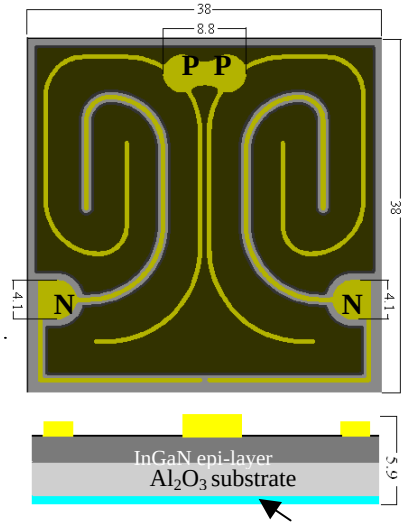
InGaN Venus Blue LED Chip

Type:
ES-CABLV38

Features:

(1) High luminous intensity
(2) Long operation life
(3) 100% probing test
(4) Passivation layer on top
(5) Backside mirror layer

Unit: mil



Characteristics:

(1) Size
Chip size : 38 mil x 38 mil (965±25μm x 965±25μm)
Chip thickness : 5.9 mil (150±10 μm)
P bonding pad x 2 : 3.9 mil (100±10 μm)
N bonding pad x 2 : 4.1 mil (105±10 μm)
(2) Metallization
P electrode : Au alloy
N electrode : Au alloy
Backside metal : Au alloy
(3) Structure
Refer to drawing

Electro-optical characteristics: (1)

Parameter	Symbol		Condition	Min.	Typ.	Max.	Unit
Forward voltage	V_{f1}		I_f = 10uA	1.6	---	---	V
	V_{f2}		I_f = 350mA	---	3.5	3.8	V
Reverse current	I_r		V_r = 5V	---	---	2	uA
Dominant wavelength(2)	λ_d		I_f = 350mA	455	460	465	nm
Radiant power (3)(4)	Po	H13	I_f = 350mA	185	---	220	mW
		H14		220	---	255	

(1) ESD protection during chip handling is recommended.
(2) Basically, wavelength uniformity is λ_d±5nm; however, customers' special requirements are also welcome.
(3) Customer's special requirements are also welcome.
(4) Radiant power is determined by a correlation with luminous intensity using a Au-plated TO-18 header without an encapsulant, whereas luminous intensity is measured by EPISTAR's equipment on bare chips.
(5) Epistar maintains a tolerance of ±15% on the above radiant flux specifications.

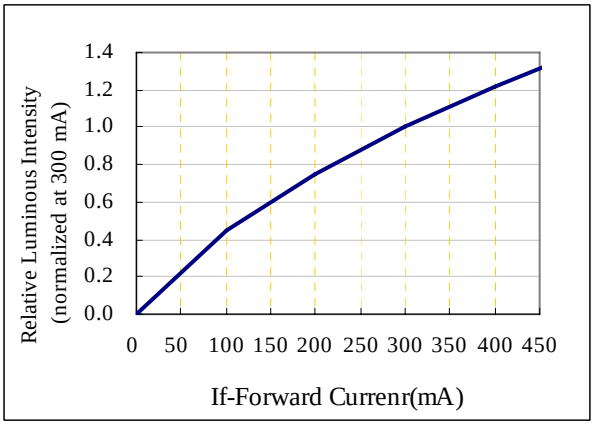


Fig-1 Relative Luminous Intensity vs. Forward current

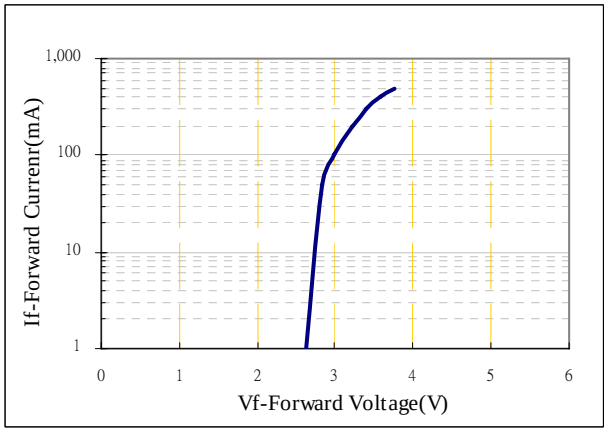


Fig-2 Forward Current vs. Forward Voltage

Absolute maximum ratings:

Parameter	Symbol	Condition	Rating	Unit
Forward DC current	I_f	Ta=25ºC	≤ 450	mA
Reverse voltage	V_r	Ta=25ºC	≤ 5	V
Junction temperature	T_j	---	≤ 115	^oC
Storage temperature	T_{stg}	chip	-40 ~ +85	^oC
		chip-on-tape/storage	0 ~ 40	^oC
		chip-on-tape/transportation	-20 ~ +65	^oC
Temperature during packaging	---	---	280(<10sec)	^oC

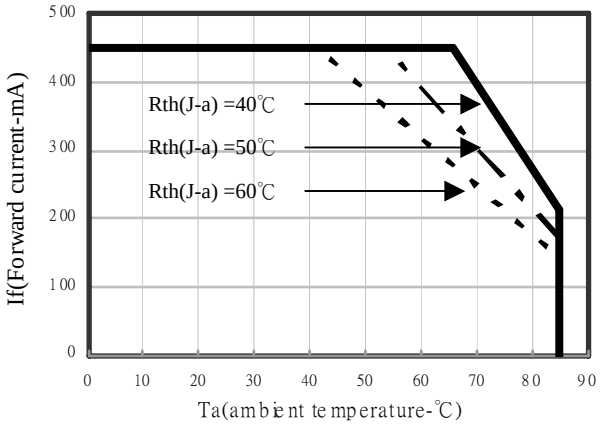


Fig-3 Maximum Driving Forward DC Current vs. mbient Temperature (Derating based on Tj max. = 115ºC)

Applications:

- Backlighting for display and projector
- Signage and channel letters
- Decorating and entertainment lighting
- Architectural and specialty lighting
- Indoor/outdoor application
- Portable light source