EPISTAR corporation
晶元光電股份有限公司

InGaN Venus Blue LED Chip

ES-CABLV45C

❑ Features:

- High radiant flux
- Long operation life
- Lambertian radiation

❑ Applications:

- Street lighting
- Architectural lighting
- Residential lighting

❑ Mechanical Specification:

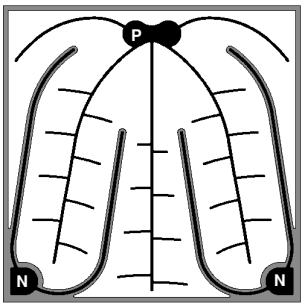
(1) Dimension

Chip size : 45 mil x 45 mil (1143±25μm x 1143±25μm)

Thickness :5.9 mil (150 ± 10 μm)

P bonding pad x 2 : 4.4 mil (112 ± 10 μm)

N bonding pad x 2 : 4.1 mil (105 ± 10 μm)

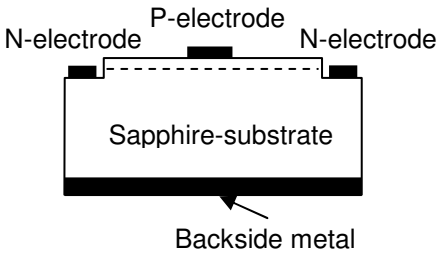


(2) Metallization

Topside P electrode : Au alloy

Topside N electrode : Au alloy

Backside metal : Au alloy



❑ Electro-optical Characteristics at 25 °C: (1)

Parameter	Symbol		Condition	Min.	Typ.	Max.	Unit
Forward voltage	V_{f1}		I_f =10uA	1.6			V
	V_{f2}		I_f =350mA		3.4	3.6	V
Reverse current	I_r		V_r=5V			2.0	μA
Dominant wavelength(2)	λ_d		I_f =350mA	455		465	nm
Spectral half-width	$_{\Delta}\lambda$		I_f =350mA		25		nm
Radiant flux (3)(4)	Po	H15	I_f =350mA	255		295	mW
		H16		295		340	

Note:

(1) ESD protection during chip handling is recommended.

(2) Basically, the wavelength span is 10nm; however, customers' special requirements are also welcome.

(3) Radiant flux is determined by using a Au-plated TO-can header without an encapsulant.

(4) Radiant flux measurement allows a tolerance of ±15%.

❑ Absolute Maximum Ratings:

Parameter	Symbol	Condition	Rating	Unit
Forward DC current	I_f	Ta=25ºC	≤ 700	mA
Reverse voltage	V_r	Ta=25ºC	≤ 5	V
Junction temperature	T_j	---	≤ 115	°C
Storage temperature	T_{stg}	chip	-40 ~ +85	°C
		chip-on-tape/storage	0 ~ 40	°C
		chip-on-tape/transportation	-20 ~ +65	°C
Temperature during packaging	---	---	280(<10sec)	°C

Note:
Maximum ratings are package dependent. The above maximum ratings were determined using a Metal Core Printed Circuit Board (MCPCB) without an encapsulant. Stresses in excess of the absolute maximum ratings such as forward current and junction temperature may cause damage to the LED.

❑ Characteristic Curves:

Fig.1-Relative Luminous Intensity vs. Forward Current

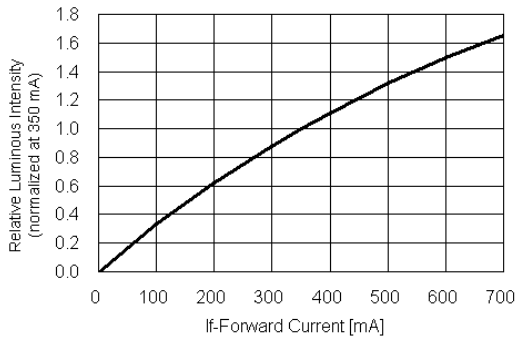


Fig.2- Forward Current vs. Forward Voltage

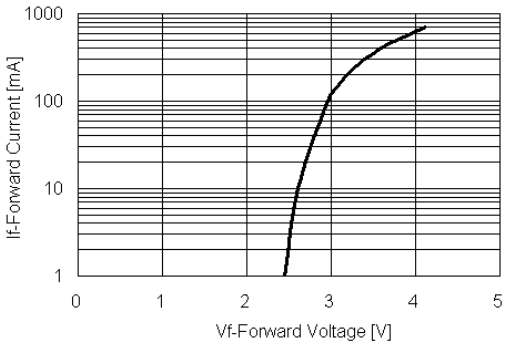


Fig.3-Relative Intensity (@350mA) vs. Ambient Temperature

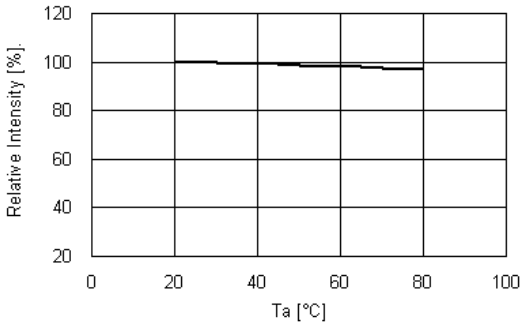


Fig.4-Forward Voltage (@350mA) vs. Ambient Temperature

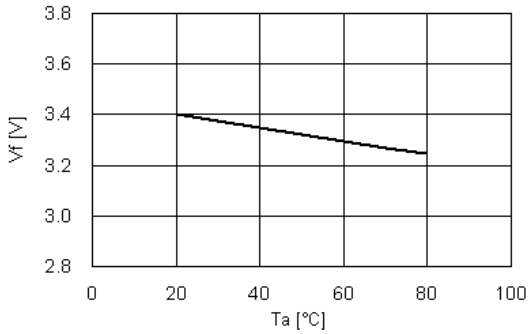


Fig.5-Dominant Wavelength(@350mA) vs. Ambient Temperature

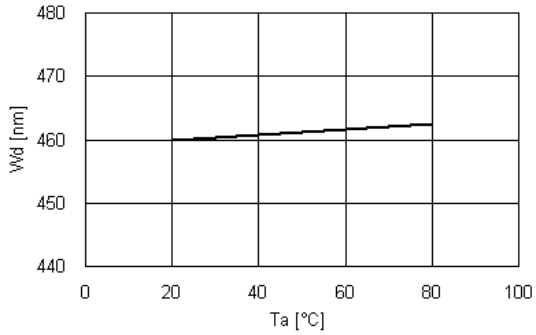


Fig.6 Maximum Driving Forward DC Current vs. Ambient Temperature (Derating based on Tj max. = 115ºC)