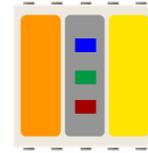


PRODUCT:

5050 SURFACE MOUNT RGBWW LED



FEATURES:

5.4 mm x 5.0 mm x 1.65 mm surface-mount LED
120° emission angle

DESCRIPTION

YUJILED S® RGBWW 5050 allows for high brightness with individual red, green, blue and white emission control in a PLCC-10 package.



ELECTRICAL-OPTICAL CHARACTERISTICS (T _A = 25 °C)							
PARAMETER	SYMBOL	VALUE			UNIT	TOLERANCE	CONDITION
		MIN.	TYP.	MAX.			
Forward voltage	2700K	2.7	--	3.2	V	±0.1	I _f = 30mA
	6500K	2.7	--	3.2	V		
	R	1.95	--	2.4	V		I _f = 20mA
	G	2.9	--	3.3	V		
	B	3.0	--	3.4	V		
Dominant wavelength	λ _R	619	--	624	nm	±1	I _f = 20mA
	λ _G	518		523			
	λ _B	465		470			
Intensity	2700K	8	--	13	lm	±10%	I _f = 30mA
	6500K	9	--	13	lm		
	R	800	--	1200	mcd		I _f = 20mA
	G	1200	--	2100	mcd		
	B	320	--	530	mcd		
Color rendering index (2700K / 6500K)	Ra	95	--	--	--	±1	I _f = 30mA
TCS R9 (CRI Red) (2700K / 6500K)	R9	80	--	--	--	±1	I _f = 30mA
Reverse current	I _r	--	--	10	μA	±0.1	V _r = 5V
Correlated color temperature*	CCT _{2700K}	2625	2700	2775	K	--	I _f = 30mA
	CCT _{6500K}	6250	6500	6750			
Viewing angle	2θ _{1/2}	--	120	--	Deg	±5	I _f = 20 / 30mA

* CCT range is tested under Yuji Everfine standard equipment which shall prevail, CIE1931 chromaticity coordinate tolerance ±0.0015 as reference.



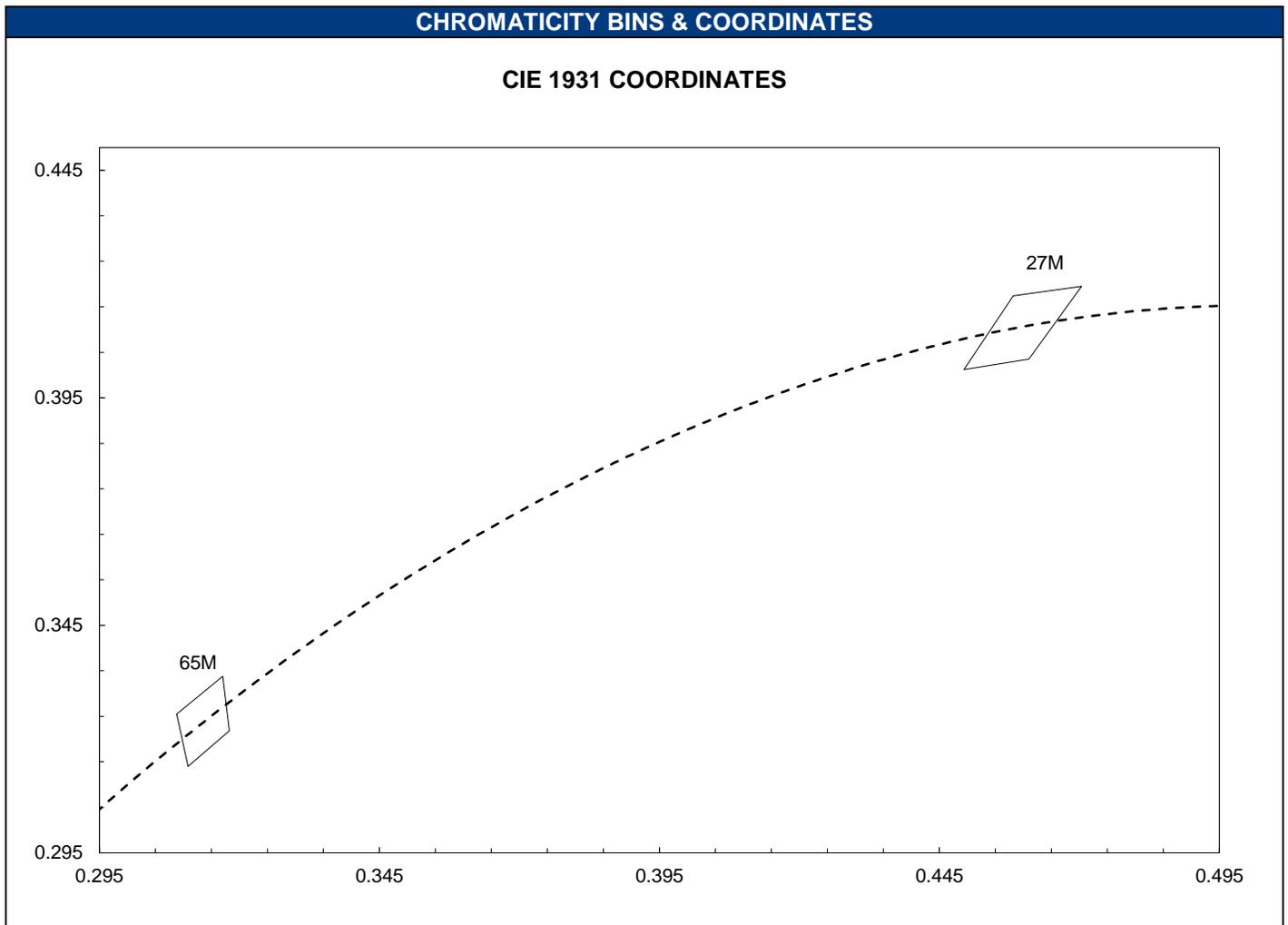
ORDERING INFORMATION			
PART NUMBER	CCT	CHROMATICITY BINS	VOLTAGE RANGE
YJ-BC-RGBWW-5050L-G03-2765	2700K ± 75K	27M	0.2 V
	6500K ± 250K	65M	0.2 V
YJ-BC-RGBWW-5050L-G03-XXXX	CUSTOM		

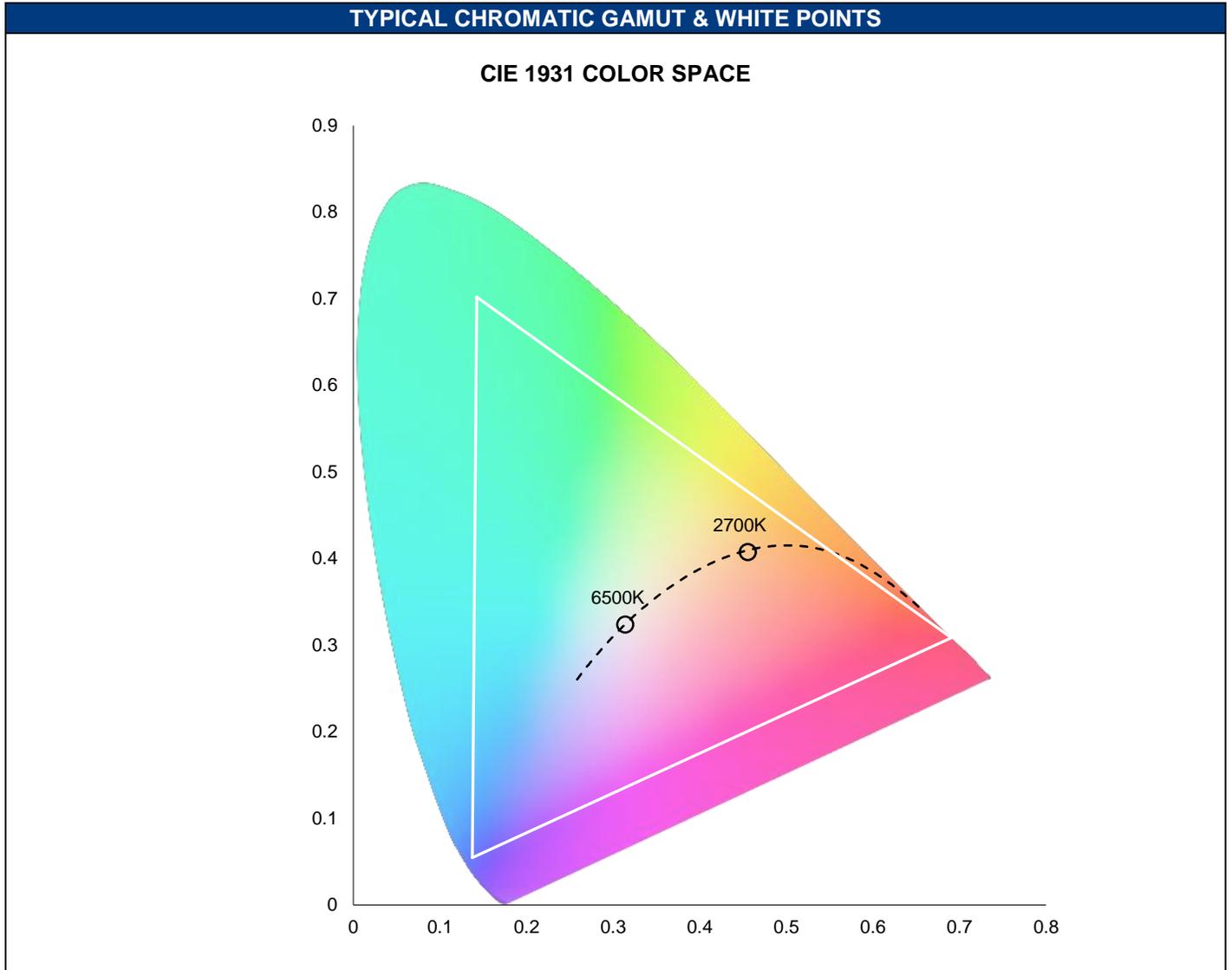
ABSOLUTE MAXIMUM RATING (T_A = 25 °C)			
PARAMETER	SYMBOL	LIMIT	UNIT
Power Consumption (Simultaneous)	P _D	500	mW
DC Forward Current (Individual)	I _{FR}	30	mA
	I _{FG}	30	
	I _{FB}	30	
	I _{FW}	40	
	I _F	130	
DC Forward Current (Simultaneous)	I _F	130	mA
DC Forward Current (Pulsed Individual*)	I _{FP}	80	mA
Reverse Voltage	V _R	5	V
Operating Temperature	T _{opr}	-40 ~ +85	°C
Storage Temperature	T _{stg}	-40 ~ +100	°C
Soldering Temperature**	T _{sol}	70	°C
Junction Temperature	T _j	95	°C
Electrostatic Discharge(HBM)	ESD	2000	V
Reflow Cycles Allowed	-	2	-

* Pulse width ≤ 0.1ms, Duty ≤ 1/10.

** See page 5 for solder point definition.

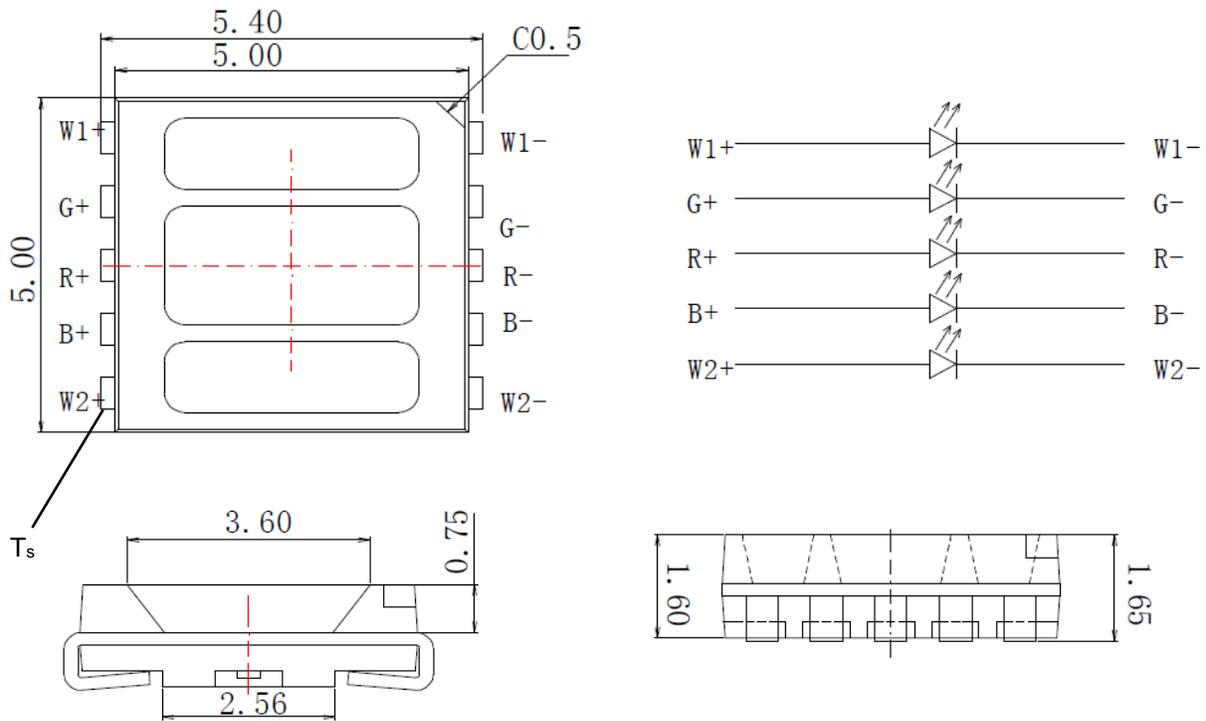
CHROMATICITY BINS & COORDINATES									
CCT	BIN	CIE 1931 COORDINATES							
		X0	Y0	X1	Y1	X2	Y2	X3	Y3
6500K	65M	0.3088	0.3255	0.3108	0.3140	0.3182	0.3218	0.3170	0.3338
2700K	27M	0.4582	0.4174	0.4494	0.4012	0.4610	0.4035	0.4704	0.4195





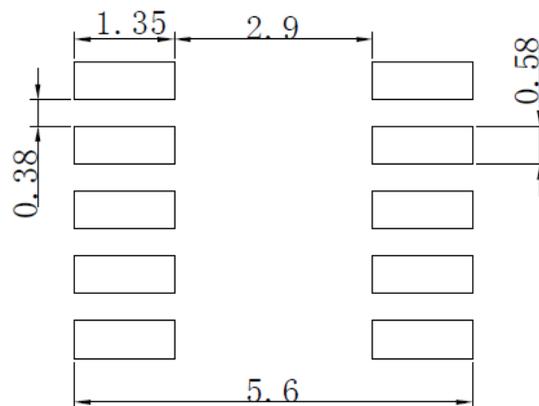
PACKAGE LAYOUT

All dimensions in mm, tolerance unless mentioned is ± 0.1 mm.
 W1 = 2700K, W2 = 6500K



RECOMMENDED SOLDER PAD LAYOUT

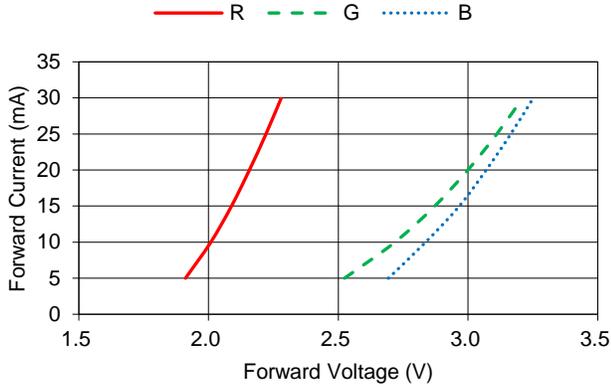
All dimensions in mm, tolerance unless mentioned is ± 0.1 mm.



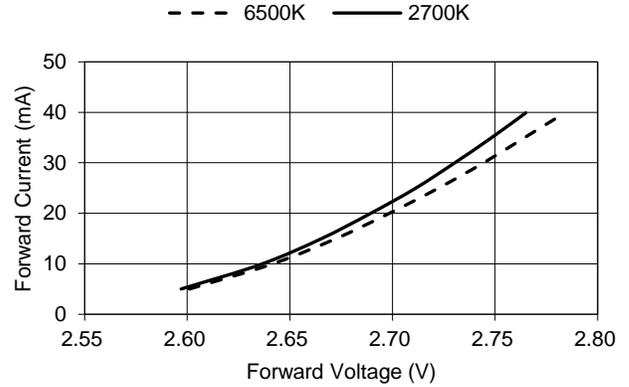
CHARACTERISTIC CURVES

ALL CHARACTERISTIC CURVES ARE FOR REFERENCE ONLY AND NOT GUARANTEED

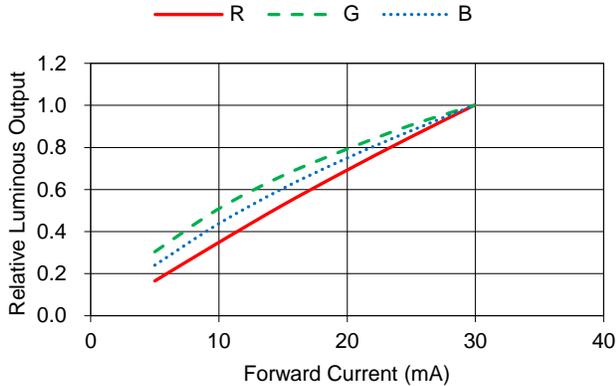
FORWARD CURRENT VS FORWARD VOLTAGE ($T_A = 25^\circ\text{C}$)



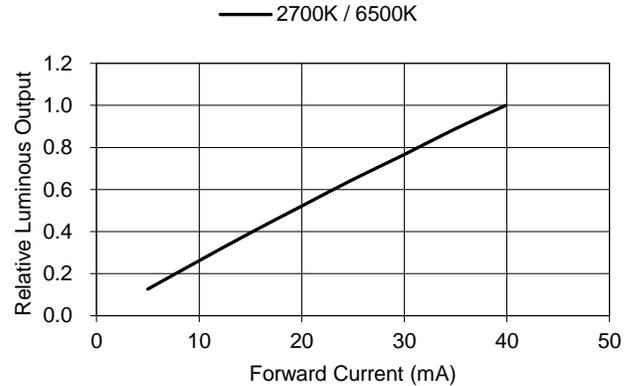
FORWARD CURRENT VS FORWARD VOLTAGE ($T_A = 25^\circ\text{C}$)



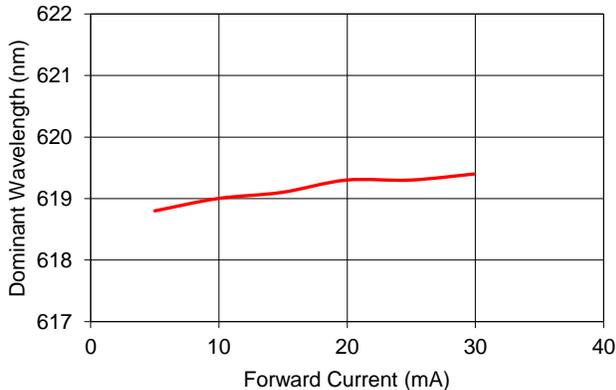
FORWARD CURRENT VS RELATIVE LUMINOUS OUTPUT ($T_A = 25^\circ\text{C}$)



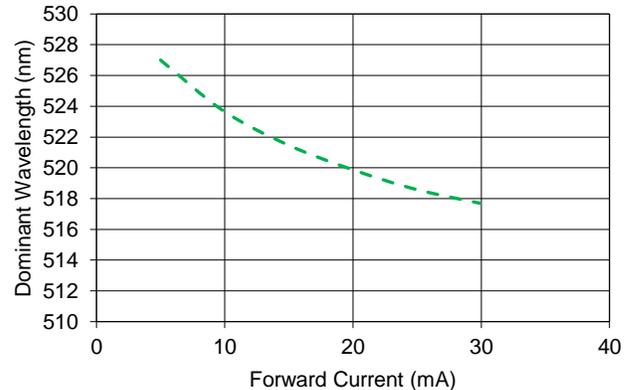
FORWARD CURRENT VS RELATIVE LUMINOUS OUTPUT ($T_A = 25^\circ\text{C}$)



FORWARD CURRENT VS DOMINANT WAVELENGTH (R)

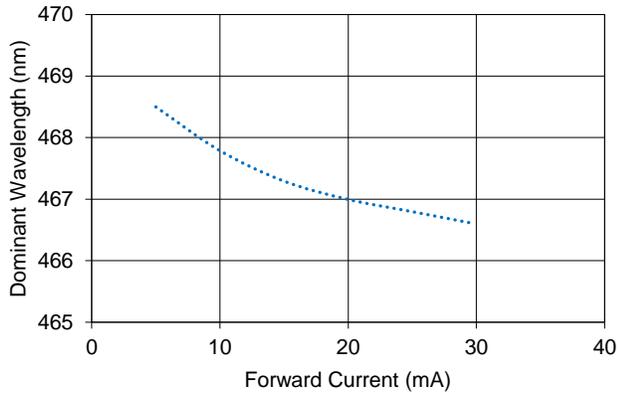


FORWARD CURRENT VS DOMINANT WAVELENGTH (G)

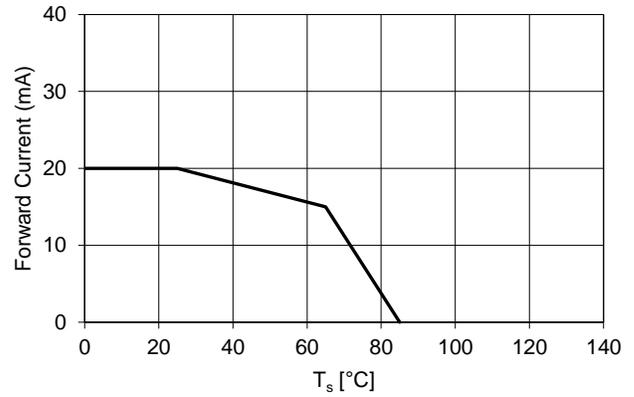


CHARACTERISTIC CURVES (CONTINUED)

FORWARD CURRENT VS DOMINANT WAVELENGTH (B)

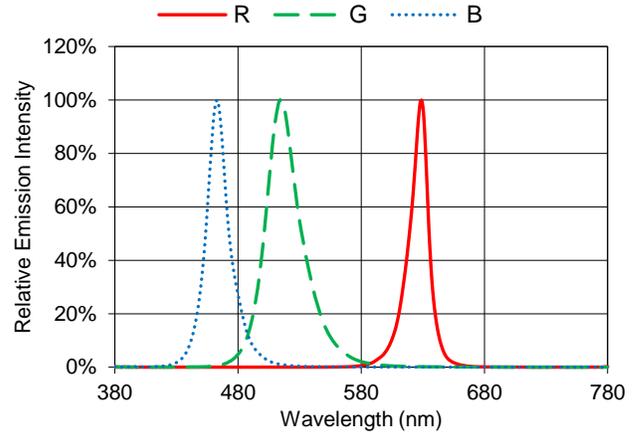
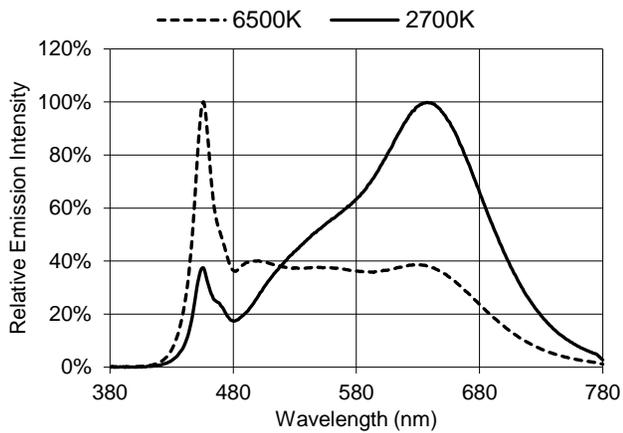


FORWARD CURRENT DERATING BASED ON SOLDER POINT



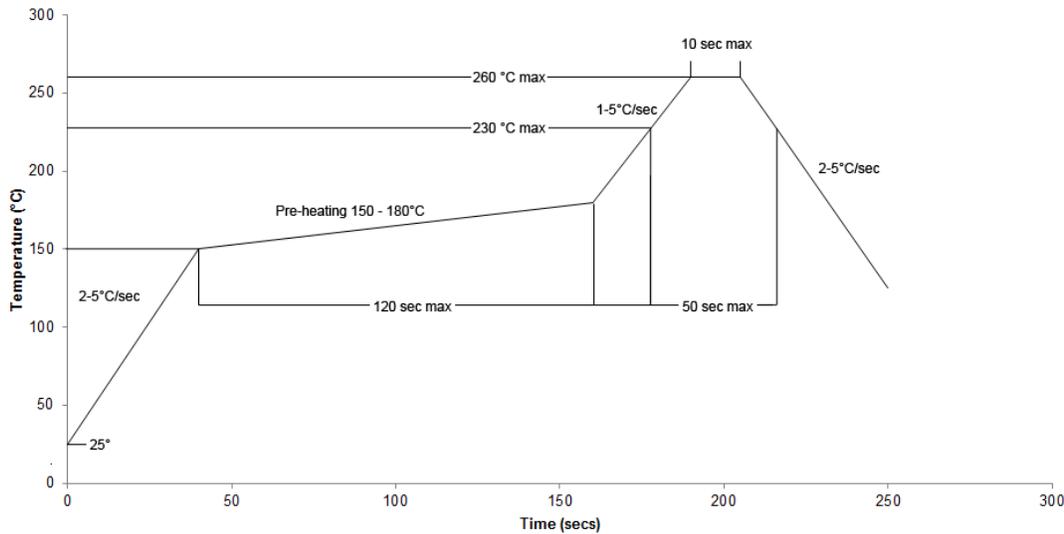
NOTE: DE-RATING CURVES ARE MEANT FOR RECOMMENDATION ONLY AND ARE NOT MEANT TO PROVIDE GUARANTEES OF PRODUCT STABILITY AND LONGEVITY

TYPICAL SPECTRAL DISTRIBUTION GRAPHS



REFLOW PROFILE

SOLDERING RAMP-UP TIME (Pb-FREE)



NOTE: Soldering paste with the melting point at 230°C is recommended.

INSTRUCTIONS FOR SMT

Problems caused by improper selection of collet

Choosing the right collet is important in ensuring product quality after SMT. LEDs are different from other electronic components, as they are not only concerned with electrical output but also optical output. This characteristic makes LEDs more fragile in the process of SMT. If the collet's lowering height is not well set, it will bring damage to the gold wire at the time of collet's pick-and-place process which can cause the LED to not illuminate, flicker or contribute to other quality problems, some of which may not be immediately detectable.

Collet selection

During SMT, please choose the collet that has larger outer diameter than the lighting area of lens, in order to avoid damage the gold wire inside the LED. Different collets fit for different products, please refer to the following figures below.



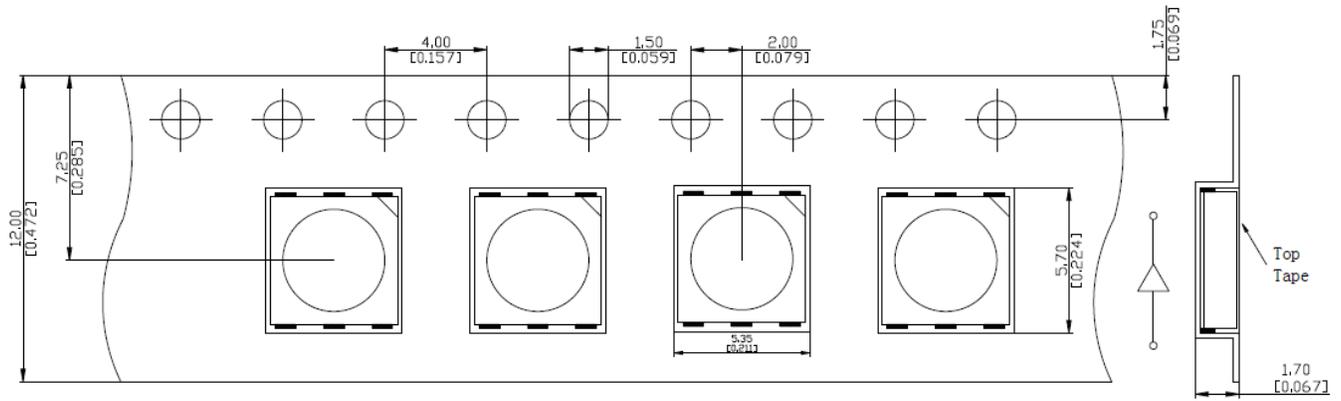
Setting the height of the collet is crucial in order to avoid damage to the top view SMD. If the collet setting is set to too low of an altitude, the collet will press down on the SMD, causing damage or breakage to the encapsulant and cause distortion or breakage of the gold wire.

Other notes of caution:

- No pressure should be exerted to the epoxy shell of the SMD under high temperature.
- Do not scratch or wipe the lens since the lens and gold wire inside are rather fragile and cross out easy to break.
- LED should be used as soon as possible when being taken out of the original package, and should be stored in anti-moisture and anti-ESD package.
- This usage and handling instructions are for reference only.

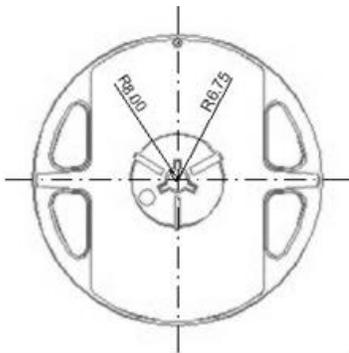
TAPE SPECIFICATIONS

TAPE DIMENSIONS (UNIT: MM)

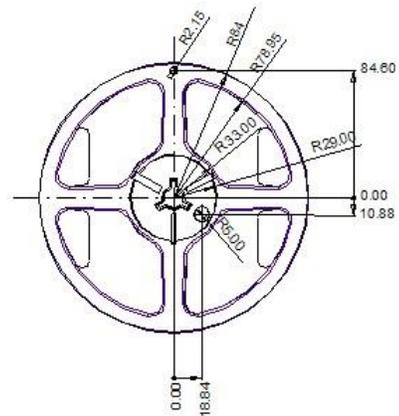


REEL SPECIFICATIONS

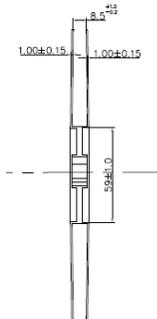
REEL DIMENSIONS TOP (UNIT: MM)



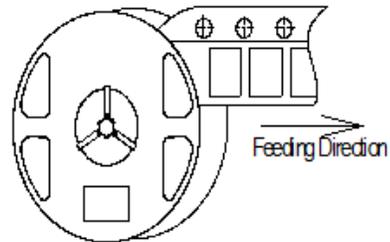
REEL DIMENSIONS BOTTOM (UNIT: MM)



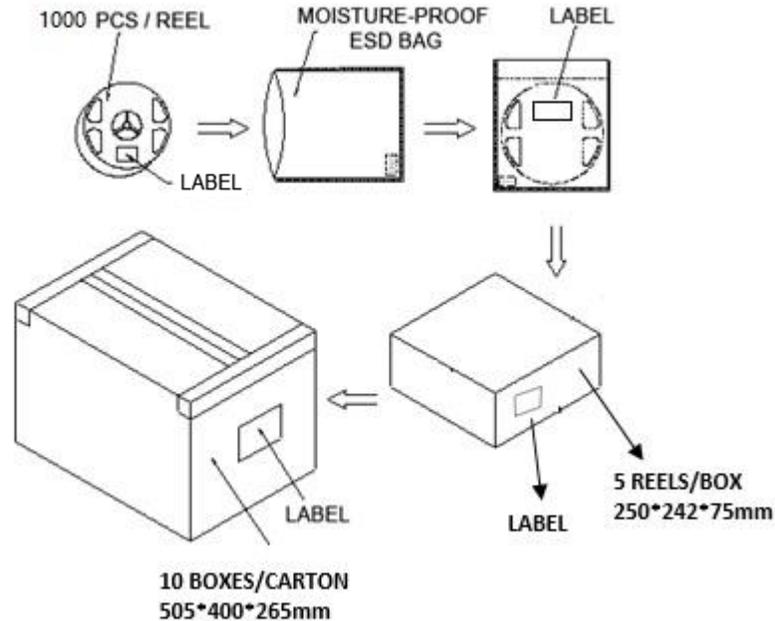
REEL DIMENSIONS SIDE (UNIT: MM)



FEEDING DIRECTION



SHIPPING INFORMATION



NOTES:

1. Reeled products (max 1,000 pcs / reel) are packed in a moisture-proof bag along with a moisture desiccant pack.
2. Each inner box contains up to 5 moisture-proof bag (total maximum number of SMDs is 5,000pcs). Box package size: 250 mm x 242 mm x 75 mm.
3. Each outer package contains 10 inner boxes. Box size: 505 mm x 400 mm x 265 mm.
4. Outer package is sealed with protective bubble wrap and foam. (Part numbers, lot numbers, quantity should appear on the label on the moisture-proof bag, part numbers).
5. This packaging merely intended as a reference for standard quantity orders only – please note that actual packaging can differ depending on the order circumstances.