# Technical Data Sheet Side View LED

#### Features

- Fluorescence Type
- High Luminous Intensity
- High Efficiency
- Pb-free
- The product itself will remain within RoHS compliant version.

### Descriptions



57-21/B7C-AS1T2M/BF

• The 57-21 series is available in soft orange, green, blue and yellow. Due to the package design, the LED has wide viewing angle and optimized light coupling by inter reflector. This feature makes ideal for light pipe application. The low current requirement makes this device ideal for portable equipment or any other application where power is at a premium.

### Applications

- OA equipment
- Backlighting of full color LCD
- Automotive equipment
- Replacement of conventional light bulbs and Fluorescent Lamps

## **Device Selection Guide**

Chip		Dogin Color		
Material	Emitted Color	Kesin Color		
InGaN	Blue	Water Clear		

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#### **Package Outline Dimensions**



**Note:** Tolerances unless mentioned are  $\pm 0.1$ mm, unit = mm.

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## 57-21/B7C-AS1T2M/BF

### Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Rating	Unit		
Reverse Voltage	V <sub>R</sub>	5	V		
Forward Current	$I_{\rm F}$	30	mA		
Peak Forward Current (Duty 1/10 @1KHz)	I <sub>FP</sub>	100	mA		
Power Dissipation	Pd	110	mW		
Electrostatic Discharge(HBM)	ESD	1000	V		
Operating Temperature	Topr	-40 ~ +85	°C		
Storage Temperature	Tstg	-40 ~ +90	°C		
Soldering Temperature	Tsol	Reflow Soldering : $260^{\circ}$ C for 10 sec. Hand Soldering : $350^{\circ}$ C for 3 sec.			
Electro-Optical Characteristics (Ta=25°C)					

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

Parameter	Symbol	Min.	Тур.	Max.	Unit	Condition
Luminous Intensity	Iv	180		450	mcd	
Viewing Angle	201/2		120		deg	
Peak Wavelength	λp		468		nm	I <sub>F</sub> =20mA
Dominant Wavelength	λd	464.5		476.5	nm	
Spectrum Radiation Bandwidth	Δλ		25		nm	
Forward Voltage	$V_{\rm F}$	2.75		3.95	V	
Reverse Current	I <sub>R</sub>			50	μΑ	V <sub>R</sub> =5V

#### Notes:

- 1. Tolerance of Luminous Intensity: ±11%
- 2. Tolerance of Dominant Wavelength: ±1nm
- 3. Tolerance of Forward Voltage: ±0.05V

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### **Bin Range of Luminous Intensity**

Bin Code	Min.	Max.	Unit	Conduction	
S1	180	225			
S2	225	285		L 20m A	
T1	285	360	mcd	$I_{\rm F}=2011{\rm A}$	
T2	360	450			

#### **Bin Range of Dominant Wavelength**

Groups	Bin	Min	Max	Unit	Condition		
А	A9	464.5	467.5				
	A10	467.5	470.5		L 20 A		
	A11	470.5	473.5	nm	I <sub>F</sub> =20mA		
	A12	473.5	476.5				

### **Bin Range of Forward Voltage**

Groups	Bin	Min	Max	Unit	Condition	
М	5	2.75	3.05			
	6	3.05	3.35		L 20 A	
	7	3.35	3.65	voit	$I_{\rm F}$ –2011A	
	8	3.65	3.95			

#### Notes:

- 1. Tolerance of Luminous Intensity: ±11%
- 2. Tolerance of Dominant Wavelength: ±1nm
- 3. Tolerance of Forward Voltage:  $\pm 0.1V$

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# **Technical Data Sheet**

**Typical Electro-Optical Characteristics Curves** 

## Side View LED

#### Spectrum Distribution Forward Current vs. Ta=25°C Forward Voltage Ta=25°C 100 50 Relative luminous intensity (%) Forward Current IF (mA) 75 40 30 50 20 25 10 0 400 450 500 550 800 0 └ 2.4 2.6 3.0 3.4 3.8 4.2 Wavelength $\lambda$ (nm) Forward Voltage (V<sub>F</sub>)-volts Relative Luminous Intensity vs Relative Luminous Intensity vs. Forward Current Ambient Temperature Ta=25°C § 1000₽ 1000 Relative Luminous Intensity (%) f=1KHz Duty=1/10 Relative Luminous Intensity 100 100 10 10 1 1 2 10 -60 -40 -20 0 20 40 60 80 100 10 10 Ambient Temperature Ta (°C) Forward Current IF(mA) Radiation Diagram Forward Current Derating Curve Ta=25°C 0° 10° 20° 50 30° Forward Current I<sub>F</sub> (mA) 40 40° 30 1.0 0.9 50° 20 0.8 60° 10 70° 0.7 80° 90° 0 20 40 60 80 100 0.5 0.3 0.1 0.2 0.4 0.6 Ambient Temperature Ta (°C)

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# **Technical Data Sheet** Side View LED

#### Label Explanation

CAT: Luminous Intensity Rank HUE: Dom. Wavelength Rank **REF:** Forward Voltage Rank

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**Note:** Tolerance unless mentioned is  $\pm 0.1$ mm, unit = mm.

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13.0 +0.3  $-15.4 \pm 1.0$ 

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## Side View LED

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**Carrier Tape Dimensions: Loaded Quantity 500 pcs. Per Reel** 



**Note:** Tolerance unless mentioned is  $\pm 0.1$ mm, unit = mm.

## **Moisture Resistant Packaging**



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## **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	$I_F = 20 \text{ mA}$	1000 Hrs.	22 pcs.	0/1
7	High Temperature / High Humidity	85°C/85%RH	1000 Hrs.	22 pcs.	0/1

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## 57-21/B7C-AS1T2M/BF

### **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  $30^{\circ}$ C or less and 90%RH or less.
- 2.3 After opening the package: The LED's floor life is 72 hours under 30℃ 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.

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#### 4. Soldering Iron

Each terminal is to go to the tip of soldering iron temperature less than  $350^{\circ}$ 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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## DISCLAIMER

- 1. EVERLIGHT reserves the right(s) on the adjustment of product material mix for the specification.
- 2. The product meets EVERLIGHT published specification for a period of twelve (12) months from date of shipment.
- 3. The graphs shown in this datasheet are representing typical data only and do not show guaranteed values.
- 4. When using this product, please observe the absolute maximum ratings and the instructions for using outlined in these specification sheets. EVERLIGHT assumes no responsibility for any damage resulting from the use of the product which does not comply with the absolute maximum ratings and the instructions included in these specification sheets.
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