Full Color PCB Type SMD LED
VAOL-S2223RGB

Features

- Package in 8mm tape on a 7″ diameter reel.
- Compatible with automatic placement equipment.
- Compatible with infrared and vapor phase reflow solder process.
- Multi-color type.
- Pb-free.
- RoHS compliant version.

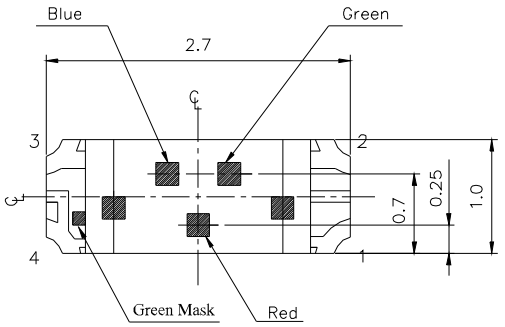
Descriptions

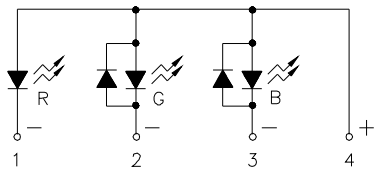
- The SMD Taping is much smaller than lead frame type components, thus enable smaller board size, higher packing density and reduced storage space and finally smaller equipment to be obtained.
- Light weigh makes them ideal for miniature applications.

Device Selection Guide

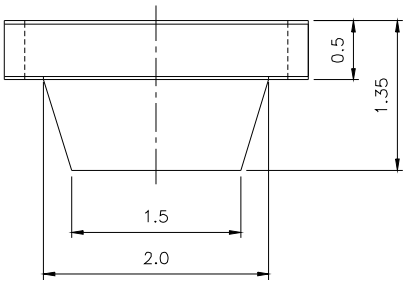
Chip			Lens Color
Type	Material	Emitted Color	
R6	AlInGaN	Brilliant Red	Water Clear
GH	InGaN	Brilliant Green	
BH	InGaN	Blue	

Package Outline Dimensions

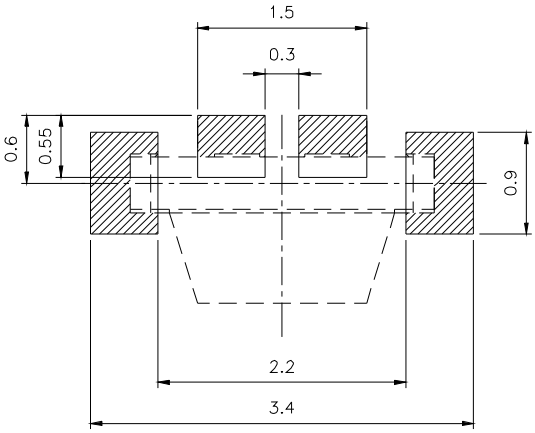


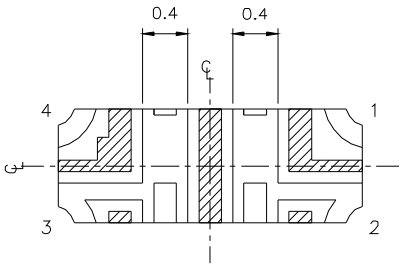


Polarity



For reflow soldering (propose)





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

Absolute Maximum Ratings (Ta=25℃)

Parameter	Symbol	Rating	Unit
Reverse Voltage	V_R	5	V
Forward Current	I_F	R6:25 GH:25 BH:25	mA
Operating Temperature	Topr	-40 ~ +85	℃
Storage Temperature	Tstg	-40 ~ +90	℃
Power Dissipation	Pd	R6:60 GH:110 BH:110	mW
Peak Forward Current (Duty 1/10 @1KHz)	I_{FP}	R6:60 GH:100 BH:100	mA
Soldering Temperature	Tsol	Reflow Soldering : 260 ℃ for 10 se Hand Soldering : 350 ℃ for 3 sec.	

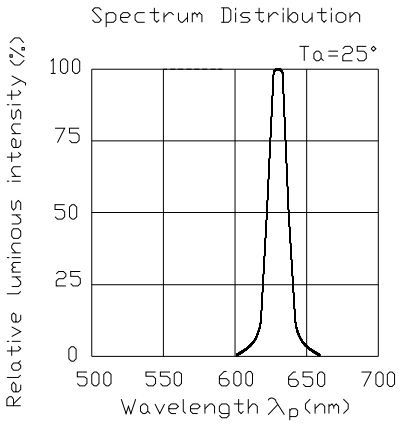
Specific binning requirements- please contact our home office

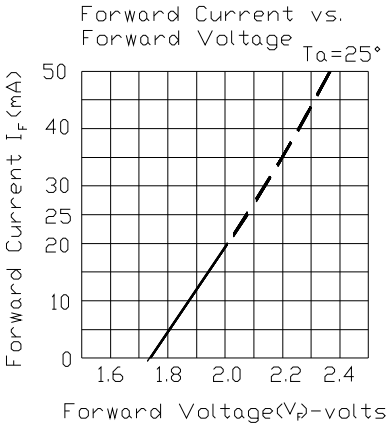
Electro-Optical Characteristics (Ta=25℃)

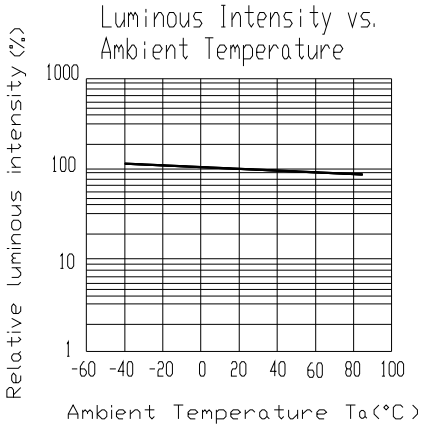
Parameter	Symbol		Min.	Typ.	Max.	Unit	Condition
Luminous Intensity	Iv	R6	45	72	-----	mcd	IF=20mA
		GH	112	180			
		BH	28.5	45			
Viewing Angle θ	2 1/2		-----	120	-----	deg	IF=20mA
Peak Wavelength	λp	R6	-----	632	-----	nm	IF=20mA
		GH		518			
		BH		468			
Dominant Wavelength	λd	R6	615	-----	630	nm	IF=20mA
		GH	510		540		
		BH	460		480		
Spectrum Radiation Bandwidth	△λ	R6	-----	20	-----	nm	IF=20mA
		GH		35			
		BH		35			
Forward Voltage	VF	R6	1.7	2.0	2.4	V	IF=20mA
		GH	2.7	3.3	3.7		
		BH	2.7	3.3	3.7		
Reverse Current	IR	R6	-----	-----	10	μA	VR=5V
		GH			50		
		BH			50		

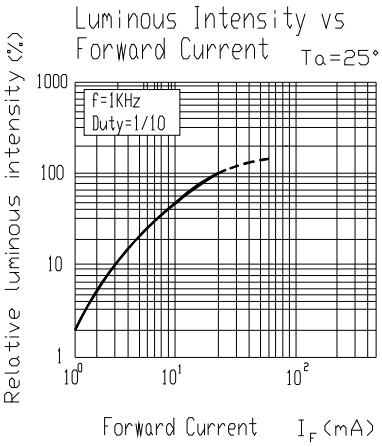
Typical Electro-Optical Characteristics Curves

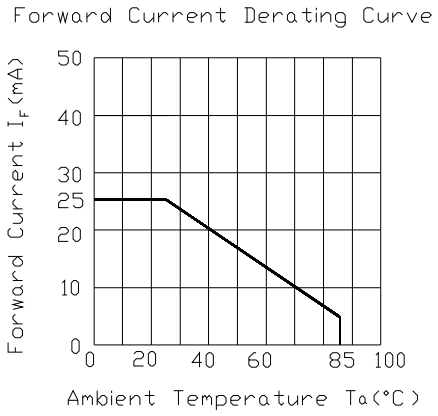
R6

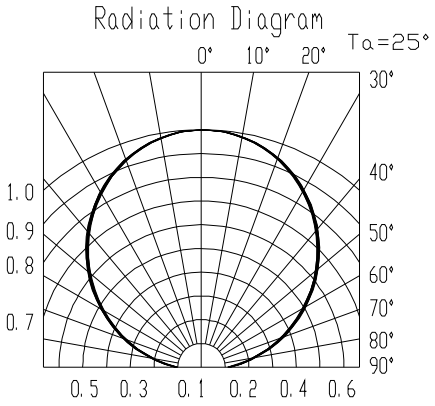






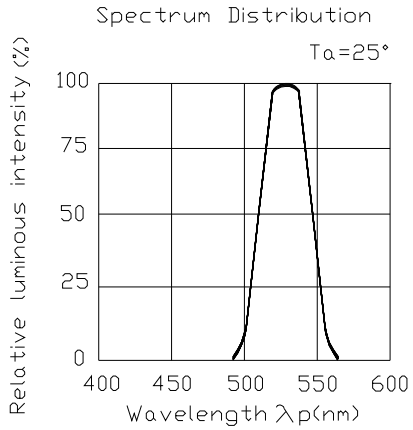


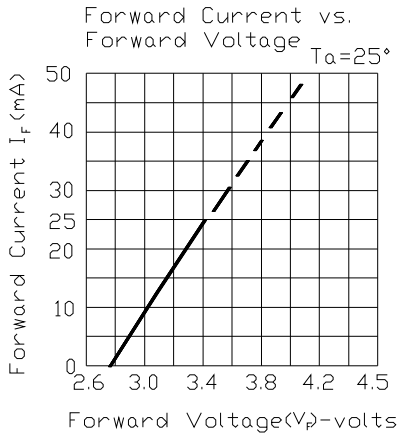


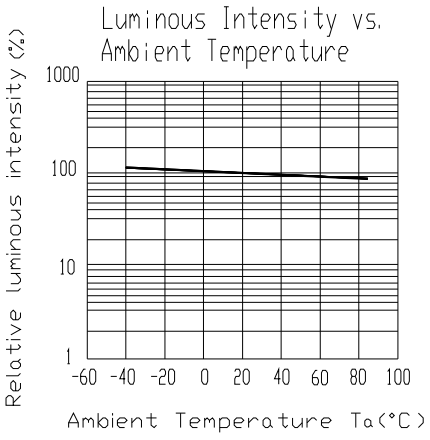


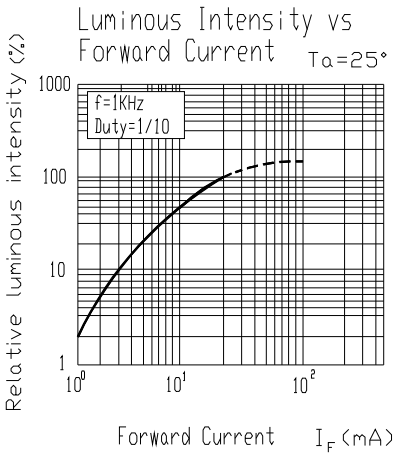
Typical Electro-Optical Characteristics Curves

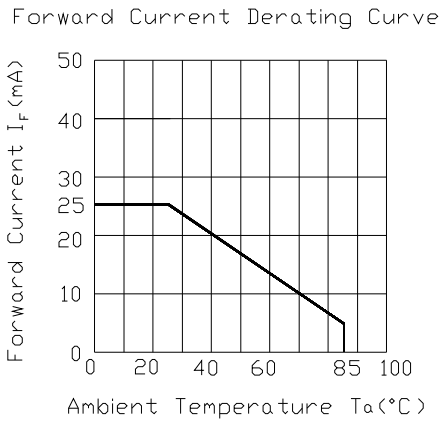
GH

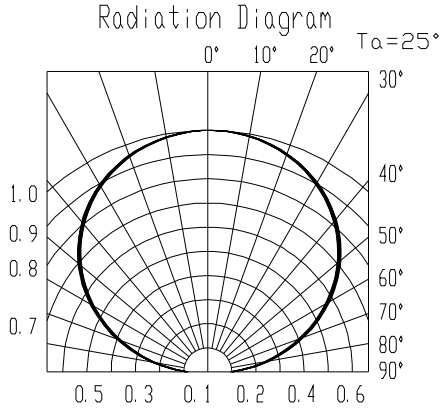






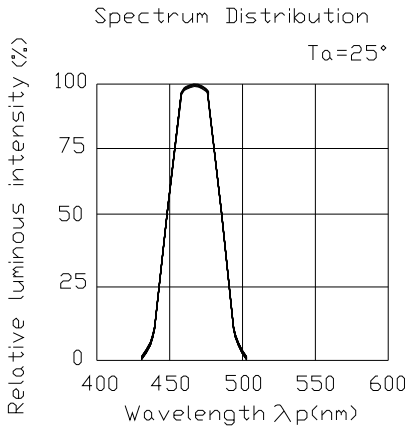


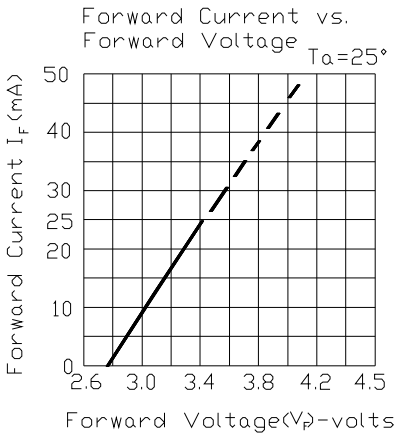


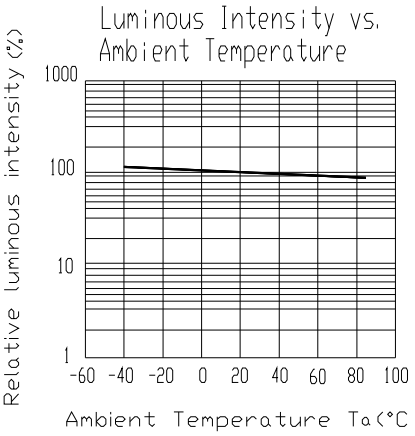


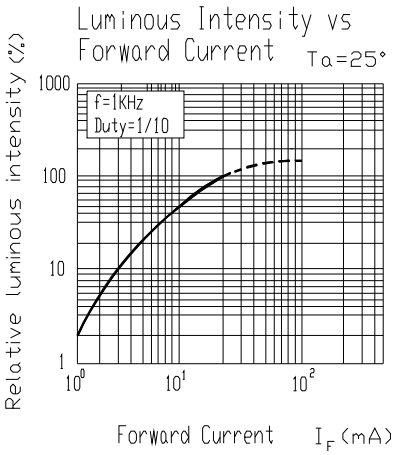
Typical Electro-Optical Characteristics Curves

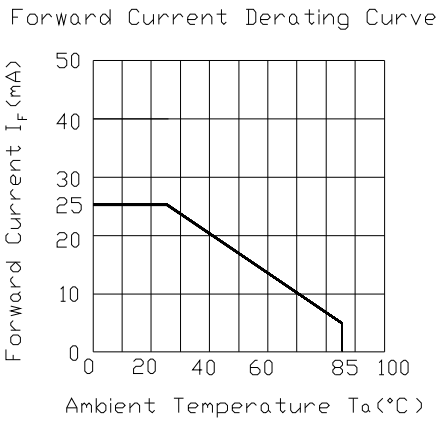
BH

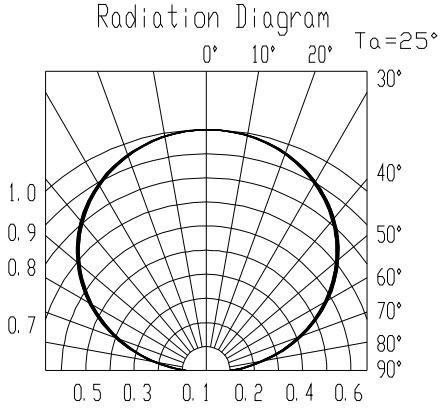




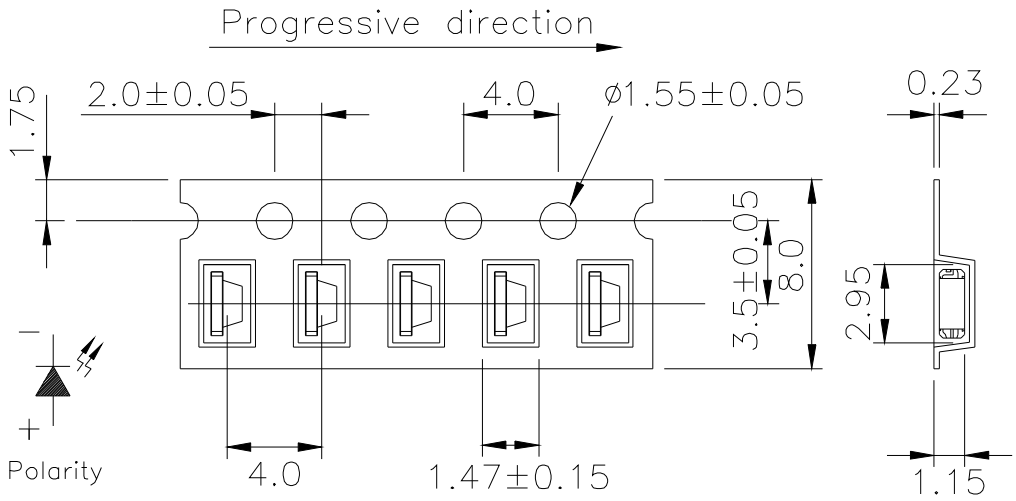








Carrier Tape Dimensions: Loaded quantity 2000 PCS per reel



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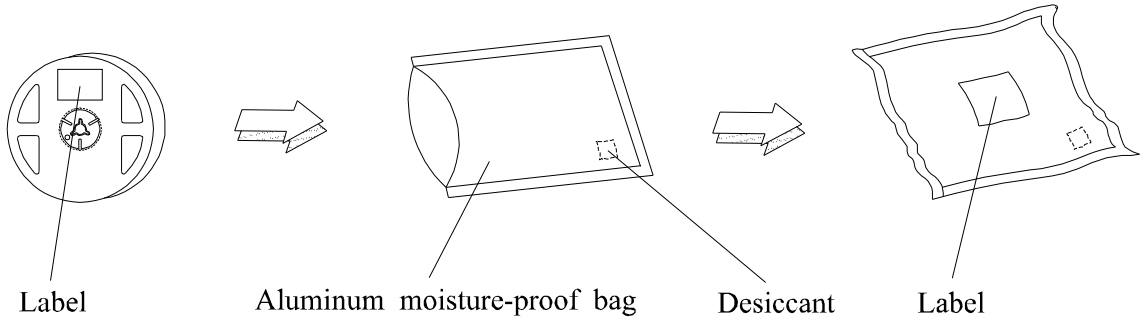
Moisture Resistant Packaging



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℃±5℃ Min. 5sec.	6 Min.	22 PCS.	0/1
2	Temperature Cycle	H : +100℃ 15min ∫ 5 min L : -40℃ 15min	300 Cycles	22 PCS.	0/1
3	Thermal Shock	H : +100℃ 5min ∫ 10 sec L : -10℃ 5min	300 Cycles	22 PCS.	0/1
4	High Temperature Storage	Temp. : 100℃	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 mA	1000 Hrs.	22 PCS.	0/1
7	High Temperature / High Humidity	85℃/ 85%RH	1000 Hrs.	22 PCS.	0/1

Precautions For Use

1. Customer must apply resistors for protection, otherwise a slight voltage shift will cause a big current change.

2. Storage

2.1 Do not open moisture proof bag before the products are ready to use.

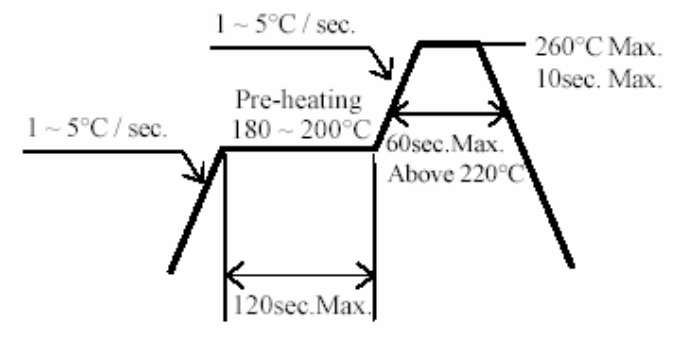
2.2 Before opening the package: The LEDs should be kept at 30℃ or less and 90%RH or less.

2.3 After opening the package: The LED's floor life is 1 year under 30 deg 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℃ 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.