

## Technical Data Sheet

### Top View LEDs

#### 65-21SUGC/B038/TR8/AM

#### Features

- Pb-free.
- Inner reflector.
- White package.
- Optical indicator.
- P-LCC-2 package.
- Wide viewing angle.
- Colorless clear resin.
- Precondition : Base on JEDEC Level-2.
- ESD : Up to 2KV. (Base JESD22-A114-B)
- The product itself will remain within RoHS compliant version.
- Suitable for vapor-phase reflow, infrared reflow and wave solder processes.



#### Descriptions

- The 65-21 series is available for orange, green, blue and yellow or other color due to the different raw material.
- Base on the package design, the device result in wide view angle.

#### Applications

- Automotive backlighting or indicator : Dashboard, switch, audio and video equipments...etc.
- Backlight : LCD, switches, symbol, mobile phone and illuminated advertising.
- Display for indoor and outdoor application : Traffic...etc.
- Ideal for coupling into light guides.
- Substitution of traditional light
- Optical indicator
- General applications.

#### Device Selection Guide

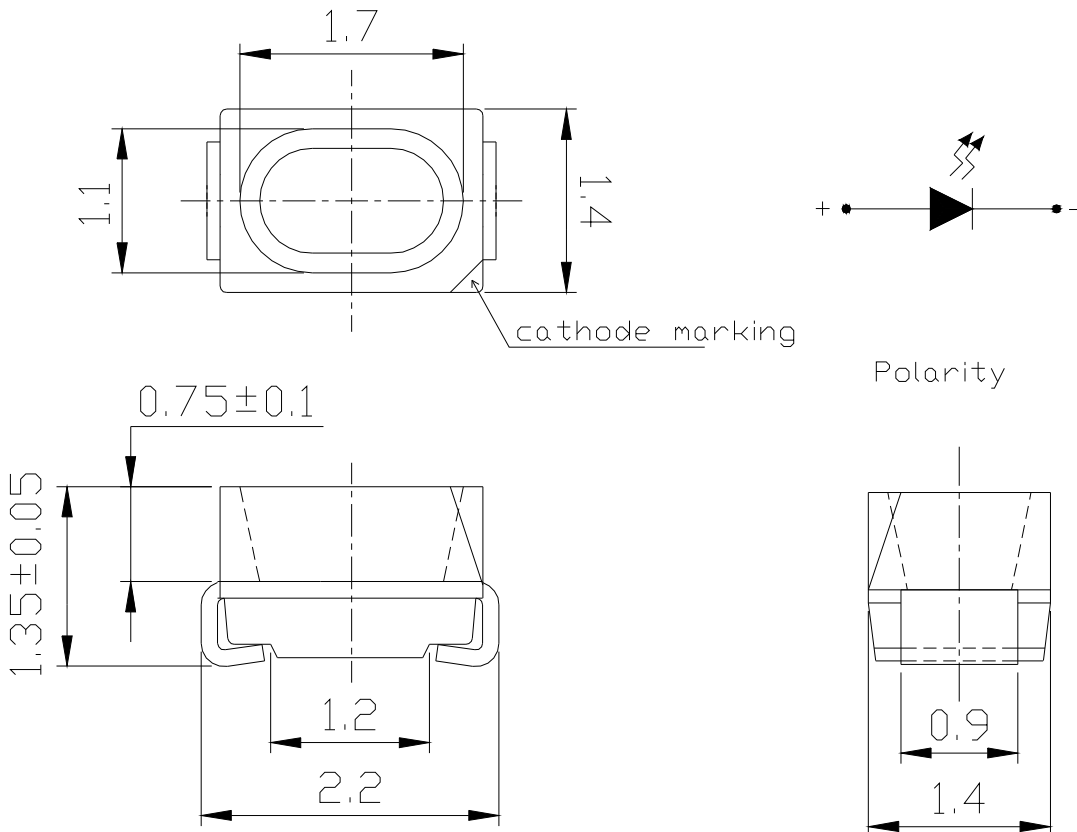
Chip	Emitted Color	Resin Color
Material		
InGaN/SiC	Brilliant Green	Water Clear

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Package Dimensions



Note : Tolerances unless mentioned ±0.1mm. Unit = mm

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**Absolute Maximum Ratings (Ta=25 )**

Parameter	Symbol	Rating	Unit
Reverse Voltage	V <sub>R</sub>	5	V
Forward Current	I <sub>F</sub>	30	mA
Peak Forward Current (Duty 1/10 @1KHz)	I <sub>FP</sub>	100	mA
Power Dissipation	P <sub>d</sub>	120	mW
Junction Temperature	T <sub>j</sub>	125	
Operating Temperature	T <sub>opr</sub>	-40 ~ +100	
Storage Temperature	T <sub>stg</sub>	-40 ~ +110	
Soldering Temperature	T <sub>sol</sub>	Reflow Soldering : 260 for 10 sec. Hand Soldering : 350 for 3 sec.	

**Electro-Optical Characteristics (Ta=25 )**

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Luminous Intensity	I <sub>v</sub>	56	-----	140	mcd	I <sub>F</sub> =10mA
Viewing Angle	2 1/2	-----	120	-----	deg	I <sub>F</sub> =10mA
Forward Voltage	V <sub>F</sub>	2.70	-----	4.35	V	I <sub>F</sub> =10mA
Reverse Current	I <sub>R</sub>	-----	-----	10	μA	V <sub>R</sub> =5V

**Notes :**

1. Tolerance of Luminous Intensity : ±11%
2. Tolerance of Forward Voltage : ±0.1V

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#### Bin Range of Luminous Intensity

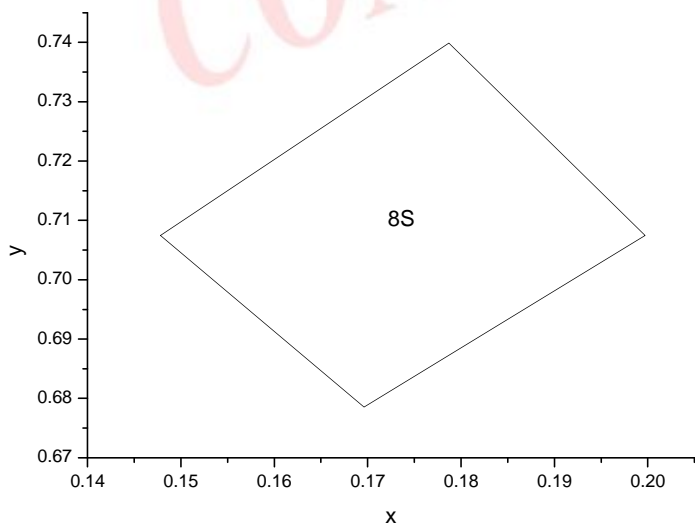
Bin	Min	Max	Unit	Condition
P2	56	71	mcd	I <sub>F</sub> =10mA
Q1	71	90		
Q2	90	112		
R1	112	140		

**Notes:** Tolerance of Luminous Intensity : ±11%

#### Chromaticity Coordinates Specifications for Bin Grading

Bin Code	CIE_x	CIE_y	I <sub>F</sub> =10mA
8S	0.1478	0.7075	
	0.1787	0.7399	
	0.1997	0.7075	
	0.1696	0.6786	

**Notes:** Tolerance Chromaticity Coordinates : ±0.01.



**Notes:** The C.I.E. 1931 chromaticity diagram

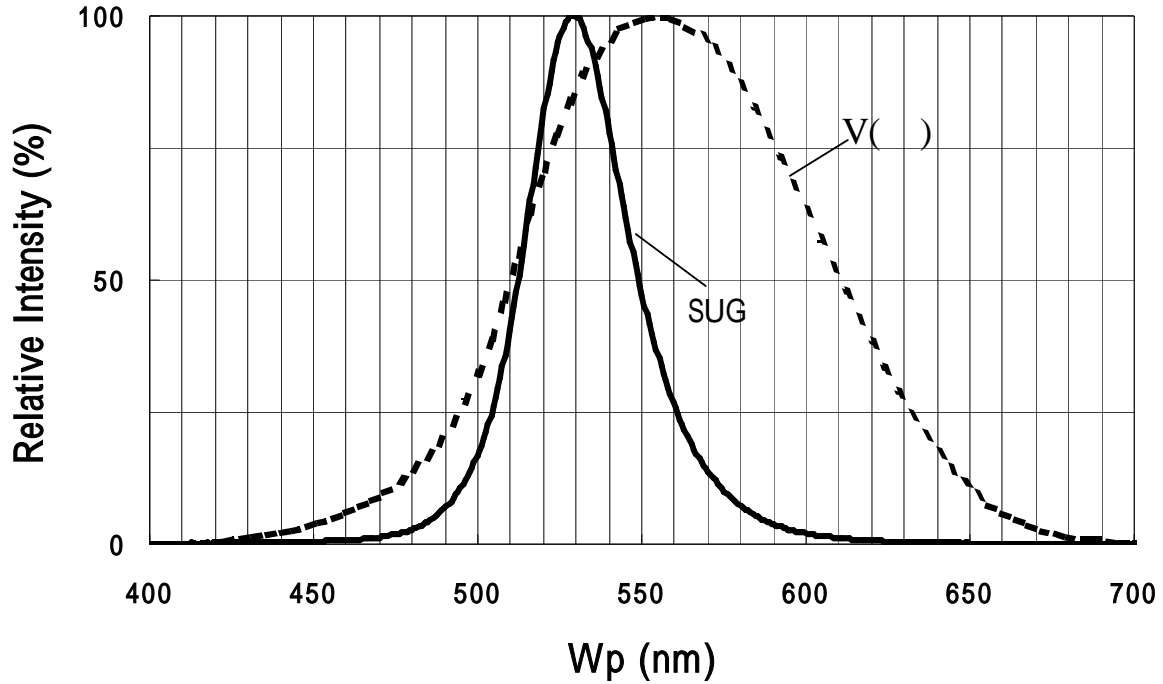
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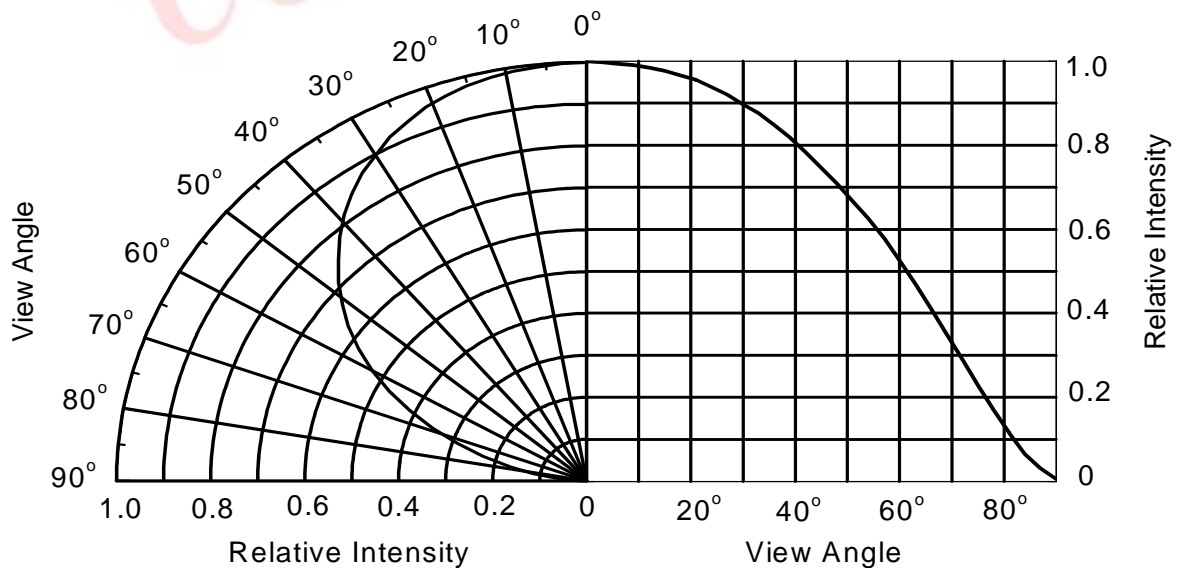
Typical Electro-Optical Characteristics Curves

- Typical curve of spectral distribution :



Note :  $V(\lambda)$ =Standard eye response curve

Diagram characteristics of radiation

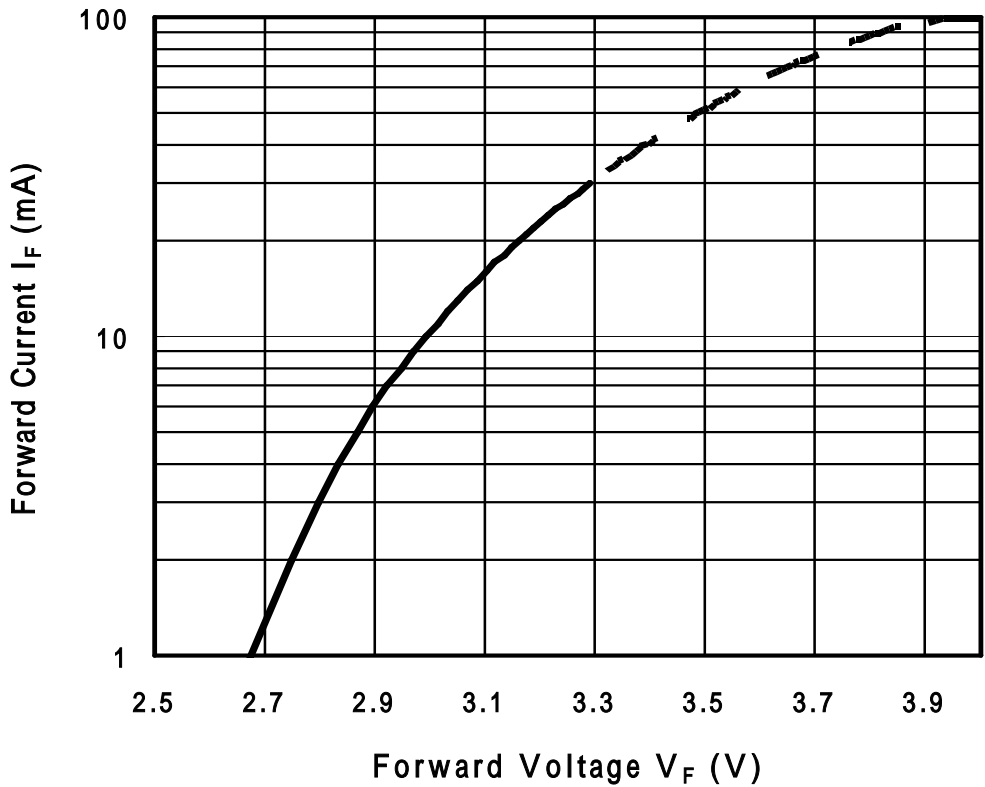


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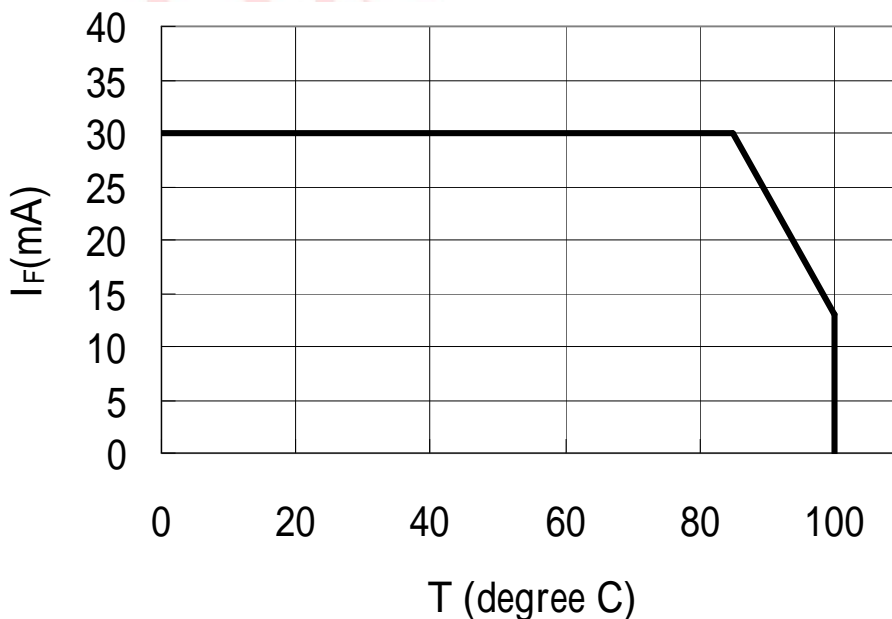
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Forward Current vs. Forward Voltage (Ta=25 )



Forward current vs. Ambient Temp.



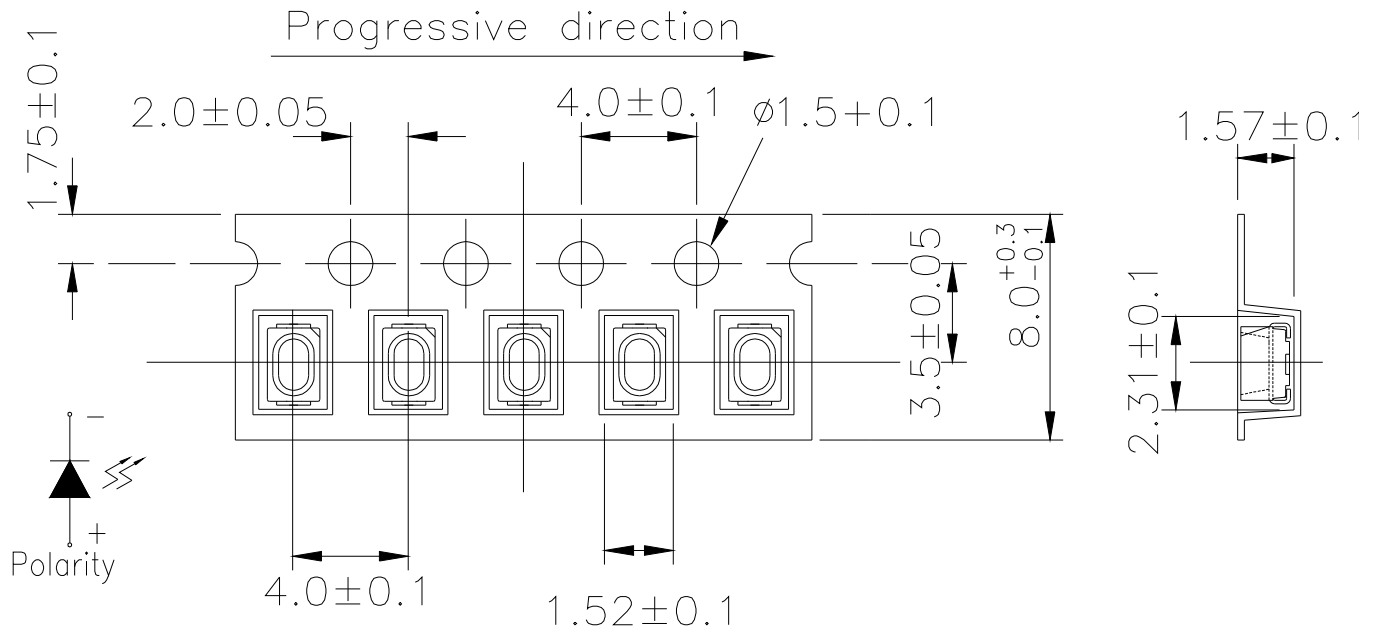


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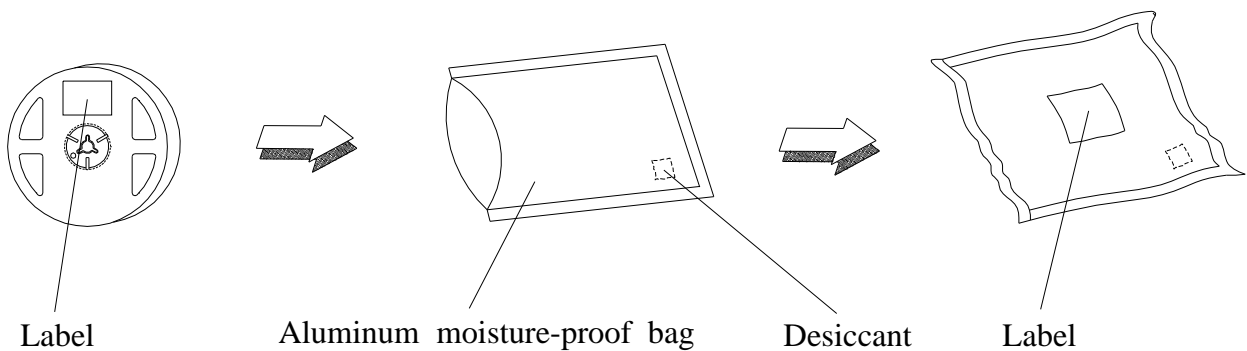
**65-21SUGC/B038/TR8/AM**

Carrier Tape Dimensions: Loaded quantity 3000 PCS per reel



Note : Tolerances unless mentioned ±0.1mm. Unit = mm

Moisture Resistant Packaging





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#### Precautions for Use

1. Over-current-proof

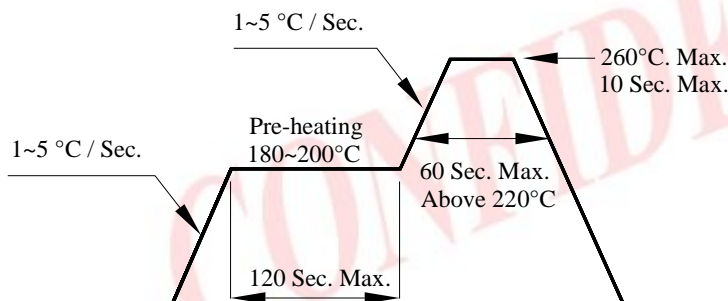
Customer must apply resistors for protection, otherwise slight voltage shift will cause big current change ( Burn out will happen ).

2. Storage

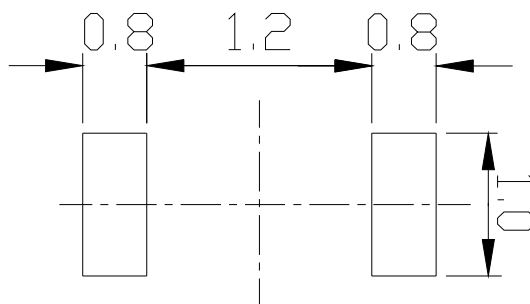
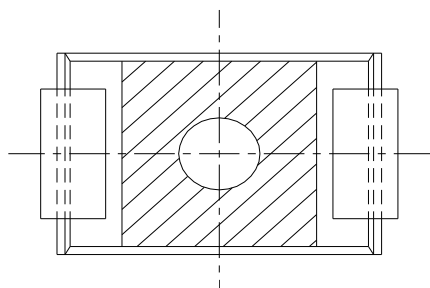
- 2.1 Do not open moisture proof bag before the products are ready to use.
- 2.2 Before opening the package: The LED should be kept at 30 or less and 90%RH or less.
- 2.3 After opening the package: The LED floor life is 1 year under 30 or less and 60% RH or less. If unused LED remain, it should be stored in moisture proof packages.
- 2.4 If the moisture absorbent material (silica gel) has faded away or the LED have exceeded the storage time, baking treatment should be performed using the following conditions.  
Baking treatment : 60±5 for 24 hours.

3. Soldering Condition

3.1 (A) Pb-free solder temperature profile



(B) Recommend soldering pad



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

3.4 After soldering, do not warp the circuit board.



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#### 4. Soldering Iron

Each terminal is to go to the tip of soldering iron temperature less than 350 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.

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