EPISTAR

# ES-EABCS09A

InGaN S-series LED Chip

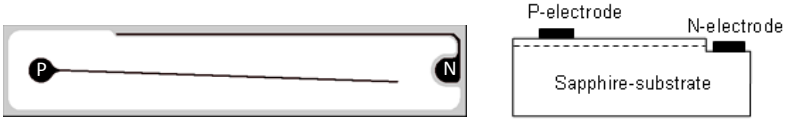
## > Mechanical Specification:

(1) Dimension
- Chip size: 9 mil x 45 mil (225 ± 25 μm x 1143 ± 25 μm)
- Thickness: 4.9 mil (125 ± 10 μm)
- P bonding pad: 2.4 mil (60 ± 10 μm)
- N bonding pad: 2.4 mil (60 ± 10 μm)

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

**Features:**
- High radiant flux
- 100% probing test
- Passivation layer on top
- Long operation life

**Applications:**
- Backlighting




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

| Parameter | Symbol | | Condition | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|---|
| **Forward Voltage** | Vf1 | | If = 10μA | 2.0 | - | - | V |
| | Vf2 | | If = 20mA | - | 2.8 | 3.0 | V |
| **Reverse Current** | Ir | | Vr = 5V | - | - | 2.0 | μA |
| **Dominant Wavelength**(2) | λd | | If = 20mA | 445 | - | 465 | nm |
| **Spectra Half-width** | Δλ | | If = 20mA | - | 25 | - | nm |
| **Radiant Flux**(3)(4) | Po | A37 | If = 20mA | 42 | - | 44 | mW |
| | | A38 | | 44 | - | 46 | |

Note:
(1) ESD protection during chip handling is recommended.
(2) Basically, the wavelength span is 20nm; however, customers' special requirements are also welcome.
(3) Radiant flux is determined by using an Ag-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** | If | Ta = 25˚C | ≤ 60 | mA |
| **Reverse Voltage** | Vr | Ta = 25˚C | ≤ 5 | V |
| **Junction Temperature** | Tj | - | ≤ 125 | ˚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

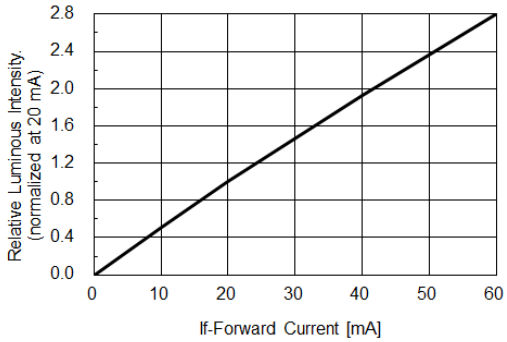



**Fig.2** – Forward Current vs. Forward Voltage

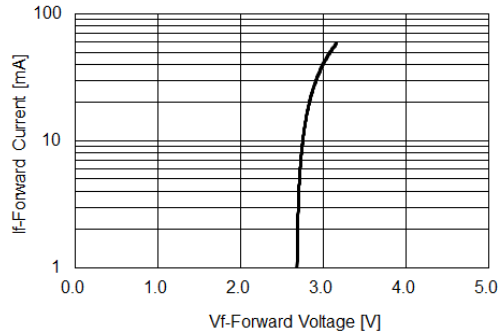



**Fig.3** – Relative Intensity (@20mA) vs. Ambient Temperature

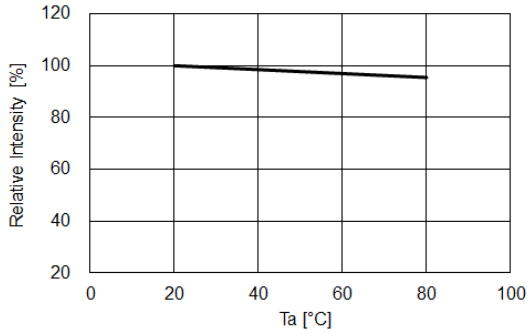



**Fig.4** – Forward Voltage (@20mA) vs. Ambient Temperature

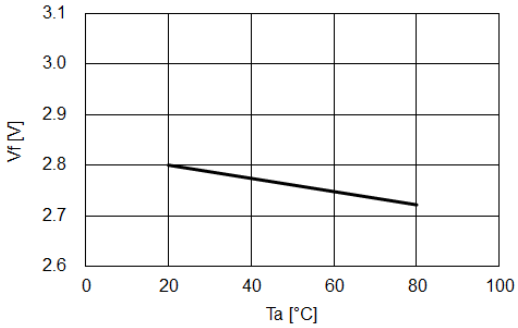



**Fig.5** – Dominant Wavelength (@20mA) vs. Ambient Temperature

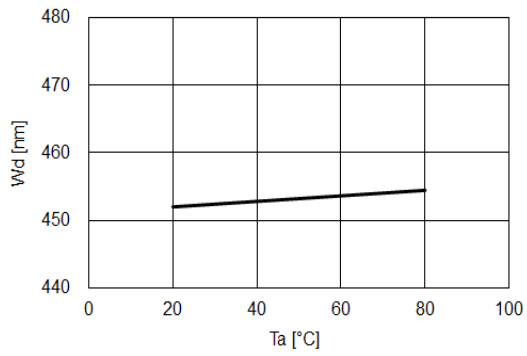



**Fig.6** – Maximum Driving Forward DC Current vs. Ambient Temperature (De-rating based on Tj max. = 125°C)