imall

Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from, Europe, America and south Asia, supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts, Customers Priority, Honest Operation, and Considerate Service", our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip, ALPS, ROHM, Xilinx, Pulse, ON, Everlight and Freescale. Main products comprise IC, Modules, Potentiometer, IC Socket, Relay, Connector. Our parts cover such applications as commercial, industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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Tel: +86-755-8981 8866 Fax: +86-755-8427 6832 Email & Skype: info@chipsmall.com Web: www.chipsmall.com Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



EVERLIGHT EVERLIGHT ELECTRONICS CO., LTD.

Technical Data Sheet

Reverse Package Chip LED

Features

- Package in 8mm tape on 7" diameter reel.
- Compatible with automatic placement equipment.
- Compatible with infrared and vapor phase reflow solder process.
- Mono-color type.
- Pb-free.
- The product itself will remain within RoHS compliant version.

Descriptions

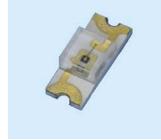
- The 23-21B SMD LED is much smaller than lead frame type components, thus enable smaller board size, higher packing density, reduced storage space and finally smaller equipment to be obtained.
- Besides, lightweight makes them ideal for miniature applications. etc.

Applications

- Backlighting in dashboard and switch.
- Telecommunication: indicator and backlighting in telephone and fax.
- Flat backlight for LCD, switch and symbol.
- General use.

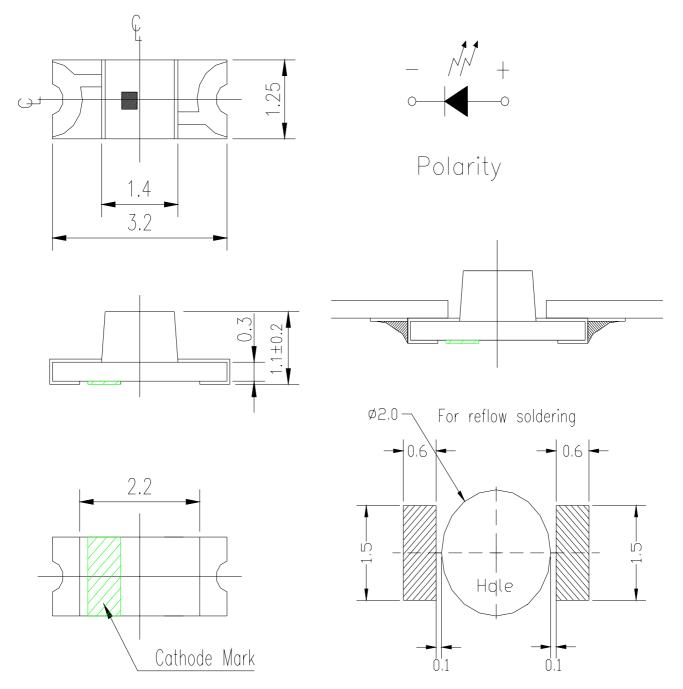
Device Selection Guide

D. AN	Chip		Resin Color	
Part No.	Material	Emitted Color		
23-21B/GHC-YR2T1/2A	InGaN	Blue	Water Clear	



23-21B/GHC-YR2T1/2A

Package Outline Dimensions



Note: The tolerances unless mentioned is ± 0.1 mm ,Unit = mm

http://www.everlight.com Prepared date: 8-Apr-2009 23-21B/GHC-YR2T1/2A

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23-21B/GHC-YR2T1/2A

Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Rating	Unit		
Reverse Voltage	Vr	5	V		
Forward Current	IF	25	mA		
Peak Forward Current (Duty 1/10 @1KHz)	Ifp	100	mA		
Power Dissipation	Pd	95	mW		
Electrostatic Discharge(HBM)	ESD	150	V		
Operating Temperature	Topr	-40 ~ +85	°C		
Storage Temperature	Tstg	-40 ~ +90	°C		
Soldering Temperature	Tsol	Reflow Soldering : 260° C for 10sec. Hand Soldering : 350° C for 3 sec.			

Electro-Optical Characteristics (Ta=25°C)

Parameter	Symbol	Min.	Тур.	Max.	Unit	Condition	
Luminous Intensity	Iv	140		360	mcd		
Viewing Angle	2 <i>θ</i> 1/2		130		deg		
Peak Wavelength	λp		525		nm		
Dominant Wavelength	λd	520		535	nm	I _F =20mA	
Spectrum Radiation Bandwidth	$ riangle \lambda$		35		nm		
Forward Voltage	VF	2.7	3.3	3.7	V		
Reverse Current	Ir			50	μ A	Vr=5V	

Notes:

1.Tolerance of Luminous Intensity ±11%

2.Tolerance of Dominant Wavelength ±1nm

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23-21B/GHC-YR2T1/2A

Bin Range Of Dom. Wavelength

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Group	Bin	Min	Max	Unit	Condition
	Х	520	525	nm	I _F =20mA
Y	Y	525	530		
	Z	530	535		

Bin Range Of Luminous Intensity

Bin	Min	Max	Unit	Condition
R2	140	180	mcd	I _F =20mA
S1	180	225		
S2	225	285		
T1	285	360		

Notes:

1.Tolerance of Luminous Intensity $\pm 11\%$

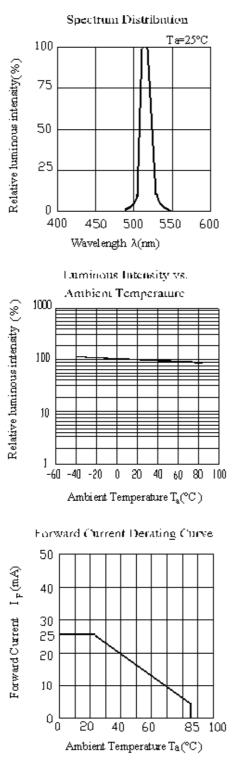
2.Tolerance of Dominant Wavelength ±1nm

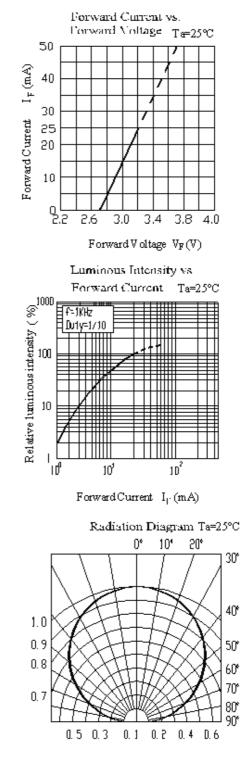
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23-21B/GHC-YR2T1/2A

Typical Electro-Optical Characteristics Curves

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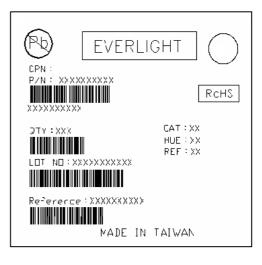
Everlight Electronics Co., Ltd. Device No: SZDSE-23B-G01 http://www.everlight.com Prepared date: 8-Apr-2009

EVERLIGHT EVERLIGHT ELECTRONICS CO., LTD.

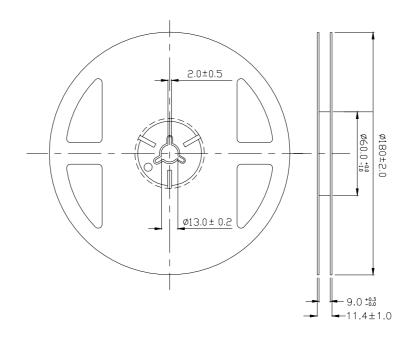
23-21B/GHC-YR2T1/2A

Label explanation

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



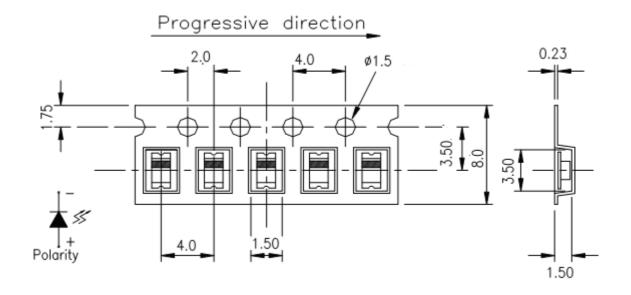
Reel Dimensions



Note: The tolerances unless mentioned is ± 0.1 mm, Unit = mm

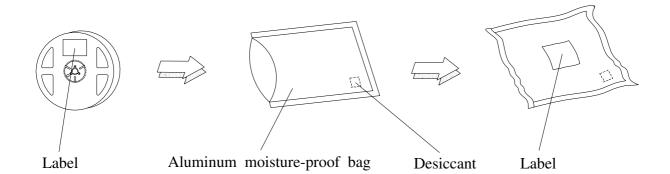
http://www.everlight.com Prepared date: 8-Apr-2009

Carrier Tape Dimensions: Loaded quantity 2000 PCS per reel



Note: The tolerances unless mentioned is ± 0.1 mm, Unit = mm

Moisture Resistant Packaging





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. : $260^{\circ}C \pm 5^{\circ}C$ 6 Min.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 \int 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°℃	1000 Hrs.	22 PCS.	0/1
6	DC Operating Life	$I_F = 20mA$	1000 Hrs.	22 PCS.	0/1
7	High Temperature / High Humidity	85℃/ 85%RH	1000 Hrs.	22 PCS.	0/1

Precautions For Use

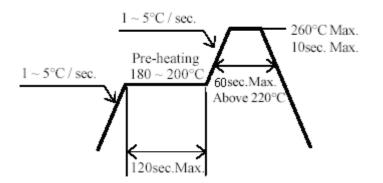
1. Over-current-proof

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



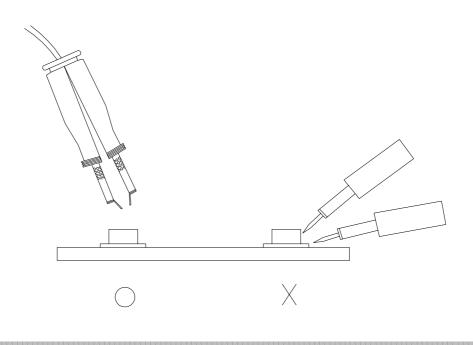
- 3.2 Reflow soldering should not be done more than two times.
- 3.3 When soldering, do not put stress on the LEDs during heating.
- 3.4 After soldering, do not warp the circuit board.

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.



EVERLIGHT ELECTRONICS CO., LTD. Office: No 25, Lane 76, Sec 3, Chung Yang Rd, Tucheng, Taipei 236, Taiwan, R.O.C

Tel: 886-2-2267-2000, 2267-9936 *Fax:* 886-2267-6244, 2267-6189, 2267-6306 *http://www.everlight.com*