Part Number: XZCMECBDDGK53W

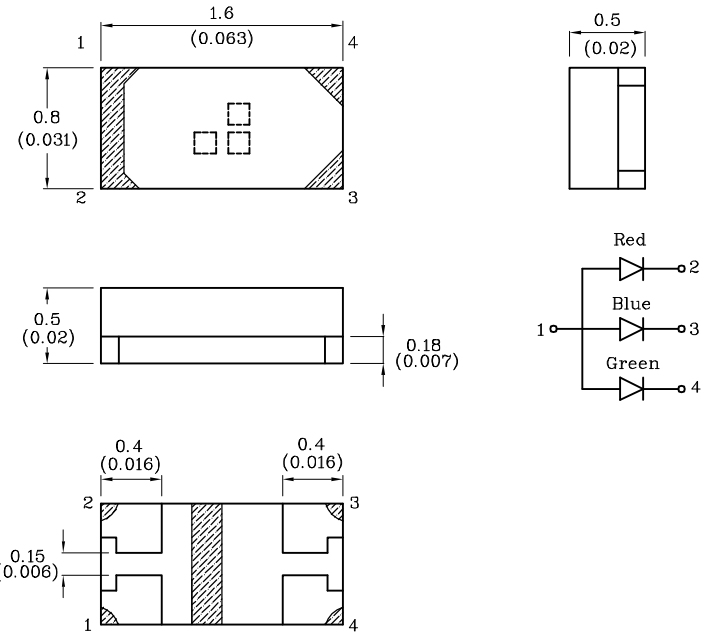
1.6 x 0.8 mm Full-Color Surface Mount LED

Features

- Ideal for indication light on hand held products
- Long life and robust package
- Standard Package: 4,000pcs/ Reel
- MSL (Moisture Sensitivity Level): 3
- Low current IF=2mA operating.
- Halogen-free
- RoHS compliant

ATTENTION
OBSERVE PRECAUTIONS
FOR HANDLING
ELECTROSTATIC
DISCHARGE
SENSITIVE
DEVICES

Package Schematics



Notes:
1. All dimensions are in millimeters (inches).
2. Tolerance is ±0.15(0.006") unless otherwise noted.
3. Specifications are subject to change without notice.

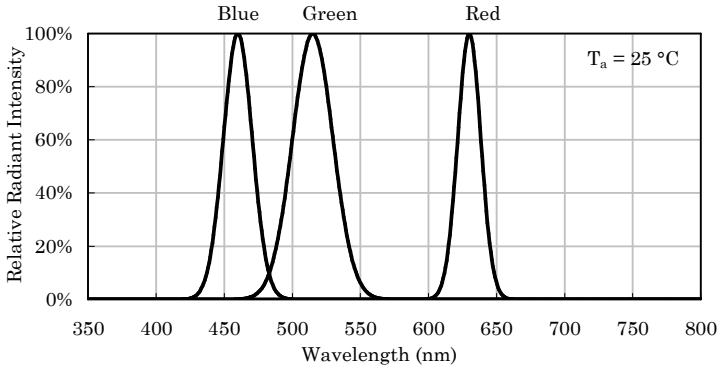
Absolute Maximum Ratings (T_A=25°C)		**Red (AlGaInP)**	**Blue (InGaN)**	**Green (InGaN)**	**Unit**
Power Dissipation	P_D [1]	75	80	82	mW
Reverse Voltage	V_R	5	5	5	V
Junction Temperature	T_J	115	115	115	°C
Operating Temperature	T_A	-40 to +85			°C
Storage Temperature	Tstg	-40 to +85			°C
DC Forward Current	I_F [1]	30	20	20	mA
Forward Current (Peak) 1/10 Duty Cycle,0.1ms Pulse Width	iFS	195	100	100	mA
Electrostatic Discharge Threshold (HBM)	-	3000	250	450	V
Thermal Resistance (Junction / Ambient)	$R_{th\ j\text{-}a}$ [2]	730	720	700	°C/W
Thermal Resistance (Junction / Solder point)	$R_{th\ j\text{-}s}$ [2]	610	620	590	°C/W

Notes:
1. The maximum ratings are valid for the case of lighting a single chip
   When two chips are lit at the same time, each chip should be driven at a current lower than 50% of the absolute maximum ratings
   When three chips are lit at the same time, each chip should be driven at a current lower than 30% of the absolute maximum ratings
2. Rth(j-a),Rth(j-s)Results from mounting on PC board FR4 (pad size≥16 mm² per pad).
3. A Relative Humidity between 40% and 60% is recommended in ESD-protected work areas to reduce static build up during assembly process (Reference JEDEC/JESD625-A and JEDEC/J-STD-033)

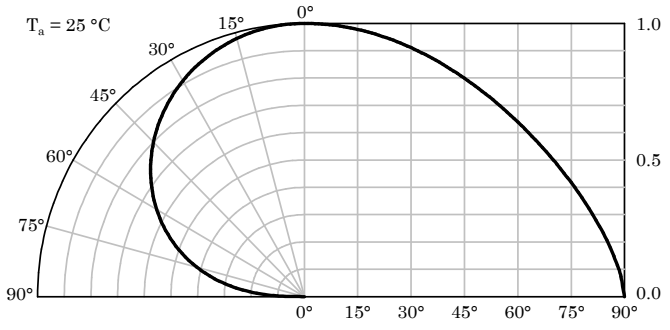
Operating Characteristics (T_A=25°C)		**Red (AlGaInP)**	**Blue (InGaN)**	**Green (InGaN)**	**Unit**
Wavelength of Peak Emission CIE127-2007* (Typ.) (I_F=2mA)	λ P	630*	460*	515*	nm
Wavelength of Dominant Emission CIE127-2007* (Typ.) (I_F=2mA)	λ D	621*	465*	525*	nm
Spectral Line Full Width at Half-Maximum (Typ.) (I_F=2mA)	Δλ	20	25	35	nm
Capacitance (Typ.) (V_F=0V, f=1MHz)	C	25	100	45	pF
Forward Voltage I_F=2mA (Typ.)	V_F	1.8	2.65	2.65	V
Forward Voltage I_F=2mA (Max.)	V_F	2.1	3.1	3.1	V
Reverse Current (V_R = 5V) (Max.)	I_R	10	50	50	μA
Temperature Coefficient of λ peak (Typ.) I_F=2mA, -10°C≤ T≤85°C	TC λ peak	0.13	0.04	0.05	nm/°C
Temperature Coefficient of λ dom (Typ.) I_F=2mA, -10°C≤ T≤85°C	TC λ dom	0.06	0.03	0.03	nm/°C
Temperature Coefficient of V_F (Typ.) I_F=2mA, -10°C≤ T≤85°C	TC_V	-1.9	-2.9	-2.9	mV/°C

Part Number	Emitting Color	Emitting Material	Lens-color	Luminous Intensity CIE127-2007* (I_F=2mA) mcd		Wavelength CIE127-2007* nm λP	Viewing Angle 2θ 1/2
				min.	typ.		
XZCMECBDDGK53W	Red	AlGaInP	Water Clear	4*	14*	630*	140°
	Blue	InGaN		4*	9*	460*	
	Green	InGaN		20*	69*	515*	

*Luminous intensity value and wavelength are in accordance with CIE127-2007 standards.

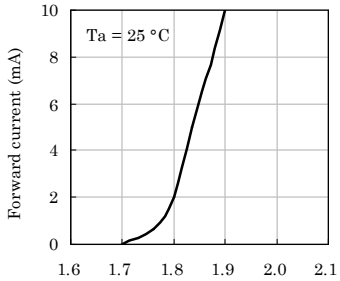


Relative Intensity Vs. CIE Wavelength

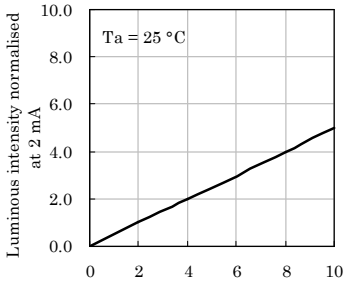


Spatial Distribution

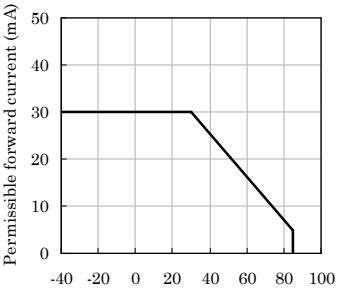
❖ Red



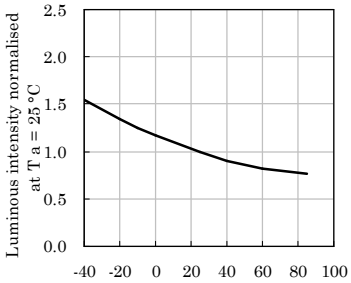
Forward Current vs.
Forward Voltage



Luminous Intensity vs.
Forward Current

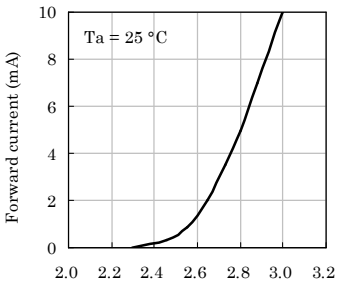


Forward Current
Derating Curve

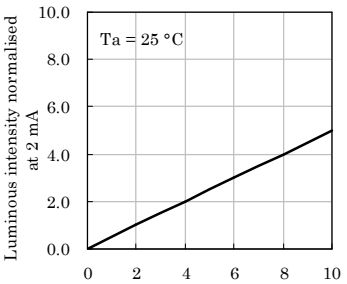


Luminous Intensity vs.
Ambient Temperature

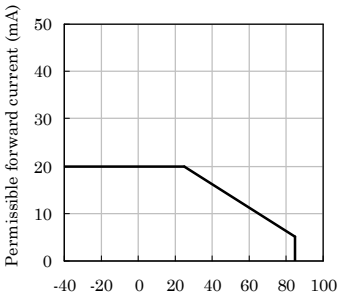
❖ Blue



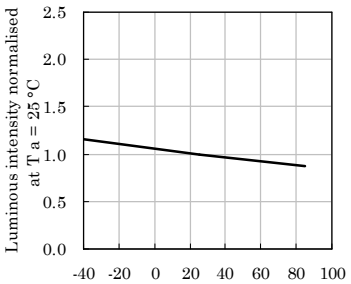
Forward Current vs.
Forward Voltage



Luminous Intensity vs.
Forward Current

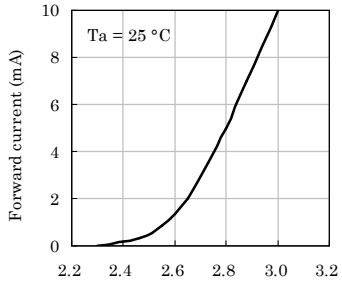


Forward Current
Derating Curve

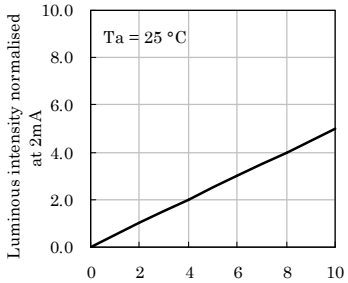


Luminous Intensity vs.
Ambient Temperature

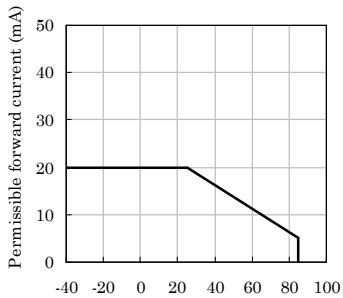
❖ Green



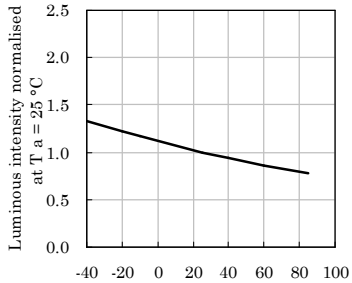
Forward Current vs.
Forward Voltage



Luminous Intensity vs.
Forward Current



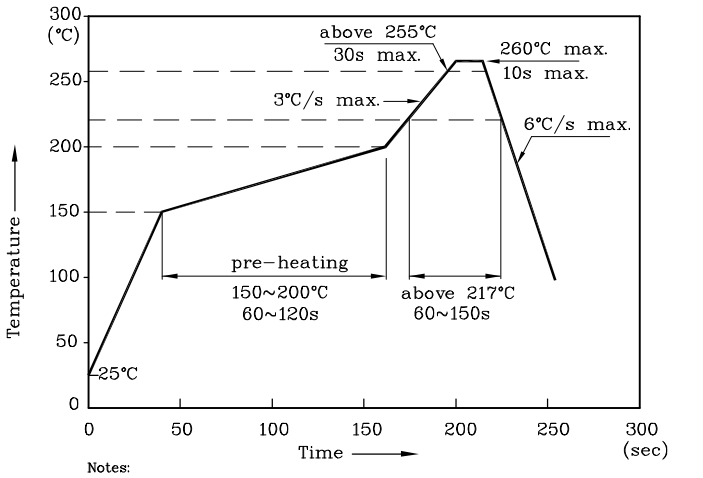
Forward Current
Derating Curve



Luminous Intensity vs.
Ambient Temperature

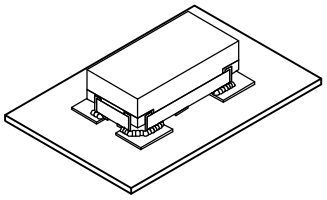
LED is recommended for reflow soldering and soldering profile is shown below.

Reflow Soldering Profile for SMD Products (Pb−Free Components)

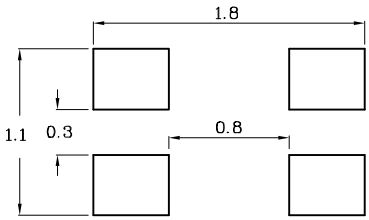


Notes:
1. All temperatures refer to the center of the package, measured on the package body surface facing up during reflow.
2. Do not apply any stress to the LED during high temperature conditions.
3. Maximum number of soldering passes: 2

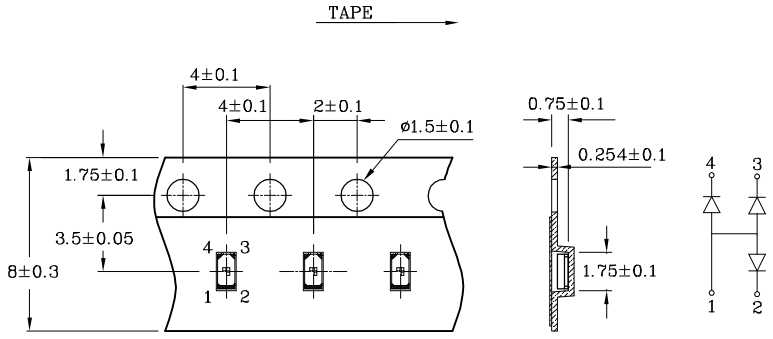
❖ The device has a single mounting surface. The device must be mounted according to the specifications.



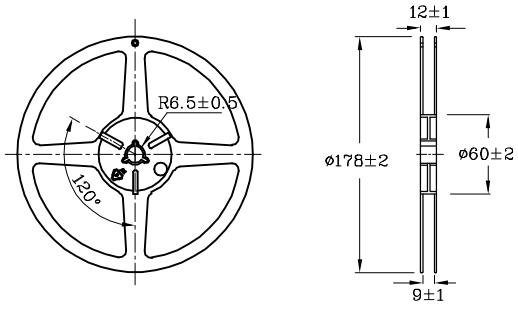
❖ Recommended Soldering Pattern (Units : mm; Tolerance: ± 0.1)



❖ Tape Specification (Units : mm)



❖ Reel Dimension (Units : mm)



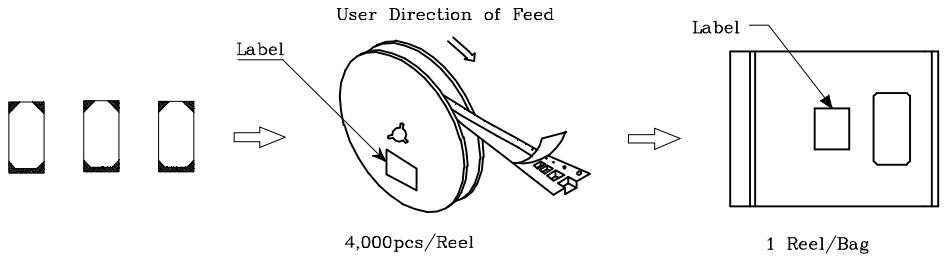
Remarks:

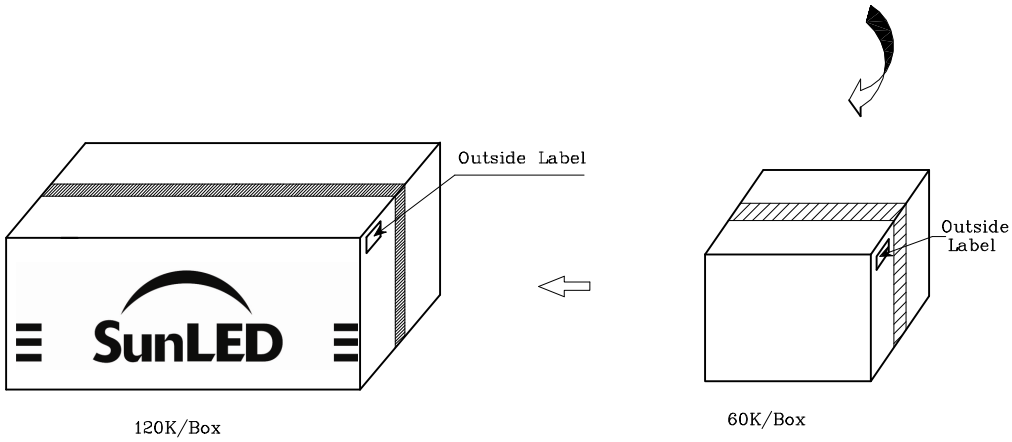
If special sorting is required (e.g. binning based on forward voltage, Luminous intensity / luminous flux, or wavelength), the typical accuracy of the sorting process is as follows:

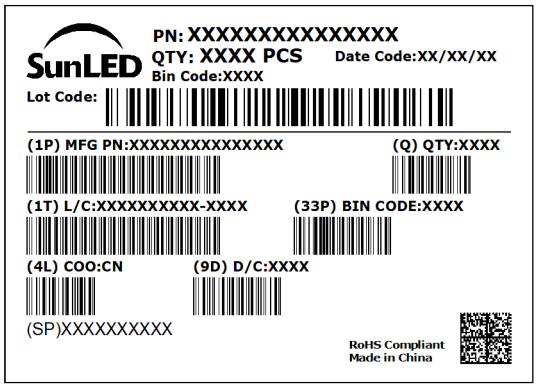
1. Wavelength: +/-1nm
2. Luminous intensity / luminous flux: +/-15%
3. Forward Voltage: +/-0.1V

Note: Accuracy may depend on the sorting parameters.

PACKING & LABEL SPECIFICATIONS







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2. Contents within this document are subject to improvement and enhancement changes without notice.
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