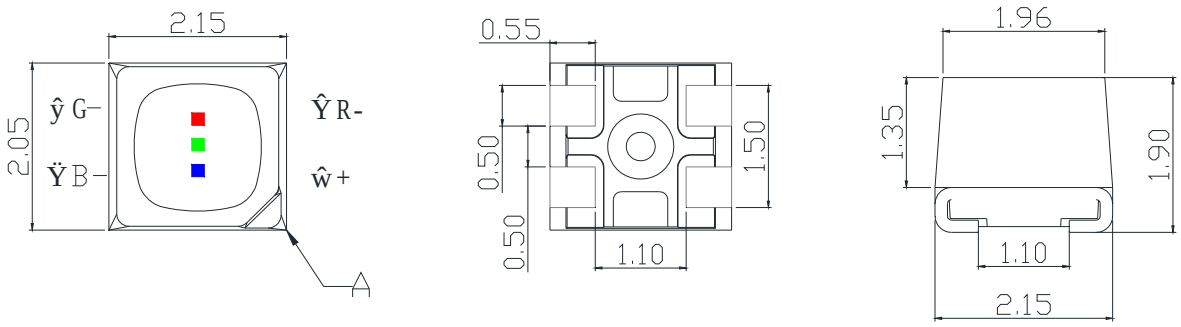
* ˙ Tsol- ˛ I_{FT} ṅ شخ * Note: Tsol-Temperature of tin liquid ˙ I_{FT} Typical current.

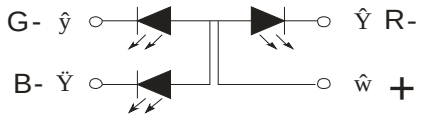
Ня ث ง ว

Product design and operational recommendation

1 ง ня ث ^ ` Æ' mm~

Product design^ Unit: mm~



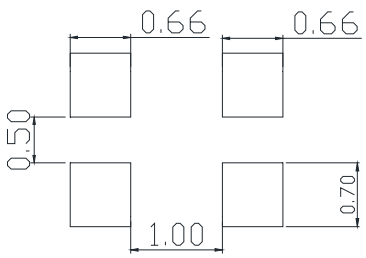


Polarity

Note' A ' ง
A ' Nick Mark
'Ω ' X.X ¤ 0.1 mm X.XX ¤ 0.05mm
Tolerances' X.X ¤ 0.1 mm X.XX ¤ 0.05mm

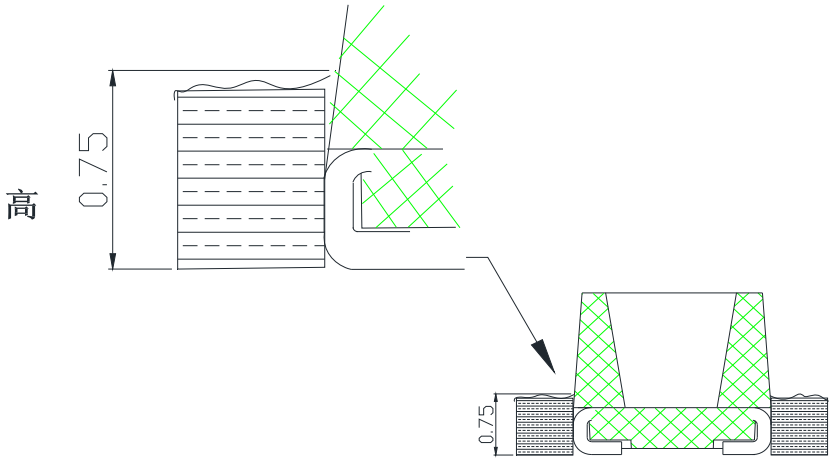
2 ง ^ ` Æ' mm~

Recommended soldering pad (Unit: mm)



3 ง ' ¥ ¥ 0.75mm Л Э

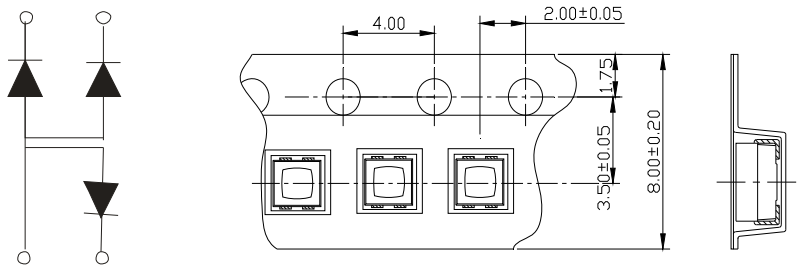
Recommendation for glue filling: filling height must be higher than or equal to 0.75mm



ˆ 1˜

Packaging (1)

✧ **Carrier Tape**

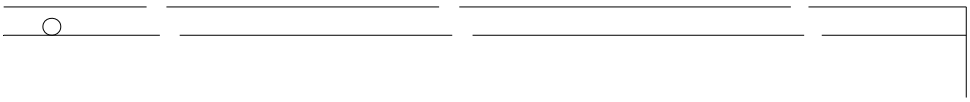


` Æ' mm˘ 'Ω ' ¤ 0.10mm

All dimensions in mm, tolerances unless mentioned is ¤ 0.10 mm.

✧ **Details Of Carrier Tape**

ṃ ą̈ Progressive Direction →



✧ **Reel Dimension**

ṃ ą̈ Progressive Direction →

Label

LIGHT

LIGHT

ˆ 2˜

Guideline for Soldering (2)

- ¥ تي ⁄ У Â
- ¥ Reflow soldering should not be done more than one time.
- ¥ تي فخ ` è˘ a LED ╗˙ ¡ ╢ ╒ Â
- ¥ Stress on the LEDs should be avoided during heating in the reflow soldering process.

G Y (2)

Precautions (2)

3. ‘

Design Consideration

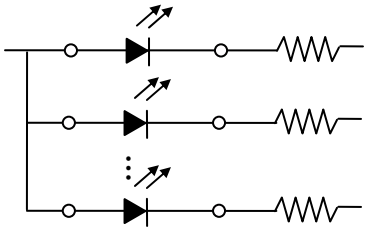
- ˘ LED a ḣ˘ ˚ ˘ G ɖ ˘ ŭ ‡˘ ϒ ϒ ◻ ˬ ϒ ◻˘ ϒ ϒ ث Â

  In designing a circuit, the current through each LED must not exceed the absolute maximum rating specified for each LED. In the meanwhile, resistors for protection should be applied, otherwise slight voltage shift will cause big current change which will probably lead to damage.

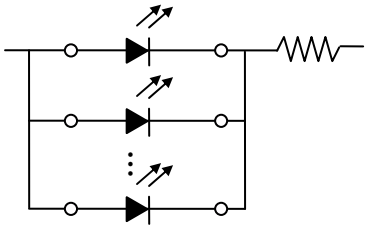
- G ЛЬЮ A˘ ˘ э LED ’ a G ˆ B˘ ˘ ϕ ϒ ‖ЮЮ LED ä ϒˆ VF˘ ϒ ϒ ◻˘ ˬ ǯ ϒ ϒ ◻˘ ϒ G ϕ LED ϒ ϒ ḣ Â

  It is recommended to use Circuit A which regulates the current flowing through each LED rather than Circuit B. When driving LEDs with a constant voltage in Circuit B, the current through the LEDs may vary due to the variation in Forward Voltage (VF) of the LEDs. In the worst case, some LED may be subjected to stress in the excess of the Absolute Maximum Rating.

(A)



(B)



- LED ϕ й ϒ n ϒ ϒ ϒ Â ` ˬ æ LED ϒ ˝I à ϕ ϒ ˝I ˘ ЛЬϕ ‘I† Â

  Thermal Design is paramount importance because heat generation may result in the Characteristics decline, such as brightness decrease, Color change and so on. Please consider the heat dissipation when making the system design.

4. ϒ ϒ ɖ

Reverse voltage protection

- LED ϒ ä ˘ aˬ ϕ G Â LED ϒ è ϒ ϒ ä ϒ ă ˘ LEDˬ |˘ R ˘ ϒ ä ˬ ϒ Â ˬ Ю s ˝I ϒ Âϕ è˘ 8 ϒ ä ϒ˘ ╗ ϕ LED Э ϒ ä ϒ ḣ a 5V Â

  In general, the reverse current of LED is very small, which won’t affect the normal use of components. But when it is often suffered the reverse voltage which exceeds the limit of the component then it will be damaged.