YJ-BC-135L-G02

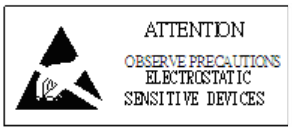
High CRI LED

PRODUCT:

13.5 MM CHIP ON BOARD LED 135L

FEATURES:
10W nominal 13.5 mm x 13.5 mm x 0.7 mm LED
120° emission angle
95 min Ra

DESCRIPTION
Yuji LED's high CRI COB provides excellent color rendering in a ceramic form factor that allows for high light output density. Providing 95 CRI (min), this point-source LED can be used in a variety of applications demanding high color quality and performance.



ELECTRICAL-OPTICAL CHARACTERISTICS (T_C = 25 °C)							
PARAMETER	SYMBOL	VALUE			UNIT	TOLERANCE	CONDITION
		MIN.	TYP.	MAX.			
Forward Voltage	V_f	14	--	17	V	±0.05	I_f=600mA
Luminous flux	Φ_{3200K}	750	--	850	lm	--	I_f=600mA
	Φ_{5600K}	900		1100			
Color temperature	CCT_{3200K}	3050	3200	3350	K		
	CCT_{5600K}	5300	5600	5900			
Color rendering index	Ra	95	--	--	--	±1	I_f=600mA
TCS R9 (CRI Red)	R9	--	70	--	--	--	I_f=600mA
Chromaticity coordinates	(X,Y)	--	--	--	--	±0.005	--
Reverse Current	I_r	--	--	10	μA	±0.1	V_r=25V
Viewing angle	2θ1/2	--	120	--	Deg	±5	I_f=600mA

ORDERING INFORMATION		
PART NUMBER	CCT	CHROMATICITY BINS
YJ-BC-135L-G02-32	3200K ± 150K	32L, 32R
YJ-BC-135L-G02-56	5600K ± 300K	56L, 56R
YJ-BC-135L-G02-XX	CUSTOM	

VOLTAGE BIN CODES	
Bin	**V14**
V_F	14-17

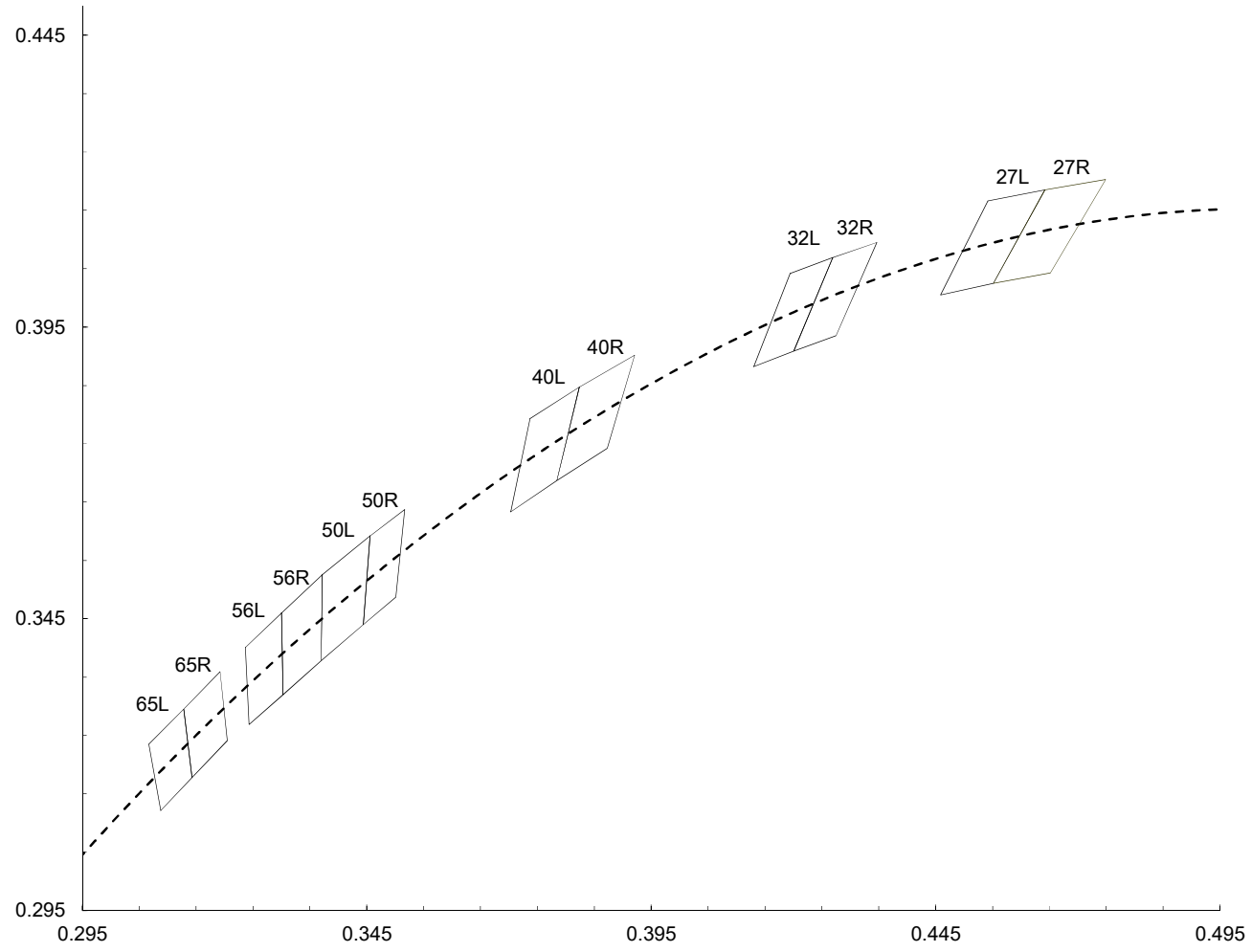
ABSOLUTE MAXIMUM RATING (T_C = 25 °C)			
PARAMETER	**SYMBOL**	**LIMIT**	**UNIT**
Power Consumption	P_D	13500	mW
DC Forward Current (pulsed)*	I_{Fp}	1800**	mA
DC Forward Current	I_F	900	mA
Reverse Voltage	V_R	25	V
Junction Temperature	T_j	125	°C
Case Temperature***	T_s	85	°C
Operating Temperature	T_{opr}	-45 ~ +85	°C
Storage Temperature	T_{stg}	-45 ~ +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.

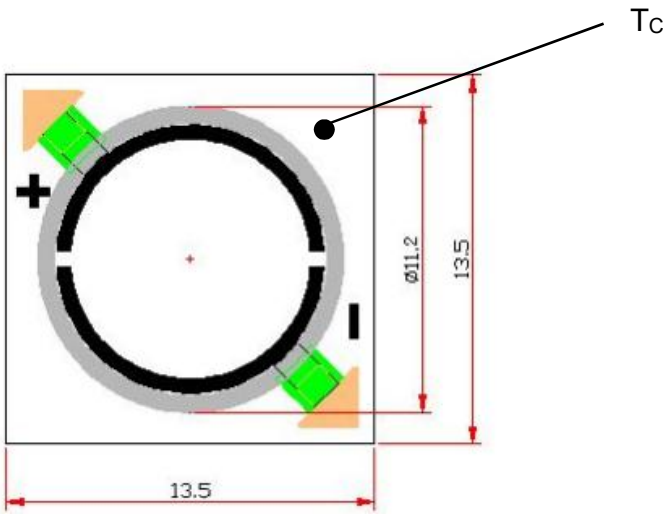
CHROMATICITY BINS & COORDINATES									
CCT	BIN	CIE 1931 COORDINATES							
		X0	Y0	X1	Y1	X2	Y2	X3	Y3
6500K	65L	0.3067	0.3235	0.3088	0.3121	0.3143	0.3178	0.3128	0.3295
	65R	0.3128	0.3295	0.3143	0.3178	0.3205	0.3241	0.3192	0.3359
5600K	56L	0.3237	0.3401	0.3243	0.3269	0.3303	0.332	0.33	0.346
	56R	0.33	0.346	0.3303	0.332	0.337	0.3378	0.3372	0.3526
5000K	50L	0.3372	0.3526	0.337	0.3378	0.3444	0.344	0.3456	0.3592
	50R	0.3456	0.3592	0.3444	0.344	0.3501	0.3487	0.3517	0.3637
4000K	40L	0.3737	0.3793	0.3703	0.3633	0.3784	0.3687	0.3824	0.3847
	40R	0.3824	0.3847	0.3784	0.3687	0.3873	0.3742	0.3921	0.3902
3200K	32L	0.4194	0.4042	0.413	0.3882	0.4201	0.3909	0.4269	0.4069
	32R	0.4269	0.4069	0.4201	0.3909	0.4275	0.3935	0.4347	0.4095
2700K	27L	0.4542	0.4166	0.4459	0.4005	0.4552	0.4025	0.4642	0.4185
	27R	0.4642	0.4185	0.4552	0.4025	0.4652	0.4043	0.4749	0.4203

CHROMATICITY BINS & COORDINATES

CIE 1931 COORDINATES



PACKAGE LAYOUT

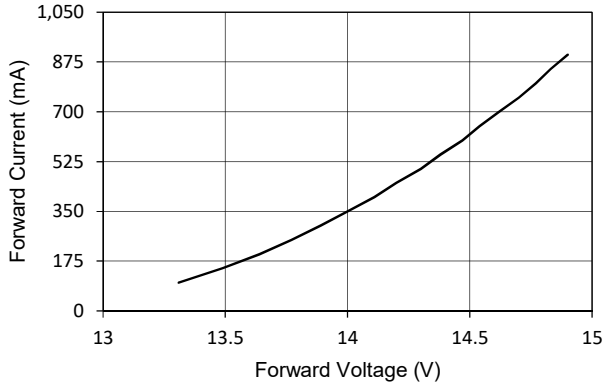


PACKAGE MATERIALS	
ITEM	**DESCRIPTION**
DIE MATERIAL	InGaN
LEAD FRAME MATERIAL	CERAMIC
ENCAPSULANT RESIN MATERIAL	SILICONE

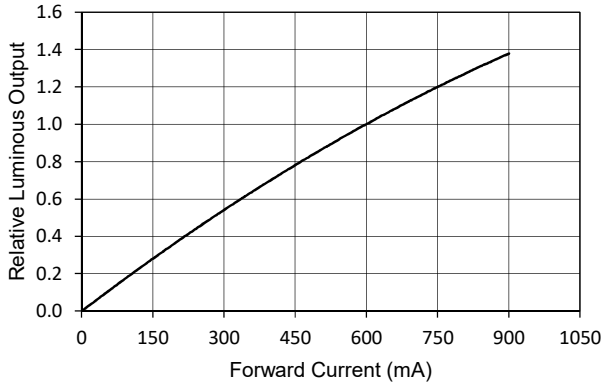
CHARACTERISTIC CURVES

ALL CHARACTERISTIC CURVES ARE FOR REFERENCE ONLY AND NOT GUARANTEED

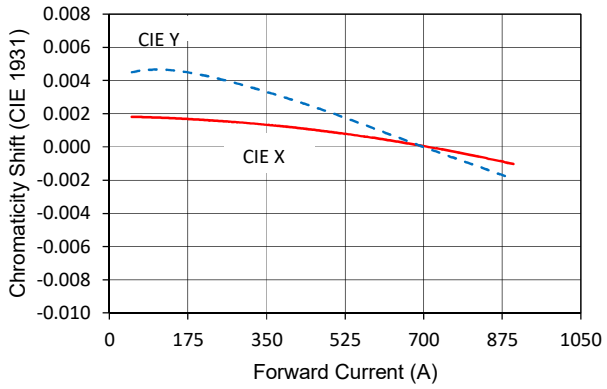
FORWARD CURRENT
VS FORWARD VOLTAGE (T_A=25°C)



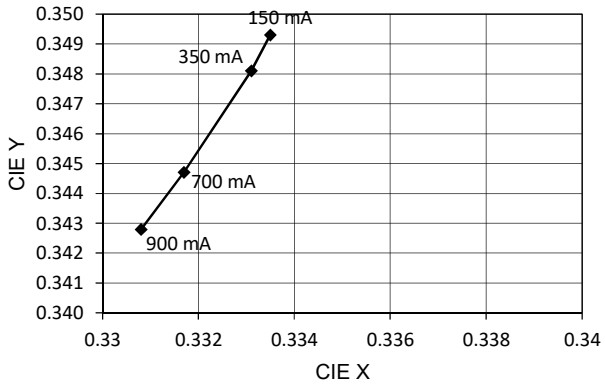
FORWARD CURRENT
VS RELATIVE LUMINOUS OUTPUT (T_A=25°C)



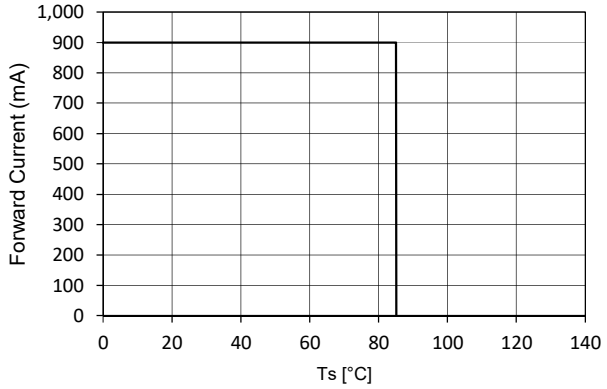
FORWARD CURRENT VS CHROMATICITY SHIFT
(5600K,T_A=25°C)



FORWARD CURRENT VS CHROMATICITY SHIFT
(5600K,T_A=25°C)

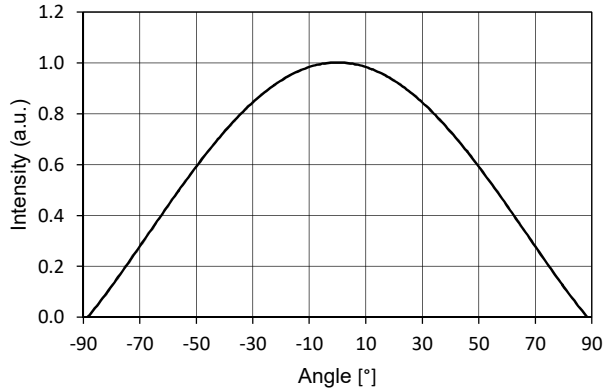


FORWARD CURRENT DERATING BASED ON SOLDER POINT



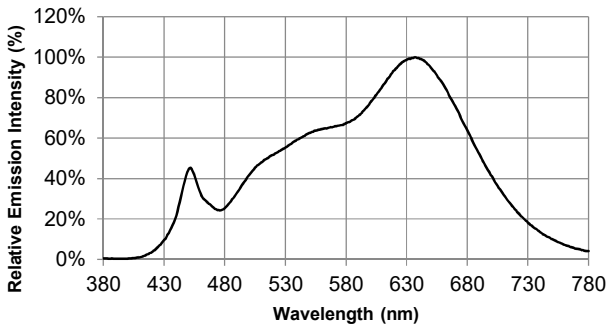
NOTE: DE-RATING CURVES ARE MEANT FOR RECOMMENDATION ONLY AND ARE NOT MEANT TO PROVIDE GUARANTEES OF PRODUCT STABILITY AND LONGEVITY

TYPICAL SPATIAL DISTRIBUTION
(TA=25°C, I_F = 700 mA)

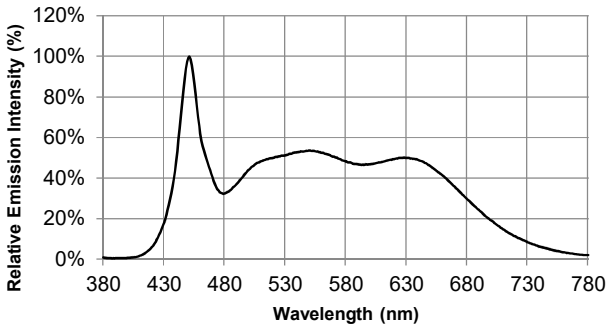


TYPICAL SPECTRAL DISTRIBUTION GRAPHS

3200K



5600K



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)