EPISTAR

# ES-FEBCPE10E

InGaN Blue LED Chip

## > Mechanical Specification:

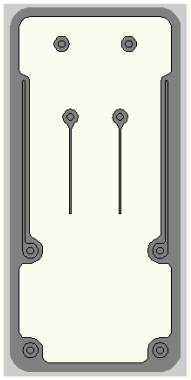
(1) Dimension
- Chip size: 10mil x 21mil (264 ± 25 μm x 540 ± 25 μm)
- Thickness: 3.9mil (100 ± 10 μm)
- Anode pad: 192± 10 μm x 162 ± 10 μm
- Cathode pad: 192 ± 10 μm x 162 ± 10 μm

(2) Metallization
- Electrode pad: Au

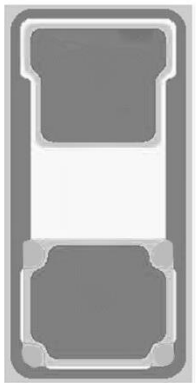
**Features:**
- Compatible with Solder Process
- High Power Density
- Low Rth and Long life time

**Applications:**
- Backlight

Top view



Bottom view




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

| Parameter | Symbol | Condition | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|
| **Forward Voltage** | Vf1 | If = 10μA | 1.6 | - | - | V |
| | Vf2 | If = 20mA | - | 2.8 | 3.0 | V |
| **Reverse Current** | Ir | Vr = 5V | - | - | 2.0 | uA |
| **Dominant Wavelength**(2) | λd | If = 20mA | 445 | - | 455 | nm |
| **Spectra Half-width** | Δλ | If = 20mA | - | 14 | - | nm |
| **Radiant Flux** (3)(4) | Po | If = 20mA | 34 | - | 35 | mW |
| | | | 35 | - | 36 | |
| | | | 36 | - | 37 | |
| | | | 37 | - | 38 | |
| | | | 38 | - | 39 | |
| | | | 39 | - | 40 | |

Note:
(1) ESD protection during chip handling is recommended.
(2) Basically, the wavelength span is 10nm; however, customers' special requirements are also welcome.
(3) Radiant flux is determined by EPISTAR standard.
(4) Radiant flux measurement allows a tolerance of ±15%.

## > Absolute Maximum Ratings:

| Parameter | Symbol | Condition | Rating | Unit |
|---|---|---|---|---|
| **Forward DC Current** | If | Ta = 25℃ | ≤ 60 | mA |
| **Reverse Voltage** | Vr | Ta = 25℃ | ≤ 5 | V |
| **Junction Temperature** | Tj | - | ≤ 125 | ℃ |
| **Storage Temperature** | Tstg | Chip | -40 ~ +85 | ℃ |
| | | Chip-on-tape/storage | 5 ~ 35 | ℃ |
| | | Chip-on-tape/transportation | -20 ~ +65 | ℃ |
| **Temperature during Packaging** | - | - | 260(<5sec)* | ℃ |

Note: Maximum ratings are package dependent. The above maximum ratings were determined using by EPISTAR standard. Forward current and junction temperature will cause the damage of LEDs if over the absolute maximum ratings.
*Reflow soldering should not be done more than two times.

## > Characteristic Curves:

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

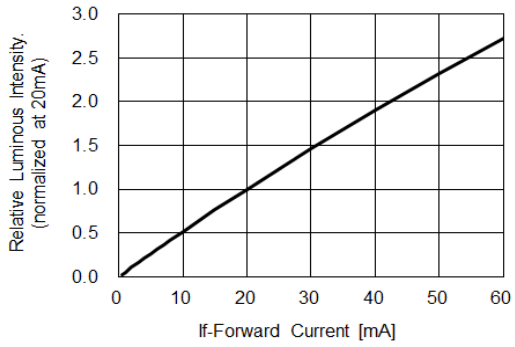



**Fig.2** – Forward Current vs. Forward Voltage

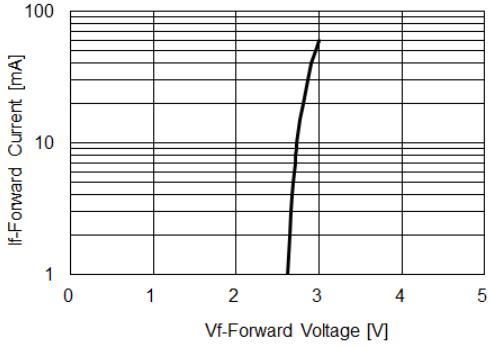



**Fig.3** – Relative Intensity (@20mA) vs. Ambient Temperature

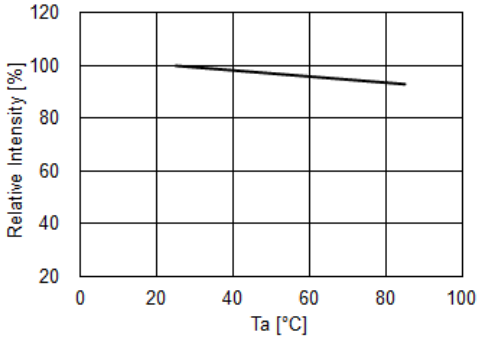



**Fig.4** – Forward Voltage (@20mA) vs. Ambient Temperature

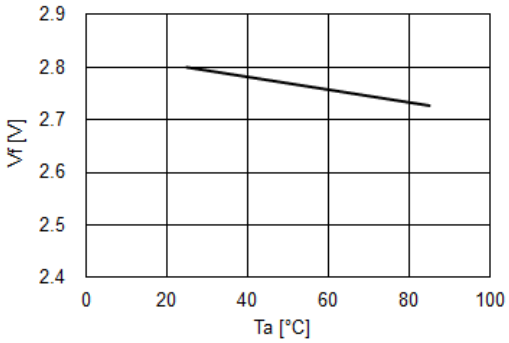



**Fig.5** – Dominant Wavelength (@20mA) vs. Ambient Temperature

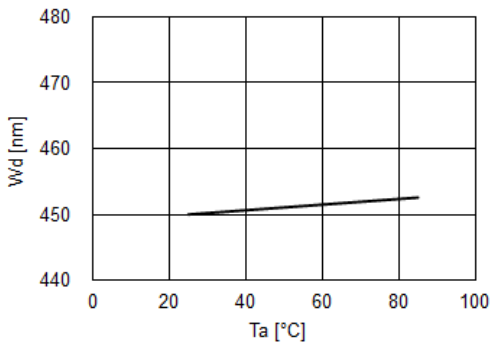



**Fig.6** – Maximum Driving Forward DC Current vs. Ambient Temperature (De-rating based on Tj max. = 125°C)