

PRODUCT:

13.5 MM CHIP ON BOARD LED

FEATURES:

5W nominal 13.5 mm x 13.5 mm x 1.0 mm LED
 120° emission angle
 95 min Ra



DESCRIPTION

YUJILEDS® VTC 135XL COB provides true full spectrum coverage and ultra-high CRI using violet die technology. Providing 98 CRI (typical), this high-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	16	--	24	V	±0.05	I _f = 240mA
Luminous flux	Φ _{3200K}	145	--	250	lm	--	I _f = 240mA
	Φ _{5600K}	250	--	425			
Correlated color temperature	CCT _{3200K}	3050	3200	3350	K	--	I _f = 240mA
	CCT _{5600K}	5300	5600	5900			
Color rendering index	Ra	95	--	--	--	±1	I _f = 240mA
TCS R9 (CRI Red)	R9	--	90	--	--	--	I _f = 240mA
Chromaticity coordinates	(X,Y)	--	--	--	--	±0.005	--
Reverse current	I _r	--	--	20	µA	±0.1	V _r = 30V
Viewing angle	2θ1/2	--	120	--	Deg	±5	I _f = 240mA

ORDERING INFORMATION		
PART NUMBER	CCT	CHROMATICITY BINS
YJ-VTC-135XL-G01-32	3200K ± 150K	VF4-2, VF7-2, VF5-1, VF8-1
YJ-VTC-135XL-G01-56	5600K ± 300K	VB8-2, VB10-2, VC3-1, VC5-1
YJ-VTC-135XL-G01-XX	CUSTOM	

ABSOLUTE MAXIMUM RATING (T _A = 25 °C)			
PARAMETER	SYMBOL	LIMIT	UNIT
Power Consumption	P _D	6000	mW
DC Forward Current (pulsed)*	I _{Fp}	300**	mA
DC Forward Current	I _F	250	mA
Reverse Voltage	V _R	30	V
Junction Temperature	T _j	125	°C
Case Temperature***	T _c	85	°C
Operating Temperature	T _{opr}	-20 ~ +75	°C
Storage Temperature	T _{stg}	-30 ~ +80	°C
Soldering Temperature	T _{sol}	260 ± 5	°C
Reflow Cycles Allowed	--	2	--

* Pulse width ≤ 0.1ms, Duty ≤ 1/10.

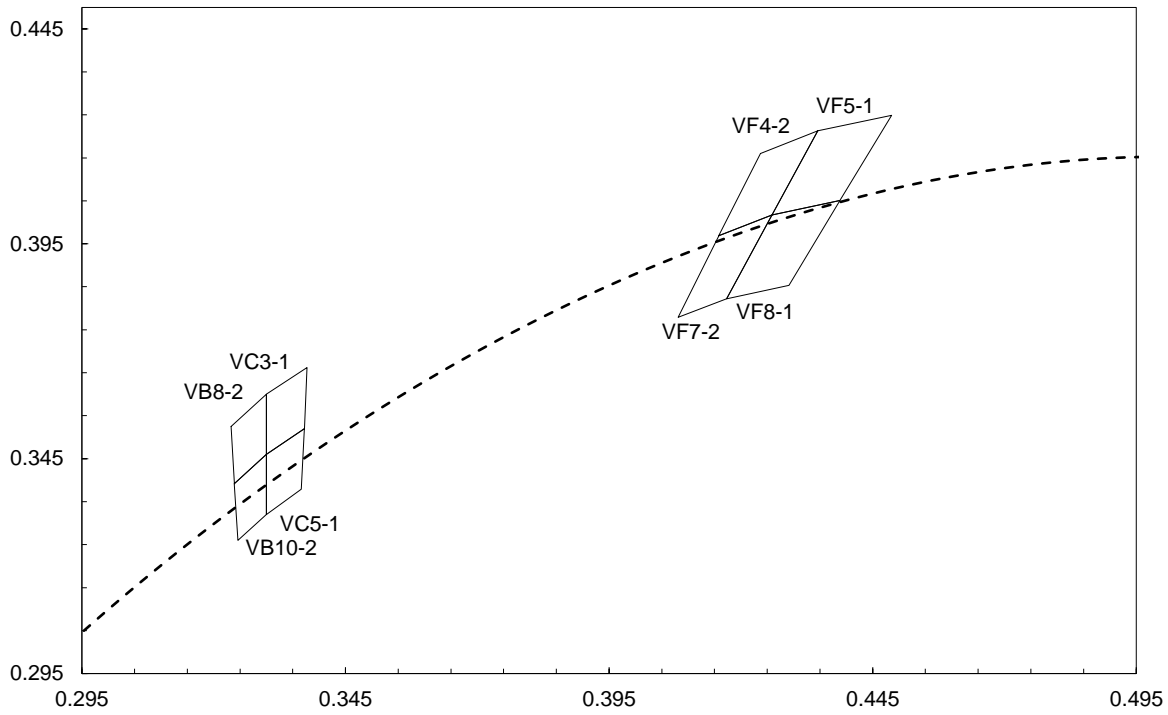
** Theoretical data.

*** See page 4 for case temperature point definition.

CHROMATICITY BINS & COORDINATES									
CCT	BIN	CIE 1931 COORDINATES							
		X0	Y0	X1	Y1	X2	Y2	X3	Y3
5600K	VB8-2	0.3233	0.3525	0.3239	0.3392	0.3300	0.3460	0.3300	0.3600
	VB10-2	0.3239	0.3392	0.3246	0.3260	0.3300	0.3320	0.3300	0.3460
	VC3-1	0.3300	0.3600	0.3300	0.3460	0.3372	0.3520	0.3377	0.3662
	VC5-1	0.3300	0.3460	0.3300	0.3320	0.3366	0.3379	0.3372	0.3520
3200K	VF4-2	0.4237	0.4160	0.4158	0.3969	0.4259	0.4017	0.4346	0.4213
	VF7-2	0.4158	0.3969	0.4081	0.3779	0.4173	0.3822	0.4259	0.4017
	VF5-1	0.4346	0.4213	0.4259	0.4017	0.4388	0.4051	0.4468	0.4249
	VF8-1	0.4259	0.4017	0.4173	0.3822	0.4291	0.3853	0.4388	0.4051

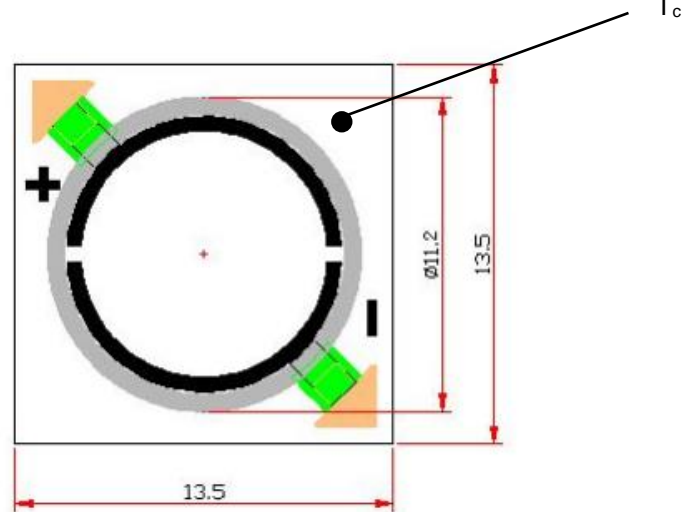
CHROMATICITY BINS & COORDINATES

CIE 1931 COORDINATES



PACKAGE LAYOUT

All dimensions in mm, tolerance unless mentioned is $\pm 0.1\text{mm}$.



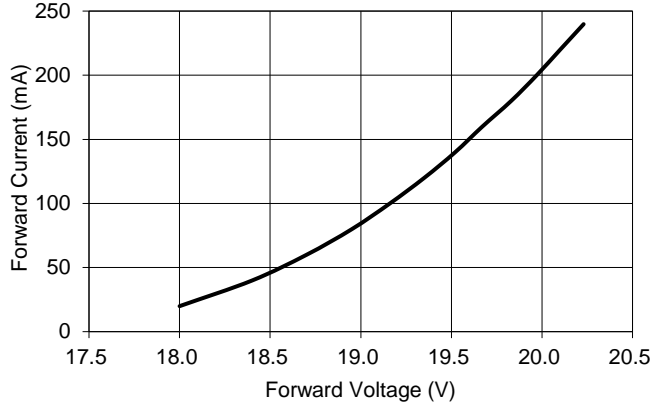
PACKAGE MATERIALS

ITEM	DESCRIPTION
DIE MATERIAL	InGaN
LEAD FRAME MATERIAL	CERAMIC
ENCAPSULANT RESIN MATERIAL	SILICONE + PHOSPHOR

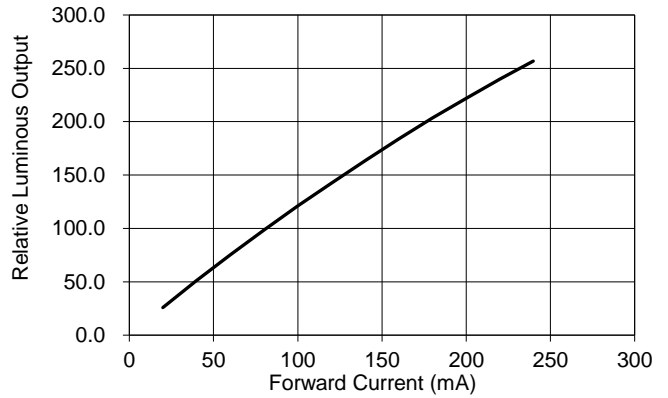
CHARACTERISTIC CURVES

ALL CHARACTERISTIC CURVES ARE FOR REFERENCE ONLY AND NOT GUARANTEED

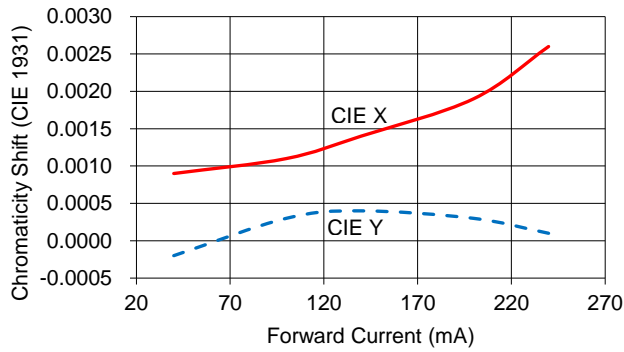
FORWARD CURRENT VS FORWARD VOLTAGE ($T_A = 25^\circ\text{C}$)



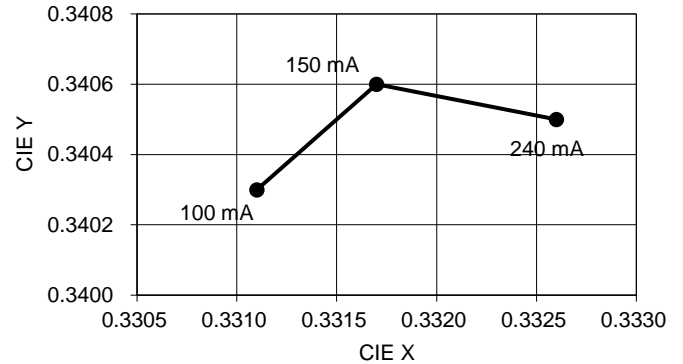
FORWARD CURRENT VS RELATIVE LUMINOUS OUTPUT ($T_A = 25^\circ\text{C}$)



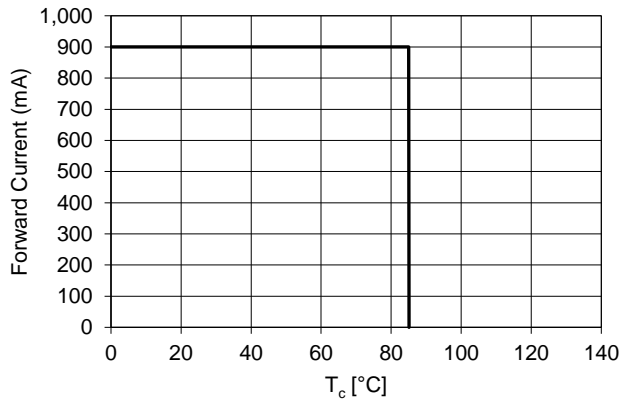
FORWARD CURRENT VS CHROMATICITY SHIFT (5600K, $T_A = 25^\circ\text{C}$)



FORWARD CURRENT VS CHROMATICITY (5600K, $T_A = 25^\circ\text{C}$)

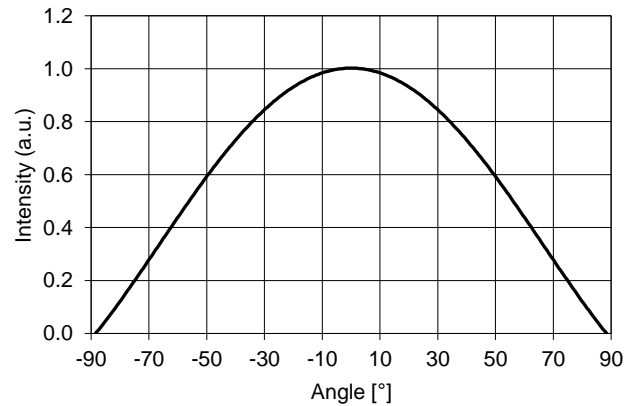


FORWARD CURRENT DERATING BASED ON CASE POINT

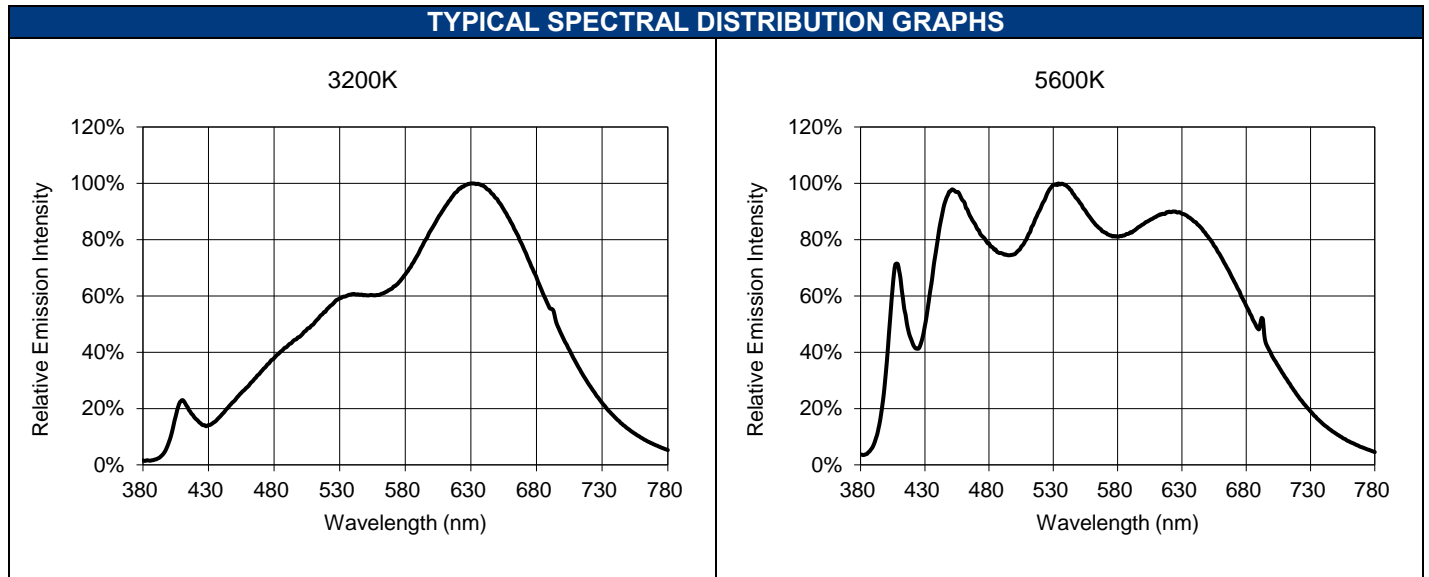


NOTE: DE-RATING CURVES ARE MEANT FOR RECOMMENDATION ONLY AND ARE NOT MEANT TO PROVIDE GUARANTEES OF PRODUCT STABILITY AND LONGEVITY

TYPICAL SPATIAL DISTRIBUTION ($T_A = 25^\circ\text{C}$, $I_F = 240\text{ mA}$)



TYPICAL SPECTRAL DISTRIBUTION GRAPHS



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)