

SML13RGB2KT-TR

Red/Green/Blue

Surface Mount LED

3.15 × 2.75 × 1.9 mm Chip LED

120° Viewing Angle

DWG BY:
LL / GP
11-22-11

R&D:
LUV
02-13-15

MFG:
LD
02-11-15

QA:
EE
02-11-15

REVISION LTR: A
ECR#: 011315-RTD01
02-11-15

SPECIFICATIONS

Absolute Maximum Ratings

(Ta=25°C)

Parameter	Symbol	MAX.	Unit
Continuous Forward Current	If	R	25
		G	25
		B	25
Pulse Forward Current (Duty 1/10 @ 1KHZ)	Ifp	R	100
		G	100
		B	100
Power Consumption	Pc	R	60
		G	95
		B	95
Electrostatic Discharge	ESD	R	2000
		G	1000
		B	1000
Operating Temperature Range	Topr	-40 ~ +85	°C
Storage Temperature Range	Tstg	-40 ~ +100	°C
Reverse Voltage	Vr	5	V
Soldering Temperature	Tslid	Reflow Soldering: 260°C/10sec	
		Hand Soldering: 350°C/3sec	

Electrical / Optical Characteristics

(Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Condition	
Forward Voltage*	Vf	R	1.84	/	2.4	V	If= 20mA
		G	2.8	/	3.8		If= 20mA
		B	2.8	/	3.8		If= 20mA
Luminous intensity*	Iv	R	/	680	/	mcd	If= 20mA
		G	/	1100	/		If= 20mA
		B	/	320	/		If= 20mA
Dominant Wavelength	λd	R	/	622	/	nm	If= 20mA
		G	/	520	/		If= 20mA
		B	/	468	/		If= 20mA
Spectrum Radiation Bandwidth	?λ	R	/	20	/	nm	If= 20mA
		G	/	40	/		If= 20mA
		B	/	30	/		If= 20mA
Reverse Current	Ir	R	/	/	10	μA	VR=5V
		G	/	/	10		VR=5V
		B	/	/	10		VR=5V
Viewing Angle *	2θ _{1/2}	/	120	/	Deg	If= 20mA	

* Forward voltage measurement allowance is ±0.1V.

* Luminous intensity is measured with a light sensor and filter combination that approximates the CIE eye - response curve.

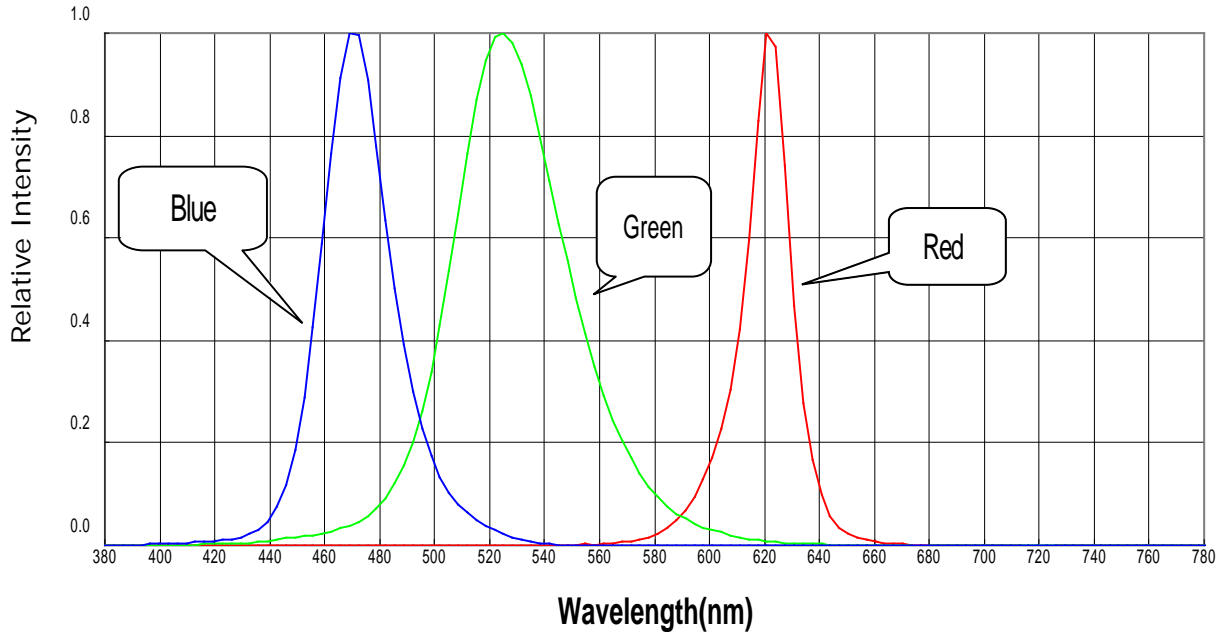
* Luminous Intensity Measurement Allowance is ± 10%.

* Dominant Wavelength measurement allowance is ±1nm.

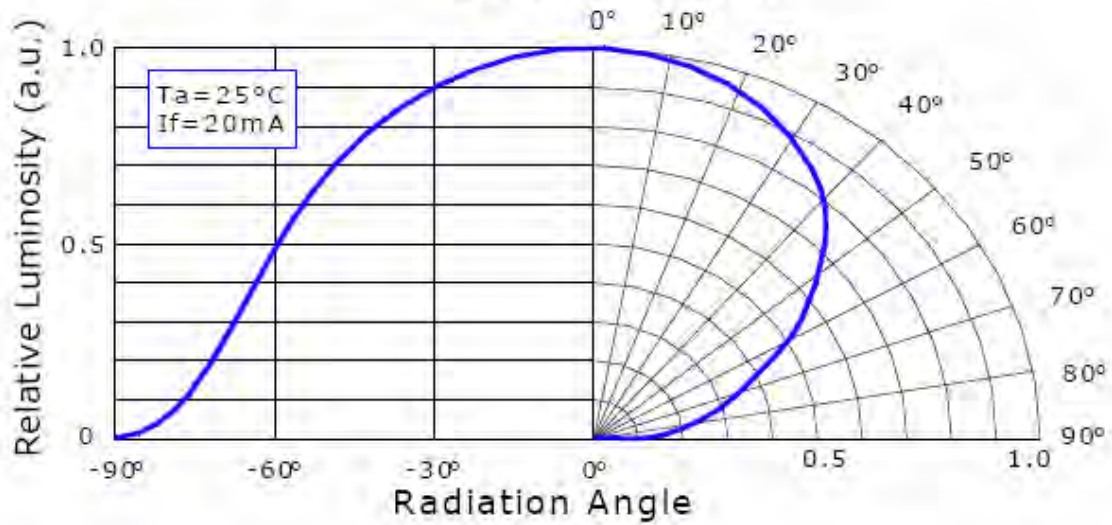
*2θ_{1/2} is the off-axis angle at which the luminous intensity is half the axial luminous intensity.

Typical Electrical / Optical Characteristics Curves

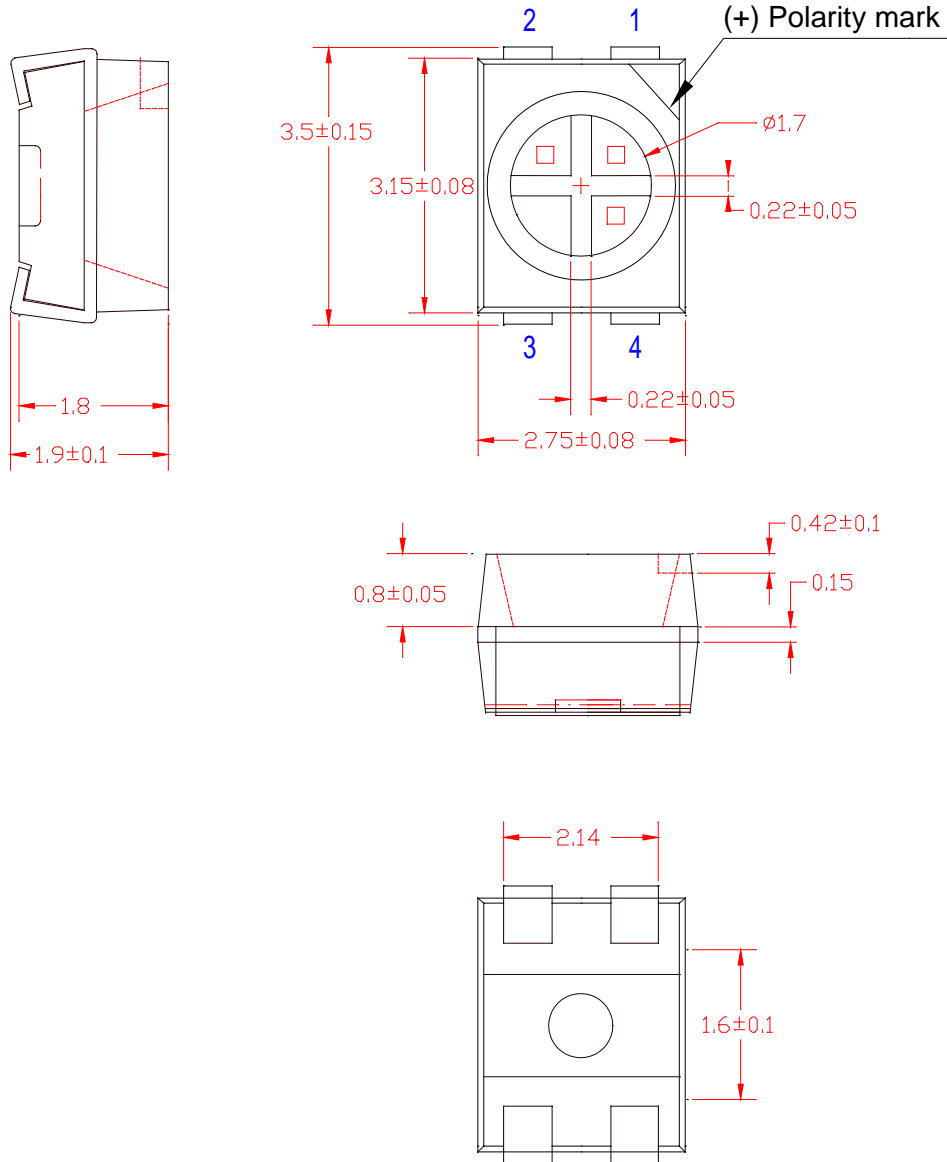
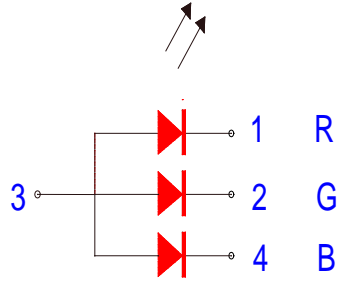
Wavelength Distribution



Beam Pattern

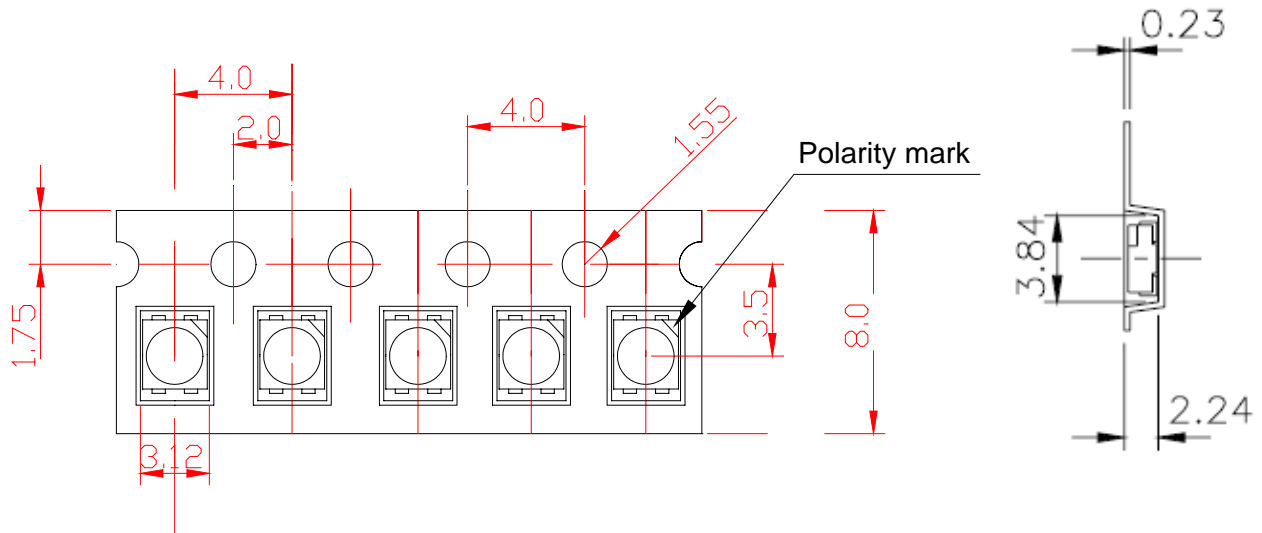
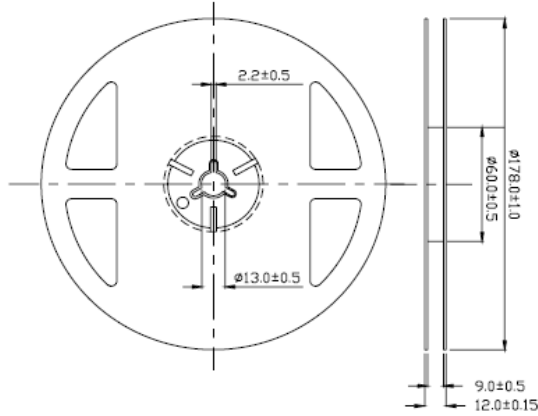


Package



1. All dimensions are in Millimeters.
2. Tolerances are ± 0.1 mm, unless otherwise noted.

Taping Dimension (unit = mm)



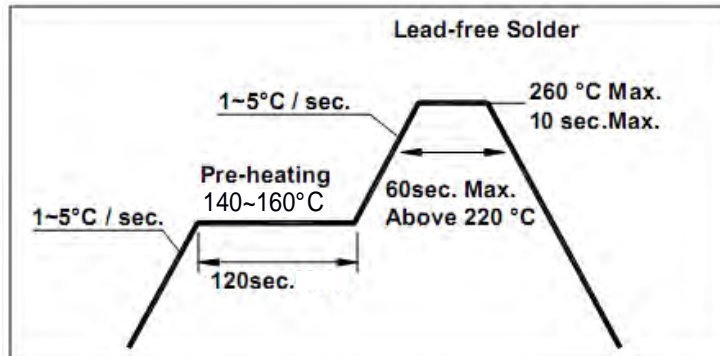
Notes:

1. Tolerance: ± 0.2 (unit= mm)
2. Quantity: 2000 pcs/ Reel

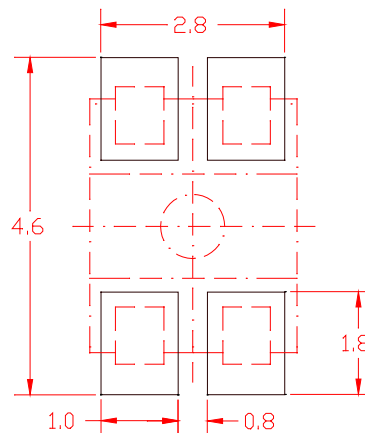
Handling Precaution

Recommended soldering conditions

Reflow solder temperature profile



Recommended Soldering pad design (unit= mm)



Soldering conditions

- Reflow soldering should not be done more than twice.
- When soldering, do not stress on LEDs during heating.
- After soldering, do not warp the circuit board.

Repairing

- Repair should not be done after the LEDs have been soldered. When repair is unavoidable, double-head soldering iron should be used. It is the responsibility of the customer to determine whether the characteristics of the LEDs will be damaged by repair or not.

Cleaning

- It is recommended to use isopropyl alcohol as a solvent to clean the LEDs. When using other solvents, it should be confirmed beforehand whether the solvents will dissolve the package and the resin or not.

Moisture Sensitivity Level (MSL)

- It is recommended that user should complete the use of the whole package within 24 hours upon unsealing the T&R bag. In the event of incomplete usage, it is advised that user bake the remaining devices at 60°C for 24 hours prior to use. MSL=5a.