EPISTAR

ES-CASR508
AlGaInP ITO-top LED Chip

> Mechanical Specification:

(1) Dimension
- Chip size: 8 mil x 8 mil (203±25 μm x 203±25 μm)
- Thickness: 6.7 mil (170±25 μm)
- P bonding pad: 3.9 mil (100±10 μm)

(2) Metallization
- Topside P electrode: Au alloy
- Backside N electrode: Au alloy
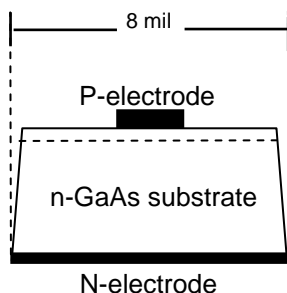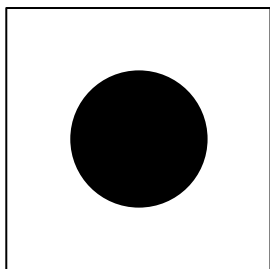
Features:
· High luminous intensity
· ITO layer on top

Applications:
· Mobile appliances
· Indoor application
· Consumer electronic

> Electro-optical Characteristics at 25°C:

Parameter	Symbol		Condition	Min.	Typ.	Max.	Unit
Forward Voltage	Vf1		If = 10μA	1.3	-	-	V
	Vf2		If = 20mA	-	2.05	2.4	V
Reverse Current	Ir		Vr = 10V	-	-	10	μA
Peak Wavelength	λp		If = 20mA	-	639	-	nm
Dominant Wavelength[1]	λd		If = 20mA	626	631	636	nm
Spectra Half-width	Δλ		If = 20mA	-	20	-	nm
Luminous Intensity[2][3]	Iv	E3	If = 20mA	35	-	-	mcd
		E4		45	-	-	
		E5		60	-	-	

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	≤ 30	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:

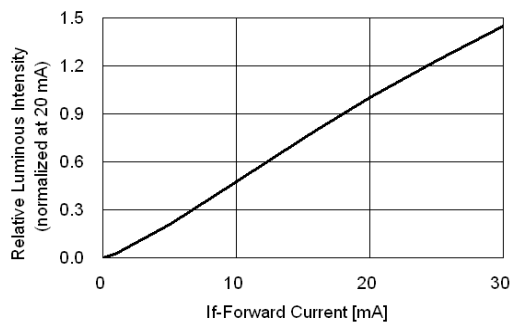**Fig.1** – Relative luminous Intensity vs. Forward Current

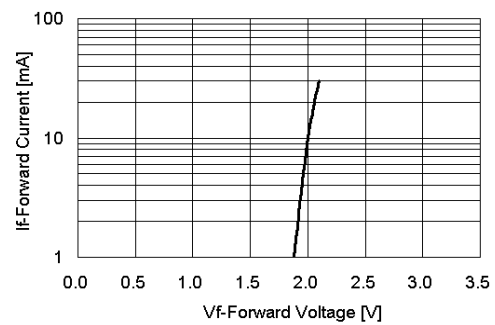**Fig.2** – Forward Current vs. Forward Voltage

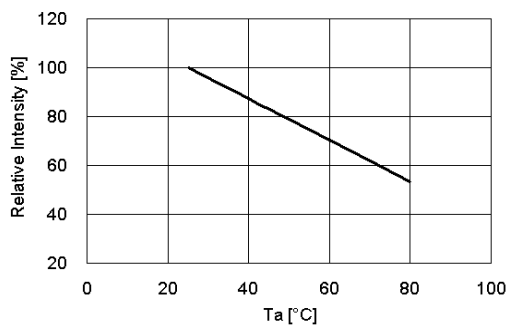**Fig.3** – Relative Intensity (@20mA) vs. Ambient Temperature

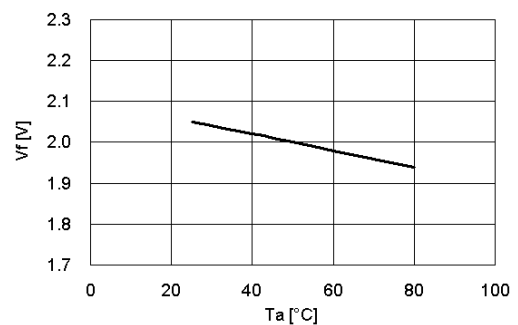**Fig.4** – Forward Voltage (@20mA) vs. Ambient Temperature

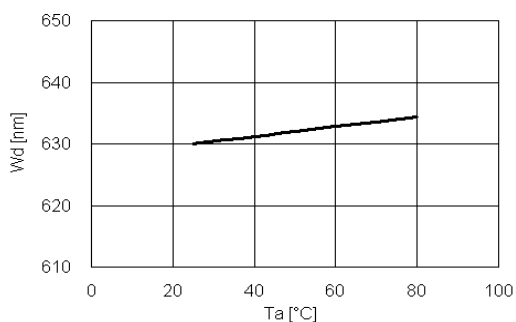**Fig.5** – Dominant Wavelength (20mA) vs. Ambient Temperature

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