EPISTAR

ES-CAHR512

AlGaInP ITO-top LED Chip

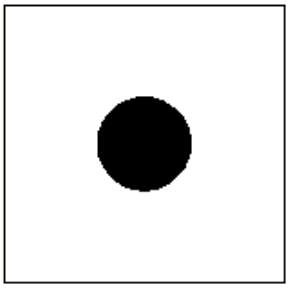
> Mechanical Specification:

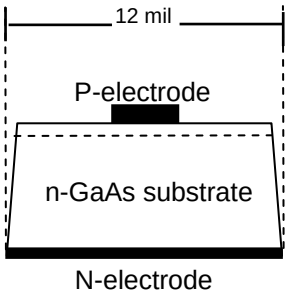
(1) Dimension
- Chip size: 12 mil x 12 mil (305±25 µm x 305±25 µm)
- Thickness: 6.7 mil (170±25 µm)
- P bonding pad: 4.6 mil (117±10 µm)

(2) Metallization
- Topside P electrode: Au alloy
- Backside N electrode: Au alloy

Features:
· High luminous intensity
· ITO layer on top

Applications:
· Outdoor display
· Traffic signal





> Electro-optical Characteristics at 25°C:

Parameter	Symbol		Condition	Min.	Typ.	Max.	Unit
Forward Voltage	Vf1		If = 10µA	1.3	-	-	V
	Vf2		If = 20mA	-	2.0	2.4	V
Reverse Current	Ir		Vr = 10V	-	-	10	µA
Peak Wavelength	λp		If = 20mA	-	632	-	nm
Dominant Wavelength[(1)]	λd		If = 20mA	619	624	629	nm
Spectra Half-width	Δλ		If = 20mA	-	20	-	nm
Luminous Intensity[(2)(3)]	Iv	E6	If = 20mA	90	-	-	mcd
		E7		110	-	-	
		E8		140	-	-	
		E9		170	-	-	

Note:
(1) Basically, the wavelength span is 10nm; however, customers' special requirements are also welcome.
(2) Customers' special requirements are also welcome.
(3) Luminous intensity is measured by EPISTAR's equipment on bare chips.

This product is made and sold under one or more of the following patents: Taiwan Patent Certificate Nos.: 098998; 113696; 128153; 131010; 144415; 148677; 170789; 183481; 183846; U.S. Patent Nos.: 5,008,718; 5,164,798; 5,233,204; 5,789,768; 6,078,064; 6,057,562; 6,225,648; 6,552,367; 6,876,005, and any foreign counterparts.

> Absolute Maximum Ratings:

Parameter	Symbol	Condition	Rating	Unit
Forward DC Current	If	Ta = 25˚C	≤ 50	mA
Reverse Voltage	Vr	Ta = 25˚C	≤ 10	V
Junction Temperature	Tj	-	≤ 115	˚C
Storage Temperature	Tstg	Chip	-40 ~ +85	˚C
		Chip-on-tape/storage	5 ~ 35	˚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 Printed Circuit Board (PCB) 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

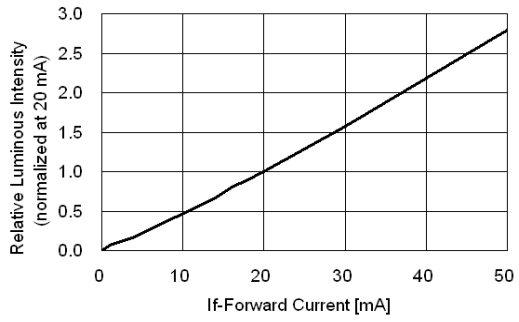


Fig.2 – Forward Current vs. Forward Voltage

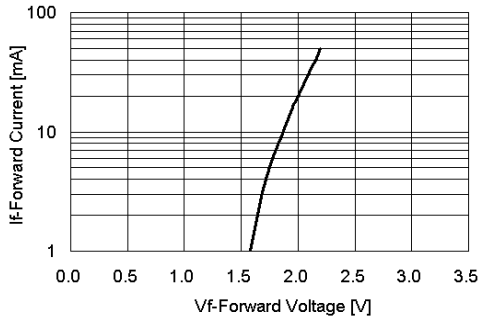


Fig.3 – Relative Intensity (@20mA) vs. Ambient Temperature

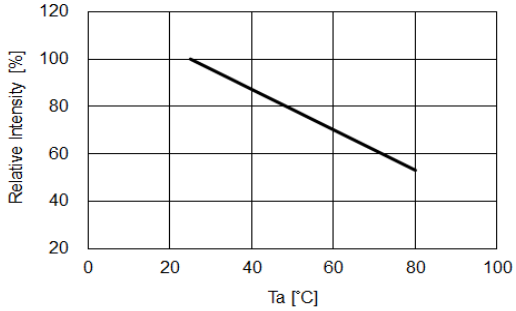


Fig.4 – Forward Voltage (@20mA) vs. Ambient Temperature

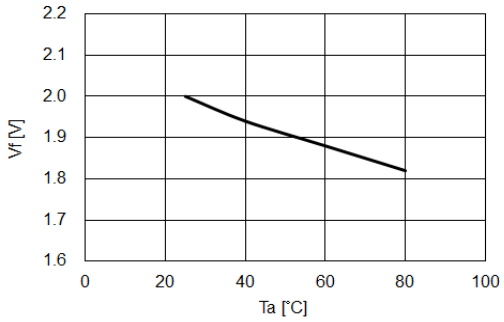


Fig.5 – Dominant Wavelength (20mA) vs. Ambient Temperature

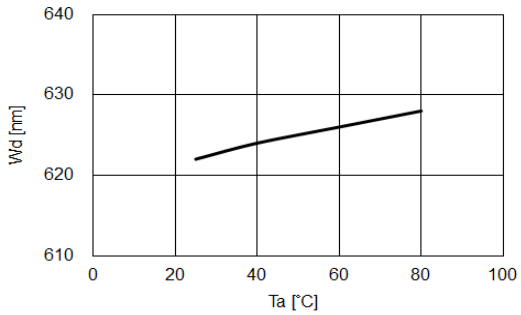


Fig.6 – Maximum Driving Forward DC Current vs. Ambient Temperature (Derating based on Tj max. = 115°C)