

### > Mechanical Specification:

#### (1) Dimension

- Chip size: 20 mil x 20 mil ( $510 \pm 25 \mu\text{m} \times 510 \pm 25 \mu\text{m}$ )
- Thickness: 5.9 mil ( $150 \pm 10 \mu\text{m}$ )
- Anode pad: 13 mil x 4 mil ( $334 \pm 10 \mu\text{m} \times 92 \pm 10 \mu\text{m}$ )
- Cathode pad: 14 mil x 4 mil ( $368 \pm 10 \mu\text{m} \times 109 \pm 10 \mu\text{m}$ )

#### (2) Metallization

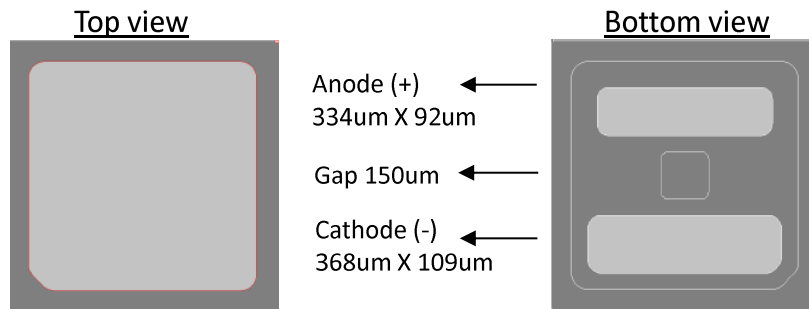
- Electrode pad: AuSn

#### Features:

- For flux eutectic, direct eutectic process, not suitable for solder
- High Power Density
- Low Rth and Long life time

#### Applications:

- Automotive



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

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Forward Voltage	Vf1	If = 10μA	1.6	-	-	V
	Vf2	If = 150mA	-	3.0	3.4	V
Reverse Current	Ir	Vr = 5V	-	-	1.0	μA
Dominant Wavelength <sup>(2)</sup>	λd	If = 150mA	445	-	455	nm
Spectra Half-width	Δλ	If = 150mA	-	25	-	nm
Radiant Flux <sup>(3)(4)</sup>	Po	A71	220	-	230	mW
		A72	230	-	240	

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°C	≤ 300	mA
Reverse Voltage	Vr	Ta = 25°C	≤ 5	V
Junction Temperature	Tj	-	≤ 125	°C
ESD withstand voltage(HBM) <sup>(2)</sup>	VESD	-	Up to 2	KV
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: (1) 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.

(2) According to ANSI/ESDA/JEDEC JS-001

## > Characteristic Curves:

Fig.1 – Relative luminous Intensity vs. Forward Current

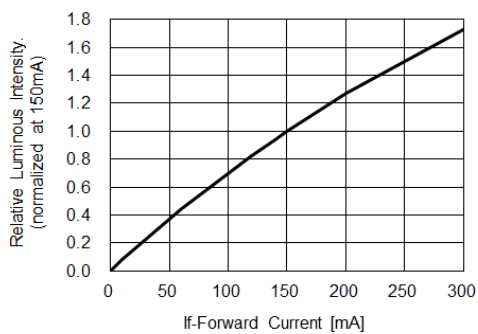


Fig.2 – Forward Current vs. Forward Voltage

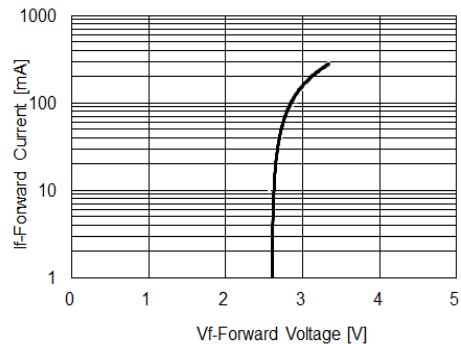


Fig.3 – Relative Intensity (@150mA) vs. Ambient Temperature

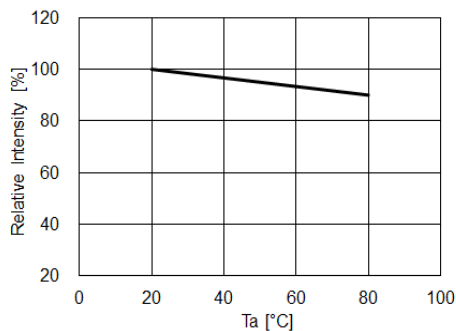


Fig.4 – Forward Voltage (@150mA) vs. Ambient Temperature

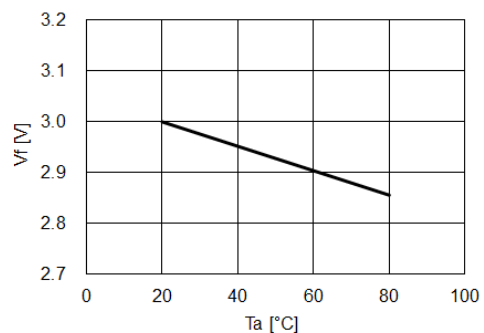


Fig.5 – Dominant Wavelength (@150mA) vs. Ambient Temperature

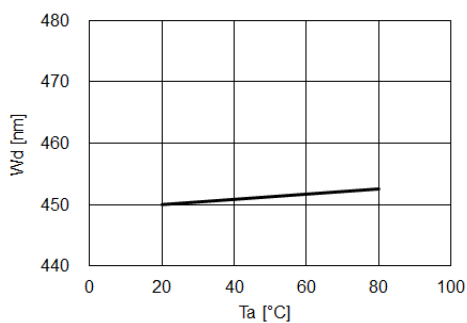
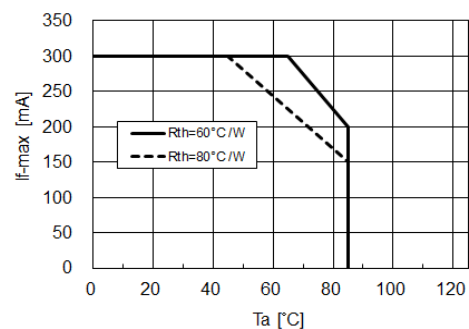


Fig.6 – Maximum Driving Forward DC Current vs. Ambient Temperature (De-rating based on Tj max. = 125°C)



## > Qualification:

- <sup>1)</sup> EPSTAR's LED chips and epi-wafers are designed and manufactured according to the quality management system that complies to the IATF 16949:2016 requirements (IATF No: 0325277/ Certificate Registration No: 20000910 IATF16).
- <sup>2)</sup> The chip qualification test plan is based on the guidelines of AEC-Q101-REV-D, Failure Mechanism Based Stress Test Qualification for Discrete Semiconductors in Automotive Applications.

## > Revision:

Version	Page	Subjects	Date of Modification
A	3	Initial Release	Mar. 2020