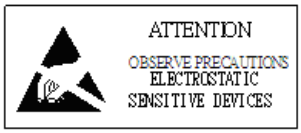
PRODUCT:

2835 SURFACE MOUNT LED

FEATURES:
2.8 mm × 3.5 mm × 0.75 mm surface-mount LED
120° emission angle
95 min Ra

DESCRIPTION
YUJILEDS® BC Series 4th generation 2835 SMD provides a no-compromise high CRI, high efficacy and remarkable chromatic consistency solution in an industry standard PCT package. Providing 95 CRI (min), this mid-power LED can be used in a variety of applications demanding high color quality and performance.



ELECTRICAL-OPTICAL CHARACTERISTICS (T_A = 25 °C)							
PARAMETER	SYMBOL	VALUE			UNIT	TOLERANCE	CONDITION
		MIN.	TYP.	MAX.			
Forward voltage	V_f	2.8	--	3.2	V	±0.05	I_f = 150mA
Luminous flux	Φ_{2700K}	47	--	52	lm	--	I_f = 150mA
	Φ_{3200K}	51		56			
	Φ_{4000K}	55		60			
	Φ_{5000K}	58		63			
	Φ_{5600K}	58		63			
	Φ_{6500K}	58		63			
Correlated color temperature	CCT_{2700K}	2600	2700	2800	K	--	I_f = 150mA
	CCT_{3200K}	3100	3200	3300			
	CCT_{4000K}	3800	4000	4200			
	CCT_{5000K}	4800	5000	5200			
	CCT_{5600K}	5350	5600	5850			
	CCT_{6500K}	6150	6500	6850			
Color rendering index	Ra*	95	--	--	--	±1	I_f = 150mA
TCS R9 (CRI Red)	R9	--	90	--	--	--	I_f = 150mA
Chromaticity coordinates	(X,Y)**	--	--	--	--	±0.0015	--
Reverse current	I_r	--	--	10	μA	±0.1	V_r = 5V
Viewing angle	2θ1/2	--	120	--	Deg	±5	I_f = 150mA

*Typical Ra = 95 at 6500K.
**Yuji Everfine standard equipment shall prevail.

ORDERING INFORMATION			
PART NUMBER	**CCT**	**CHROMATICITY BINS**	**VOLTAGE RANGE**
YJ-BC-2835H-G04-27	2700K ± 100K	27M	0.1 V
YJ-BC-2835H-G04-32	3200K ± 100K	32M	0.1 V
YJ-BC-2835H-G04-40	4000K ± 180K	40M	0.1 V
YJ-BC-2835H-G04-50	5000K ± 200K	50M	0.1 V
YJ-BC-2835H-G04-56	5600K ± 250K	56M	0.1 V
YJ-BC-2835H-G04-65	6500K ± 350K	65M	0.1 V
YJ-BC-2835H-G04-XX	CUSTOM		

ABSOLUTE MAXIMUM RATING (T_A = 25 °C)			
PARAMETER	**SYMBOL**	**LIMIT**	**UNIT**
Power Consumption	P_D	600	mW
DC Forward Current (pulsed)*	I_{Fp}	400**	mA
DC Forward Current	I_F	200	mA
Reverse Voltage	V_R	5	V
Junction Temperature	T_j	125	°C
Solder Point Temperature***	T_s	105	°C
Operating Temperature	T_{opr}	-40 ~ +85	°C
Storage Temperature	T_{stg}	-30 ~ +85	°C
Soldering Temperature	T_{sol}	260 ± 5	°C
Reflow Cycles Allowed	--	2	--

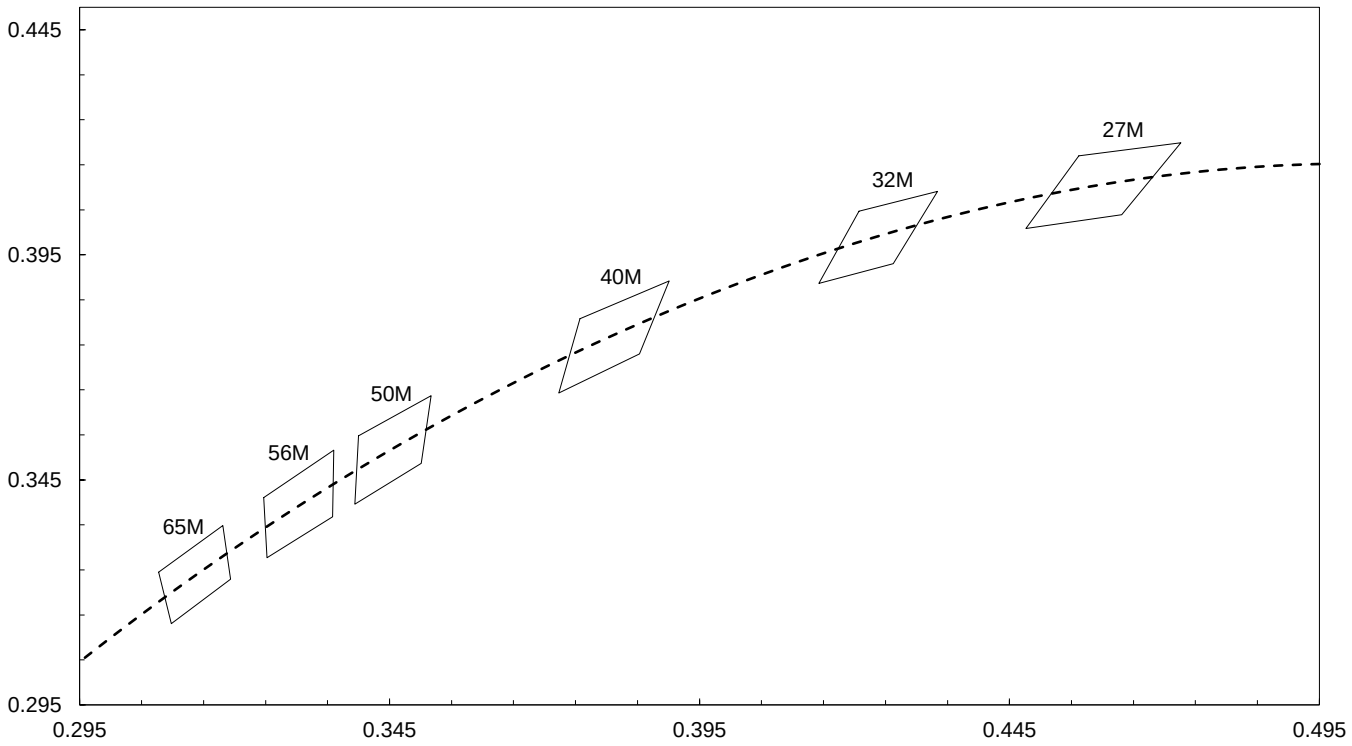
* Pulse width ≤ 0.1ms, Duty ≤ 1/10.
** Theoretical data.
*** See page 4 for solder point definition.

VOLTAGE BIN CODES				
Bin	**V28**	**V29**	**V30**	**V31**
V_F	2.8-2.9	2.9-3.0	3.0-3.1	3.1-3.2

CHROMATICITY BINS & COORDINATES									
CCT	BIN	CIE 1931 COORDINATES							
		X0	Y0	X1	Y1	X2	Y2	X3	Y3
6500K	65M	0.3078	0.3245	0.3098	0.3131	0.3194	0.3230	0.3181	0.3349
5600K	56M	0.3247	0.3411	0.3253	0.3277	0.3358	0.3368	0.3360	0.3516
5000K	50M	0.3400	0.3548	0.3394	0.3396	0.3501	0.3487	0.3517	0.3637
4000K	40M	0.3757	0.3808	0.3723	0.3643	0.3853	0.3730	0.3901	0.3892
3200K	32M	0.4207	0.4047	0.4143	0.3887	0.4263	0.3931	0.4334	0.4091
2700K	27M	0.4562	0.4170	0.4477	0.4009	0.4631	0.4039	0.4727	0.4199

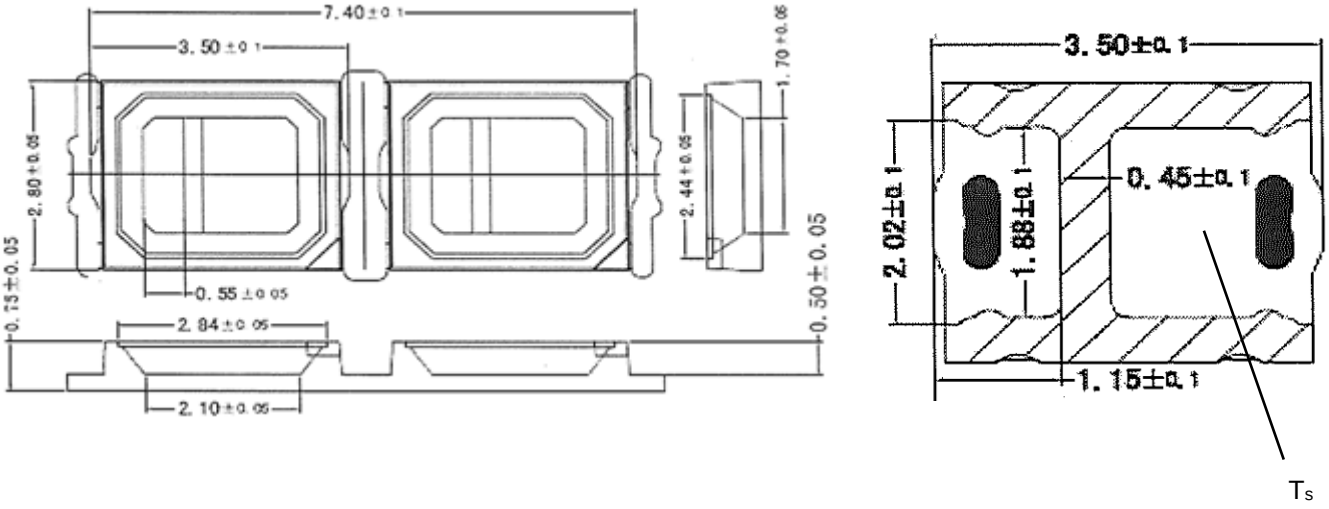
CHROMATICITY BINS & COORDINATES

CIE 1931 COORDINATES



PACKAGE LAYOUT

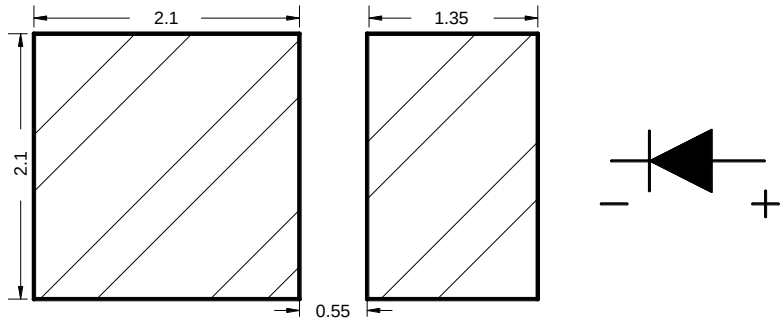
All dimensions in mm, tolerance unless mentioned is ±0.1mm.



PACKAGE MATERIALS	
ITEM	**DESCRIPTION**
DIE MATERIAL	InGaN
LEAD FRAME MATERIAL	PPA
ENCAPSULANT RESIN MATERIAL	SILICONE + PHOSPHOR
ELECTRODES MATERIAL	SILVER-PLATED COPPER

RECOMMENDED SOLDER PAD LAYOUT

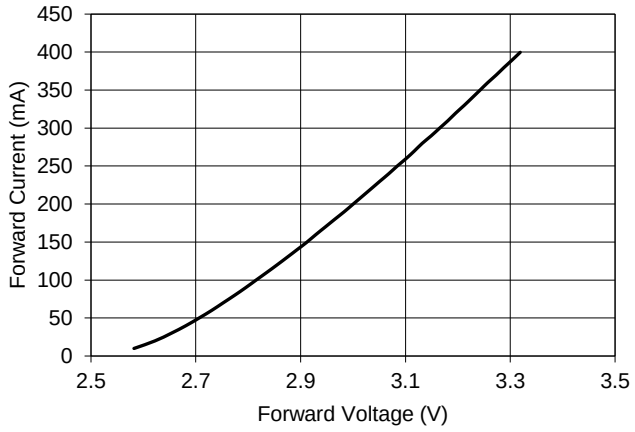
All dimensions in mm, tolerance unless mentioned is ±0.1mm.



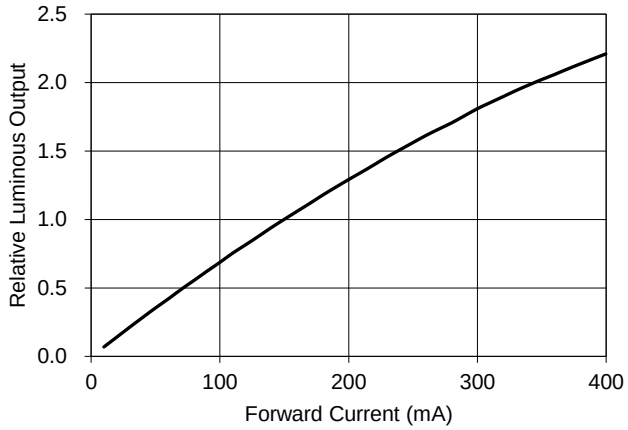
CHARACTERISTIC CURVES

ALL CHARACTERISTIC CURVES ARE FOR REFERENCE ONLY AND NOT GUARANTEED

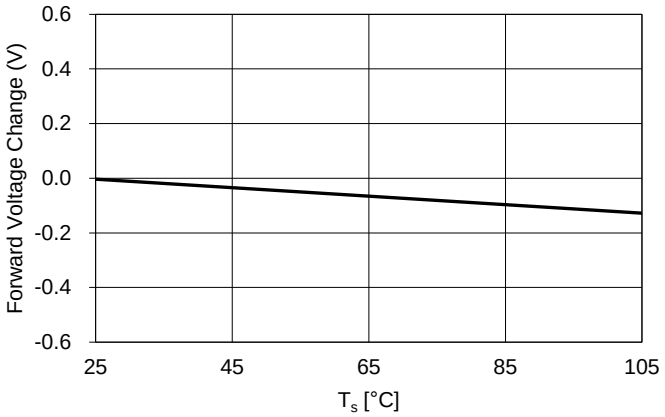
FORWARD CURRENT
VS FORWARD VOLTAGE (T_A = 25°C)



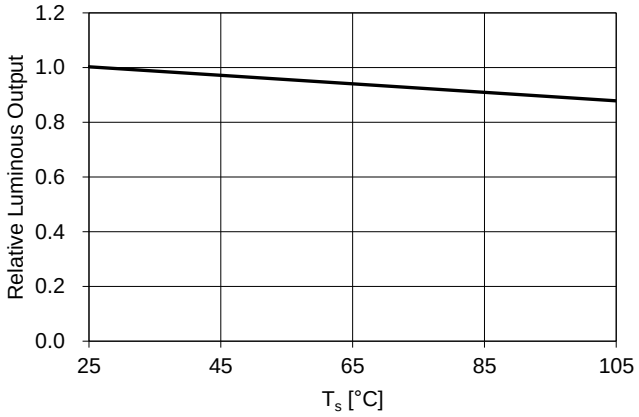
FORWARD CURRENT
VS RELIATIVE LUMINOUS OUTPUT (T_A = 25°)



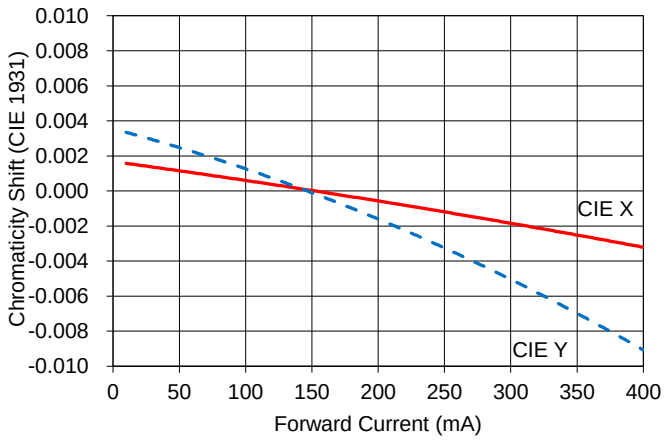
SOLDER POINT TEMPERATURE
VS FORWARD VOLTAGE (I_F = 150 mA)



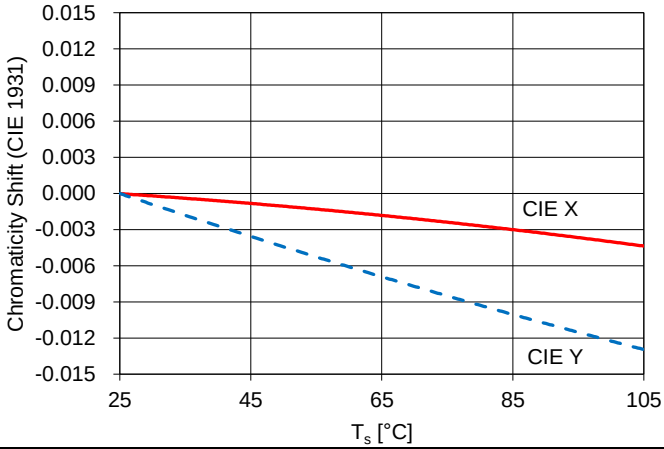
SOLDER POINT TEMPERATURE
VS RELATIVE LUMINOUS OUTPUT (I_F = 150 mA)



FORWARD CURRENT VS CHROMATICITY SHIFT
(5000K, T_A = 25°C)

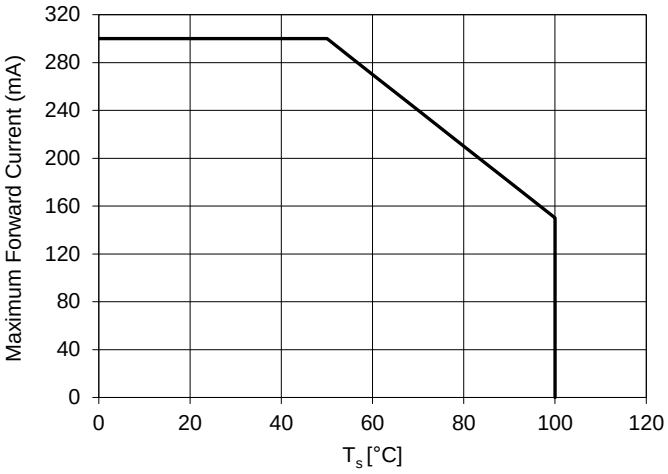


FORWARD CURRENT VS CHROMATICITY SHIFT
(5000K, T_A = 25°C)



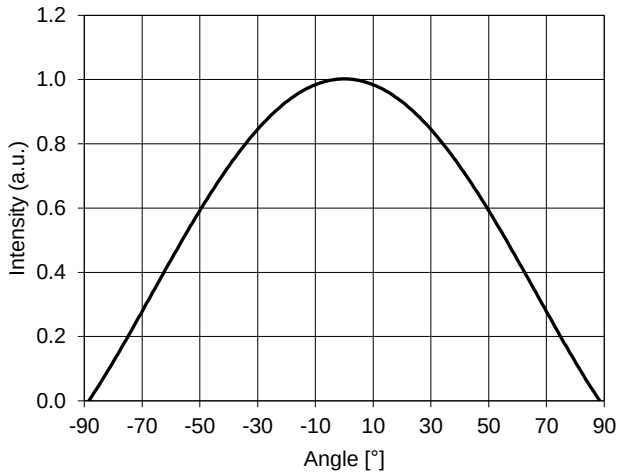
CHARACTERISTIC CURVES (CONTINUED)

FORWARD CURRENT DERATING BASED ON SOLDER POINT



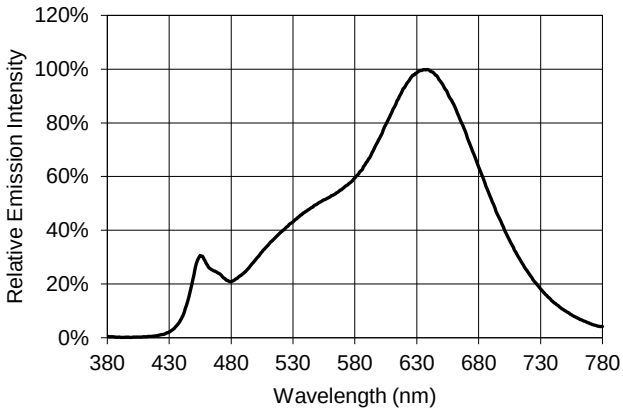
NOTE: DE-RATING CURVES ARE MEANT FOR RECOMMENDATION ONLY AND ARE NOT MEANT TO PROVIDE GUARANTEES OF PRODUCT STABILITY AND LONGEVITY

TYPICAL SPATIAL DISTRIBUTION
(T_A = 25°C, I_F = 150 mA)

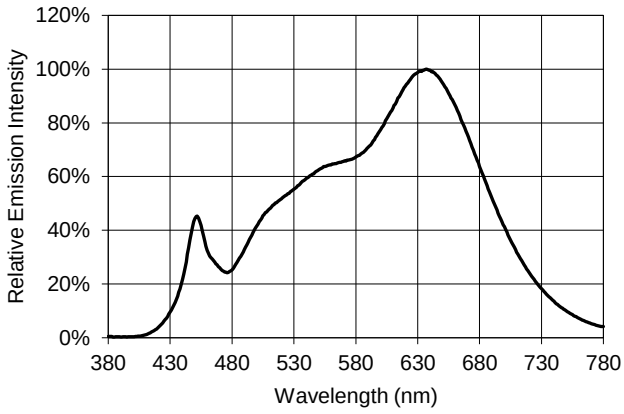


TYPICAL SPECTRAL DISTRIBUTION GRAPHS

2700K

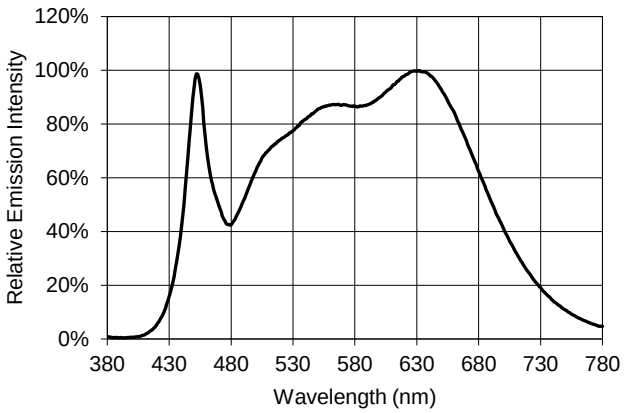


3200K

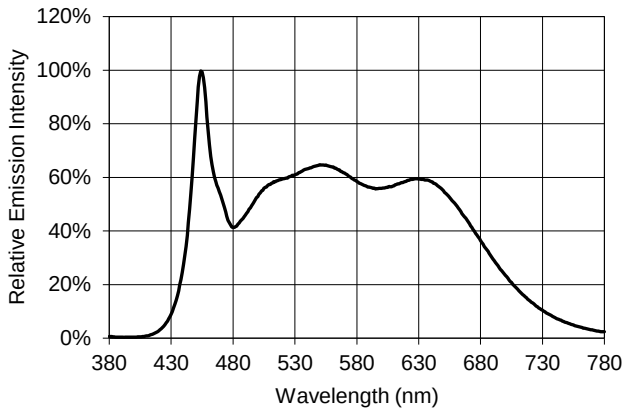


TYPICAL SPECTRAL DISTRIBUTION GRAPHS (CONTINUED)

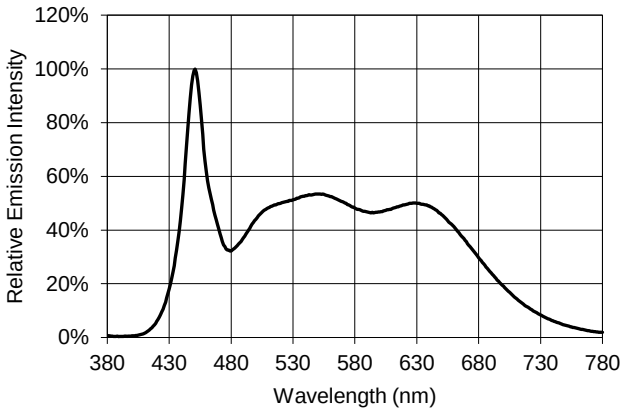
4000K



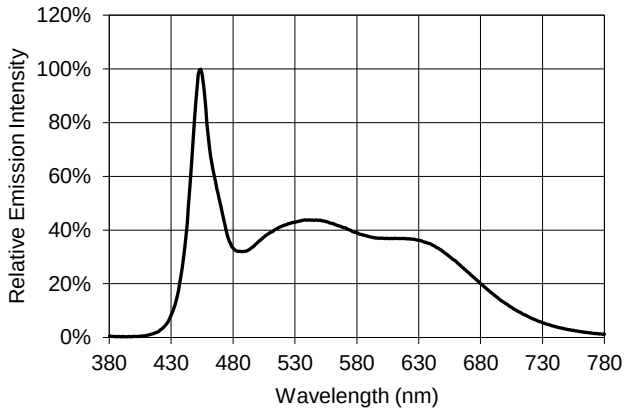
5000K



5600K

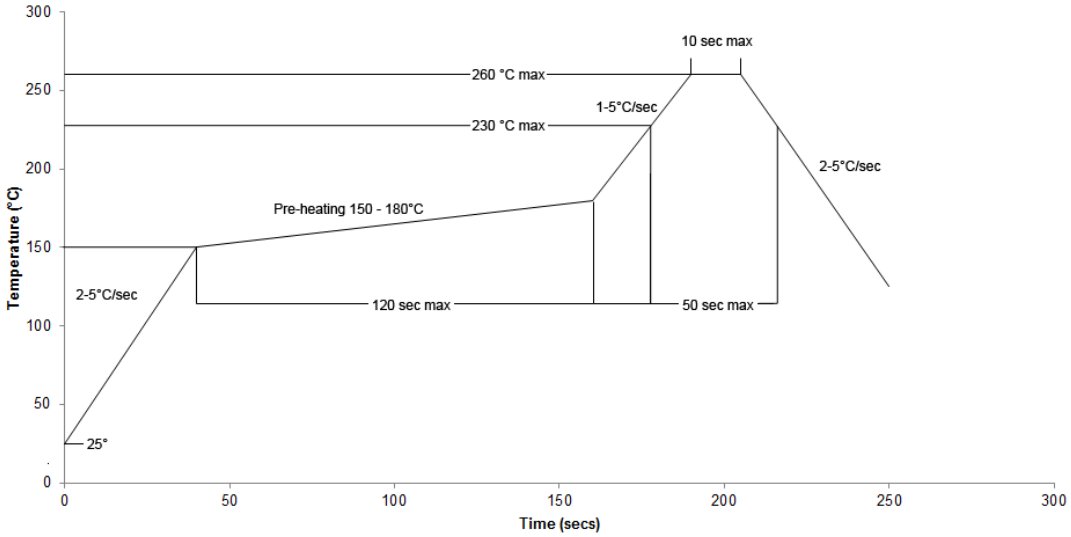


6500K



REFLOW PROFILE

SOLDERING RAMP-UP TIME (Pb-FREE)



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

INSTRUCTIONS FOR SMT

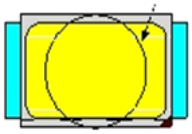
Problems caused by improper selection of collet

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.

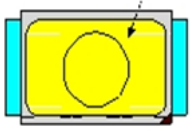
Collet selection

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.

OK



NOT OK – COLLET TOO SMALL



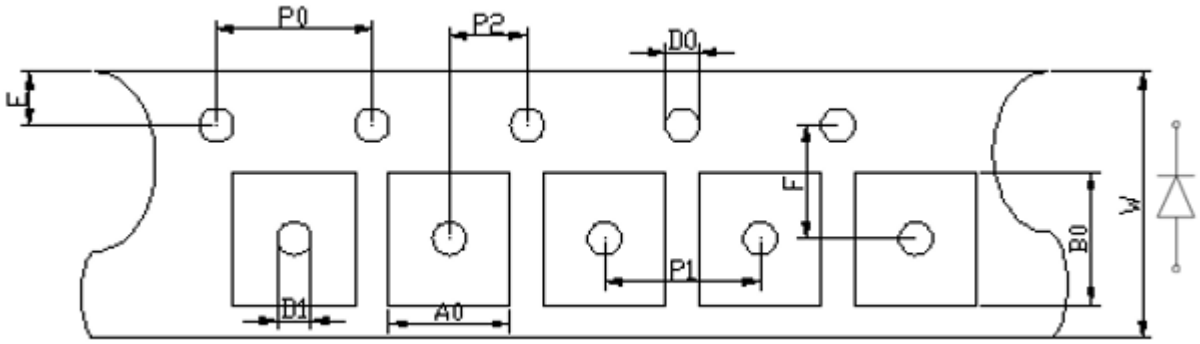
Setting the height of the collet is crucial in order to avoid damage to the top view SMD. If the collet setting is set to too low of an altitude, the collet will press down on the SMD, causing damage or breakage to the encapsulant and cause distortion or breakage of the gold wire.

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.

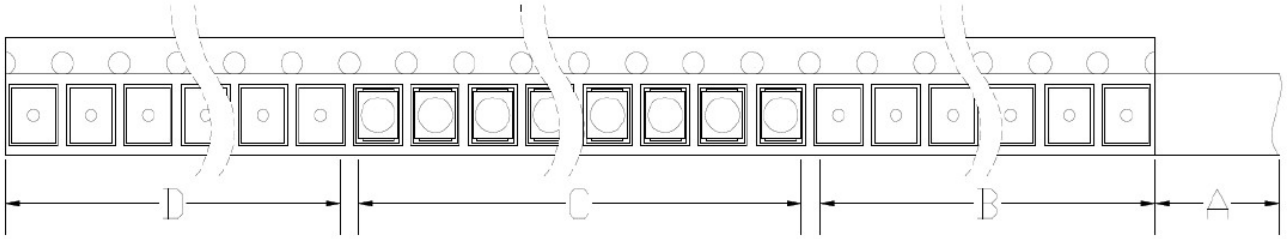
TAPE SPECIFICATIONS

TAPE DIMENSIONS (UNIT: MM)



Code	W	A0	B0	E	F	D0	D1	P0	P1	P2
Value	8.000	3.100	3.700	1.750	3.500	1.500	1.000	4.000	4.000	2.000
Tolerance	±0.100	±0.100	±0.100	±0.100	±0.050	±0.100	±0.100	±0.100	±0.100	±0.050

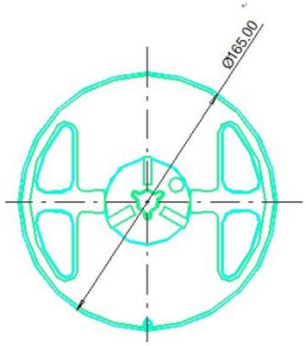
TAPE LAYOUT (NOT DRAWN TO SCALE)



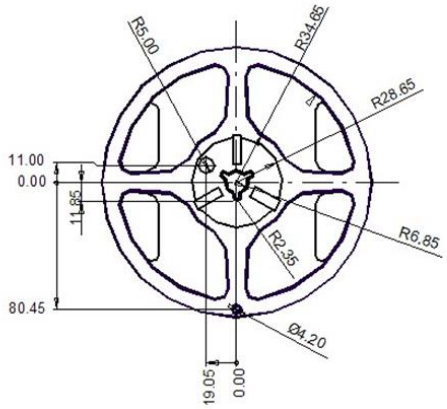
A: COVER TAPE, 300 MM;
B: EMPTY LEADER, 200 MM;
C: LED, 4000 PCS;
D: EMPTY TRAILER, 200 MM;

REEL SPECIFICATIONS

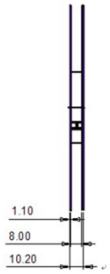
REEL DIMENSIONS TOP (UNIT: MM)



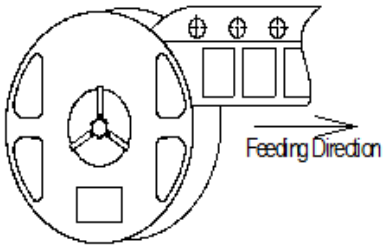
REEL DIMENSIONS BOTTOM (UNIT: MM)



REEL DIMENSIONS SIDE (UNIT: MM)



FEEDING DIRECTION



LOT NUMBERING SCHEME

Yuji LED uses two formats for lot numbering purposes:

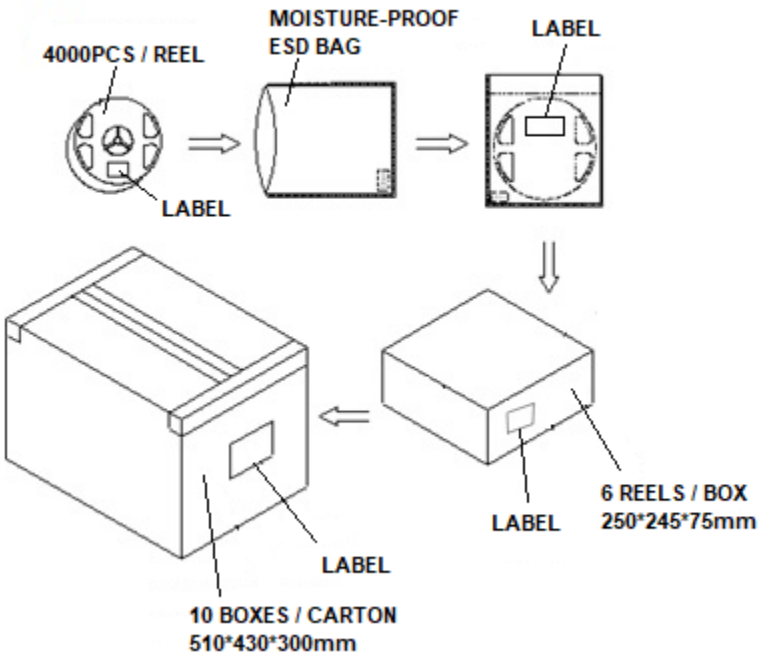
1) YYYY-MM-XXX-Z

YYYY: 4-digit manufacturing year
MM: 2-digit manufacturing month
XXX: 3-digit inventory number (000 – 999)
Z: internal alphanumeric code

2) YYYYMMXXX

YYYY: 4-digit manufacturing year
MM: 2-digit manufacturing month
XXX: 3-digit inventory number (000 – 999)

SHIPPING INFORMATION



NOTES:

1. Reeled products (max 4,000 pcs / reel) are packed in a moisture-proof bag along with a moisture desiccant pack.
2. Each inner box contains up to 6 moisture-proof bag (total maximum number of SMDs is 24,000pcs). Box package size: 250 mm x 245 mm x 75 mm.
3. Each outer package contains 10 inner boxes. Box size: 510 mm x 430 mm x 300 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.