TOYO LED ELECTRONICS LIMITED
Room 1610, Hong Kong Plaza, 188 Connaught Road West, Hong Kong.
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http://www.toyo-led.com email: sales@toyo-led.com

CODE WH1

Chip Material: InGaN with Cree's proprietary G·Sic® Blue LED Chip

CREE® CHIPS

Pb-free

ABSOLUTE MAXIMUM RATINGS (Ta = 25℃)

PARAMETER	SYMBOL	MAXIMUM RATING	UNIT
Power Dissipation	P_D	93	mW
Peak Forward Current (1/10 Duty Cycle, 0.1 Ms Pulse Width)	I_{PEAK}	100	mA
DC Forward Current	I_F	30	mA
Reverse Voltage	V_R	5	V
Operating Temperature Range	T_A	-40℃ to +100℃	
Storage Temperature Range	T_{STG}	-40℃ to +100℃	
Electrostatic Discharge Threshold*		1000V	
Electrostatic Discharge Classification*		Class 2	
Solder temperature 1/16 inch below seating plane for 3 seconds at 260℃			

***Product resistance to electrostatic discharge (ESD) according to the HBM is measured by simulating ESD using a rapid avalanche energy test (RAET). The RAET procedures are designed to approximate the minimum ESD ratings shown. The ESD classification of Class 2 is based on sample testing according to MIL-STD-883E.**

ELECTRICAL OPTICAL CHARACTER AND CURVES (Ta = 25℃)

PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT	LOCATION	TEST CONDITION
Forward Voltage	V_F	2.70	2.90	3.10	V	Per Chip	I_F =20mA
Relative Flux	RF	10.0	11.0	12.0	mW	Per Chip	I_F =20mA
CIE Coordinates	x	--	0.31	--	--	Per Chip	I_F =20mA
	y	--	0.32	--	--	Per Chip	I_F =20mA
Reverse Current	I_R	-	-	2	uA	Per Chip	VR = 5V

Note:

1. **Luminous intensity tolerance is ±10%;**
2. **Dominant Emission Wavelength tolerance is ±5%.**

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■ Typical Electro-Optical Characteristic Curve:

FIG. 1 Forward Current Vs. Forward Voltage

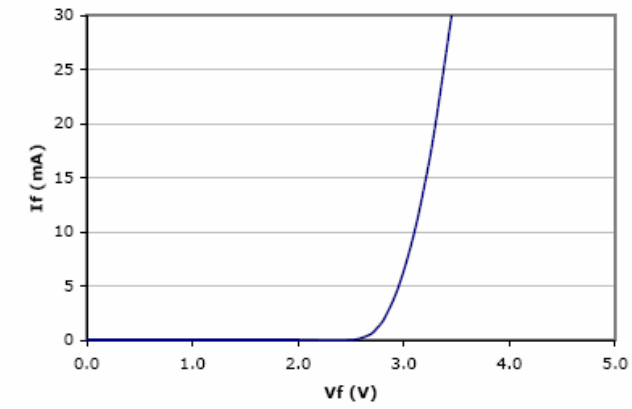

FIG. 2 Relative Intensity Vs. Forward Current

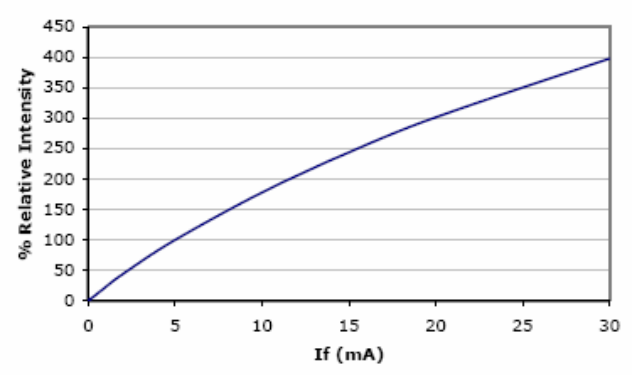

FIG. 3 Wavelength Shift Vs. Forward Current

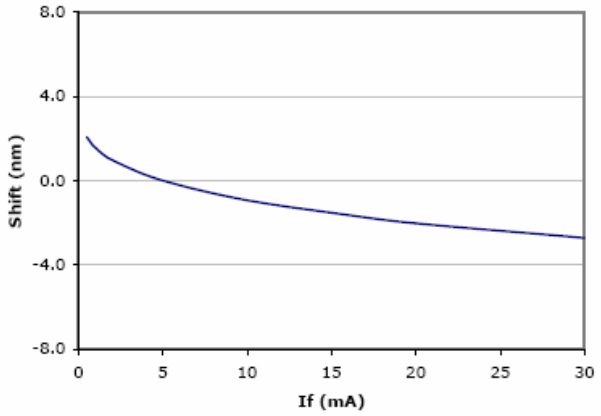

FIG. 4 Relative Intensity Vs. Wavelength

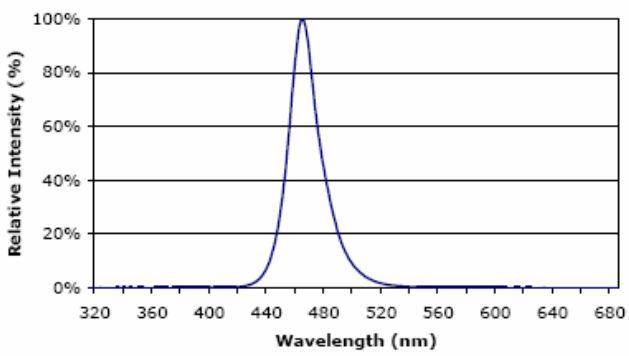

FIG. 5 This is a representative radiation pattern for the Ultra Thin Chip LED Product. Actual patterns will vary slightly for each chip.