Technical Data Sheet

Full Color Chip LEDs

15-23B/R6G6BHC-A01/2T

Features

- Package in 8mm tape on 7" diameter reel.
- Compatible with automatic placement equipment.
- Compatible with infrared and vapor phase reflow solder process.
- Full-color type.

Descriptions

- The 15-23B SMD Taping 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

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

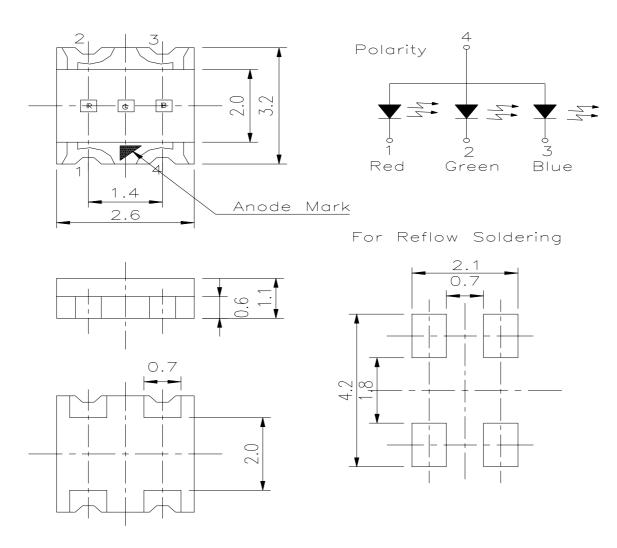
Device Selection Guide

	I and Cala		
Type	Material	Emitted Color	Lens Color
R6	AlGaInP	Brilliant Red	
G6	InGaN	Brilliant Yellow Green	Water Clear
ВН	InGaN	Blue	



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Package Outline Dimensions



Notes: Tolerances Unless Dimension ±0.1mm, Unit = mm

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Absolute Maximum Ratings (Ta=25 $^{\circ}$ C)

Parameter	Symbol	Rating	Unit	
Reverse Voltage	VR	5	V	
Forward Current	IF	R6:25 G6:25 BH:25	mA	
Operating Temperature	Topr	-40 ~ +85	$^{\circ}\!\mathbb{C}$	
Storage Temperature	Tstg	-40 ~ +90	$^{\circ}\!\mathbb{C}$	
Soldering Temperature	Tsol	260 (for 5 seconds)	$^{\circ}\! \mathbb{C}$	
Electrostatic Discharge	ESD	R6:2000 G6:150 BH:150	V	
Power Dissipation	Pd	R6:60 G6:110 BH:110	mW	
Peak Forward Current (Duty 1/10 @1KHz)	IFP	R6:60 G6:100 BH:100	mA	

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Electro-Optical Characteristics (Ta=25°C)

	1				 		
Parameter	Symbol		Min.	Тур.	Max.	Unit	Condition
		R6	72	100	180		
Luminous Intensity	Iv	G6	28.5	50	90	mcd	
		ВН	28.5	50	90		
Viewing Angle	2 0 1/2			120		deg	
		R6		632			
Peak Wavelength	λp	G6		575		nm	
		ВН		468			
		R6	619		629		
Dominant Wavelength	λd	G6	568		575	nm	IF=20mA
		ВН	465		480		
		R6		20			
Spectrum Radiation Bandwidth	Δλ	G6		20		nm	
		ВН		25			
		R6		2.0	2.4		
Forward Voltage	VF	G6		2.0	2.4	V	
		ВН		3.5	3.9		
		R6			10		
Reverse Current	IR	G6			10	μ A	V _R =5V
		ВН			50		

Notes:

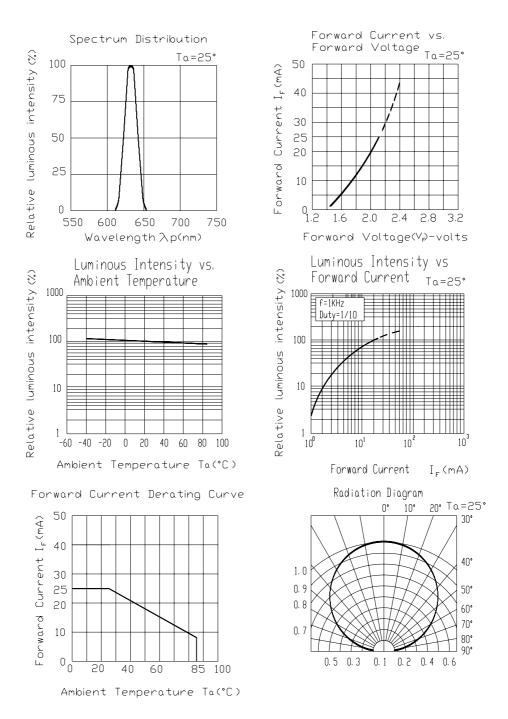
- 1. Tolerance of Luminous Intensity ±10%
- 2.Tolerance of Dominant Wavelength ±1nm
- 3. Tolerance of Forward Voltage ±0.1V

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Typical Electro-Optical Characteristics Curves

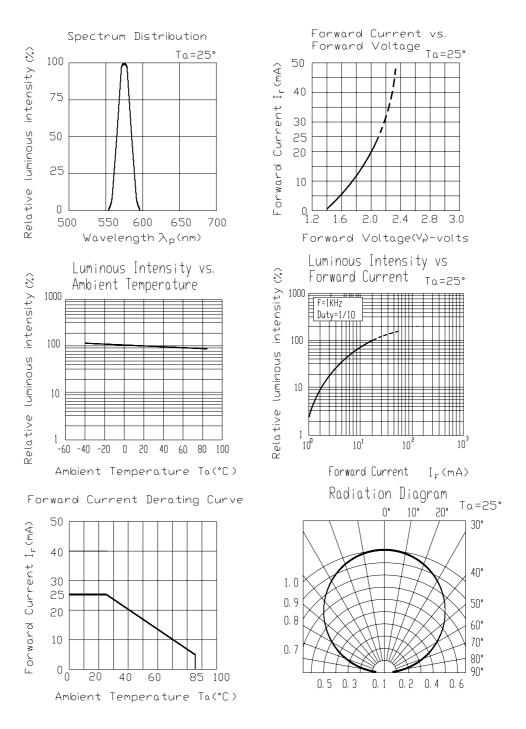
R6



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Typical Electro-Optical Characteristics Curves

G6

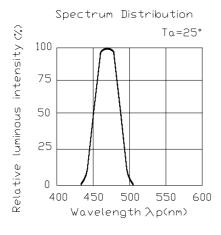


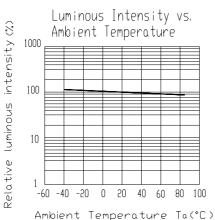
Device No:DSE-153-

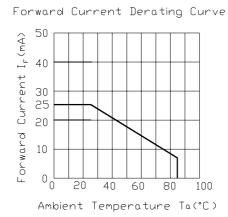
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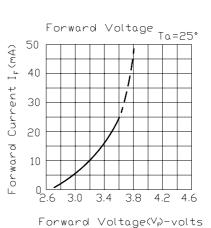
Typical Electro-Optical Characteristics Curves

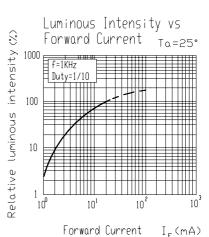
BH

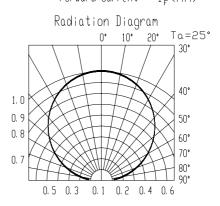










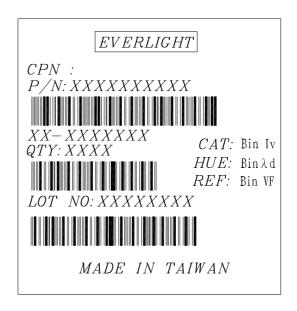


Label explanation

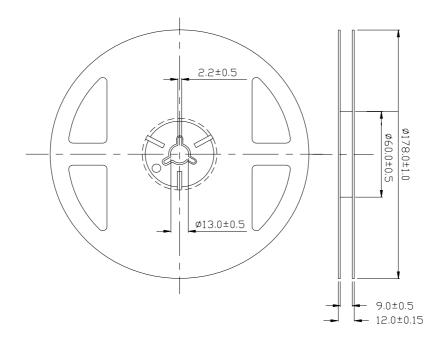
CAT: Luminous Intensity Rank

HUE: Dom. Wavelength Rank

REF: Forward Voltage Rank



Reel Dimensions



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

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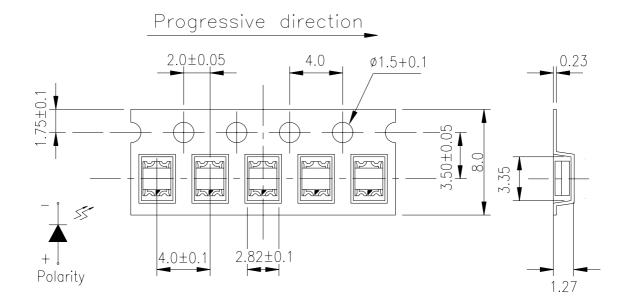
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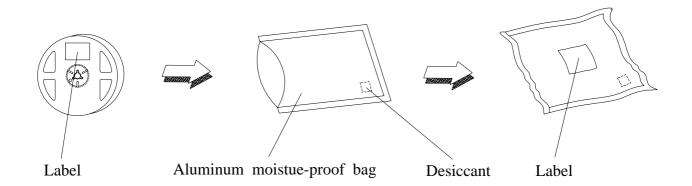
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Carrier Tape Dimensions: Loaded quantity 2000 PCS per reel



Note: The tolerances unless mentioned is ± 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. : 240°C±5°C 5sec.	6 Min.	22 PCS.	0/1
2	Temperature Cycle	$H: +100^{\circ}\mathbb{C}$ 15min \int 5 min $L: -40^{\circ}\mathbb{C}$ 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°€	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/R.H85%	1000 Hrs.	22 PCS.	0/1

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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).

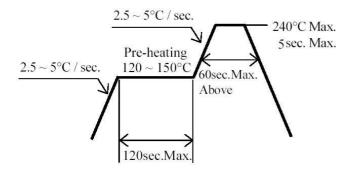
2. Storage

- 2.1 Do not open moisture proof bag before the products are ready to use.
- 2.2 Before opening the package, the LEDs should be kept at 30°C or less and 90%RH or less.
- 2.3 The LEDs should be used within a year.
- 2.4 After opening the package, the LEDs should be kept at 30° C or less and 70%RH or less.
- 2.5 The LEDs should be used within 168 hours (7 days) after opening the package.
- 2.6 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 : $60\pm5^{\circ}$ C for 24 hours.

3. Soldering Condition

3.1 Lead 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 280° 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.

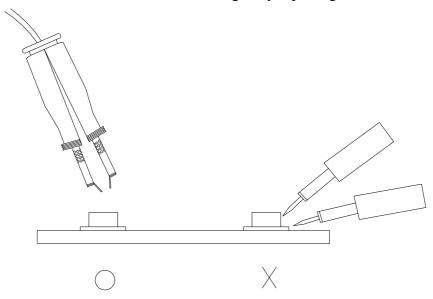
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5.Repairing

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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