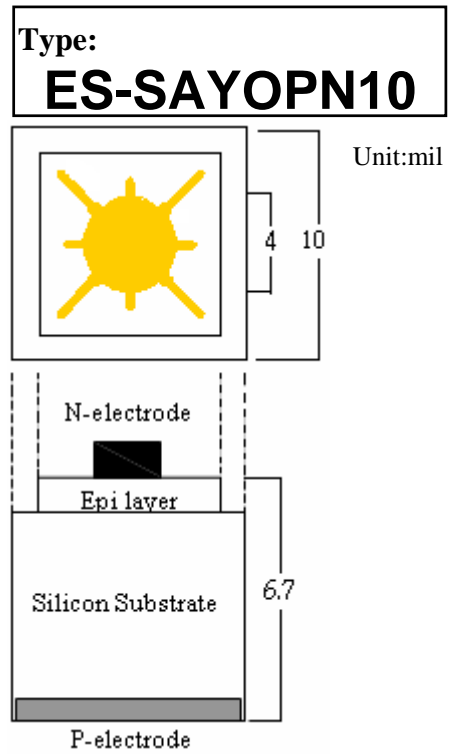


PN-series AlGaInP LED chip



Features:

- (1) High luminous intensity
- (2) Long operation life
- (3) 100% probing test

Characteristics:

- (1) Size
 Chip size: 10 mil x 10 mil ($254 \pm 25 \mu\text{m} \times 254 \pm 25 \mu\text{m}$)
 Chip thickness: 6.7 mil ($170 \pm 25 \mu\text{m}$)
 N bonding pad: 4.0 mil ($100 \pm 10 \mu\text{m}$)
- (2) Bonding pad : Au alloy
- (3) Structure
 Refer to drawing

Electro-optical characteristics:

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Forward voltage	V_{f1}	$I_f = 10\text{uA}$	1.3	---	---	V
	V_{f2}	$I_f = 20\text{mA}$	---	2.1	2.5	V
Reverse current	I_r	$V_r = 10\text{V}$	---	---	5	μA
Peak wavelength	λ_p	$I_f = 20\text{mA}$	---	611	---	nm
Dominant wavelength ⁽¹⁾	λ_d	$I_f = 20\text{mA}$	600	605	610	nm
Spectra half-width	$\Delta\lambda$	$I_f = 20\text{mA}$	---	18	---	nm
Luminous intensity ⁽²⁾⁽³⁾	I_v	E13	350	---	---	mcd
		E14	400	---	---	
		E15	450	---	---	

- (1) Basically, wavelength uniformity is $\lambda_d \pm 5\text{nm}$; however, customers' special requirements are also welcome.
- (2) Customer's special requirements are also welcome.
- (3) Luminous intensity is measured by **EPISTAR**'s equipment on bare chips.

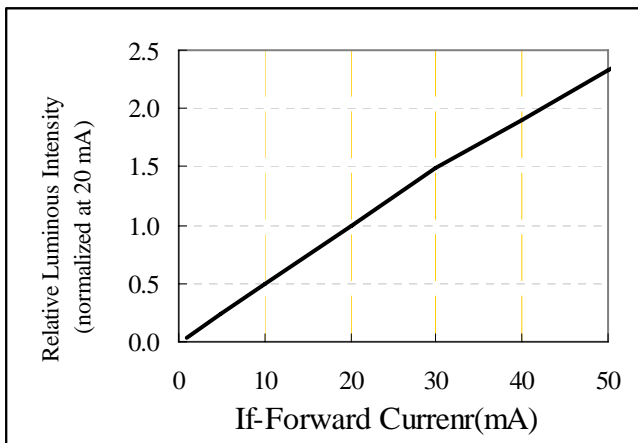


Fig-1 Relative Luminous Intensity vs. Forward Current.

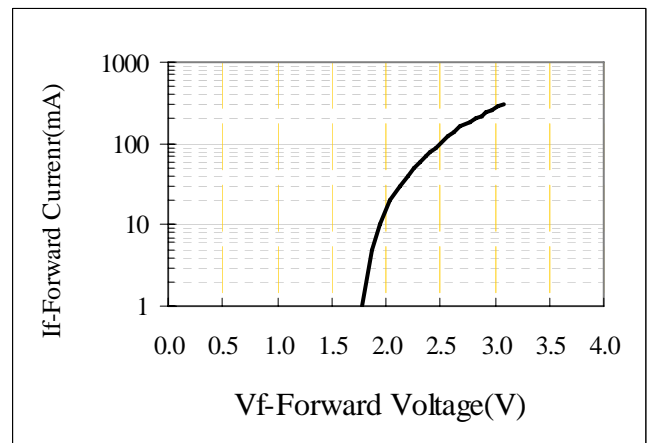


Fig-2 Forward Current vs. Forward Voltage.

Note : Above L-I and I-V are measured under TO-18 form and pulse current.

Absolute maximum ratings:

Parameter	Symbol	Condition	Rating	Unit
Forward DC current	I_f	$T_a=25^\circ\text{C}$	≤ 50	mA
Reverse voltage	V_r	$T_a=25^\circ\text{C}$	≤ 10	V
Junction temperature	T_j		≤ 115	$^\circ\text{C}$
Storage temperature	T_{stg}	chip	-40 ~ +85	$^\circ\text{C}$
		chip-on-tape/storage	0 ~ 40	$^\circ\text{C}$
		chip-on-tape/transportation	-20 ~ +65	$^\circ\text{C}$
Temperature during packaging			280(<10 sec)	$^\circ\text{C}$

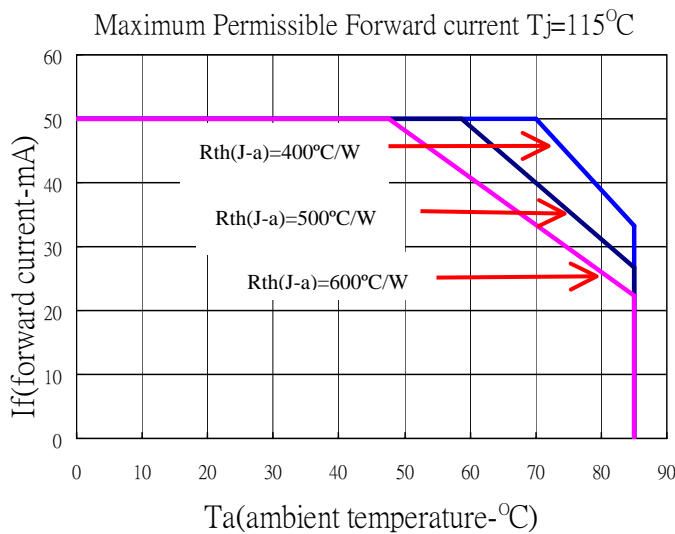


Fig-3 Maximum Driving Forward DC Current vs. Ambient Temperature. Derating Based on $T_j(\text{max}) = 115^\circ\text{C}$

Applications:

- Traffic signal
- Backlighting
- Signage and channel letter
- Portable light source
- Decorating and entertainment lighting
- Architectural lighting
- Outdoor/Indoor applications