

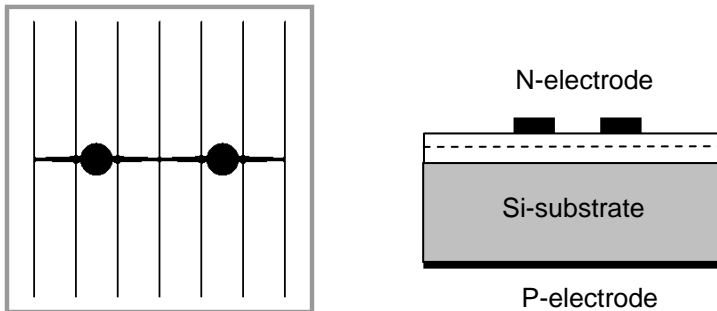
> Mechanical Specification:

(1) Dimension

- Chip size: 42 mil x 42 mil ($1067\pm 25\ \mu\text{m}$ x $1067\pm 25\ \mu\text{m}$)
- Thickness: 6.7 mil ($170\pm 25\ \mu\text{m}$)
- N bonding pad: 4.9 mil ($125\pm 10\ \mu\text{m}$)

(2) Metallization

- Topside N electrode (x2): Au alloy
- Backside P electrode: AuSn



Features:

- Long-term supply
- High radiant flux
- Thin film structure
- Vertical electrode
- High driving current

Applications:

- Automotive

> Electro-optical Characteristics at 25°C:

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit	
Forward Voltage	Vf1	If = 10 μ A	1.4	-	-	V	
	Vf2	If = 1000mA	-	3.1	3.4	V	
Reverse Current	Ir	Vr = 25V	-	-	5.0	μ A	
Peak Wavelength ⁽¹⁾	λ_p	If = 1000mA	840	855	870	nm	
Spectra Half-width	$\Delta\lambda$	If = 1000mA	-	35	-	nm	
Radiant flux ⁽²⁾⁽³⁾	Po	D17	If = 1000mA	870	-	-	mW
		D18		970	-	-	
		D19		1070	-	-	
		D20		1170	-	-	

Note:

(1) Basically, the wavelength span is 30nm; however, customers' special requirements are also welcome.

(2) Customers' special requirements are also welcome.

(3) Radiant flux is measured by EPISTAR's equipment on bare chips.

> Absolute Maximum Ratings⁽¹⁾:

Parameter	Symbol	Condition	Rating	Unit
Forward DC Current	If	Ta = 25°C	≤ 1500	mA
Reverse Voltage	Vr	Ta = 25°C	≤ 10	V
Junction Temperature	Tj	-	≤ 145	°C
ESD withstand voltage(HBM) ⁽²⁾	V _{ESD}	-	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 a Metal Core Printed Circuit Board (MCPCB) without an encapsulant. Stresses in excess of the absolute maximum ratings such as forward current and junction temperature may cause damage to the LED.

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

> Characteristic Curves:

Fig.1 – Relative Radiant Flux vs. Forward Current

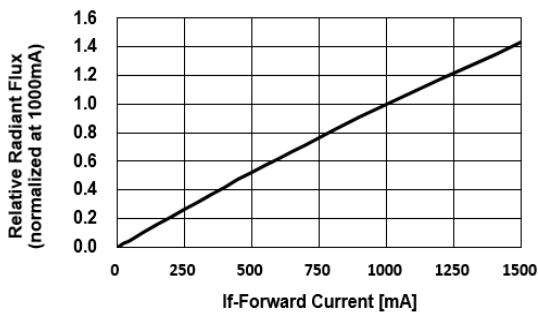


Fig.2 – Forward Current vs. Forward Voltage

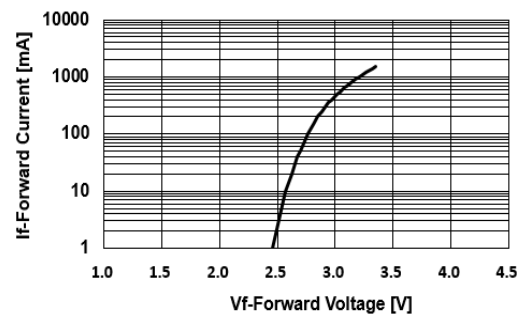


Fig.3 – Relative Radiant Flux (@1000mA) vs. Ambient Temperature

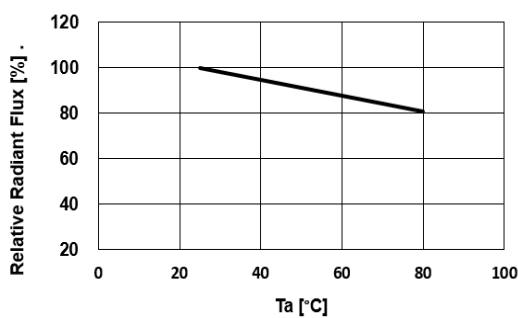


Fig.4 – Forward Voltage (@1000mA) vs. Ambient Temperature

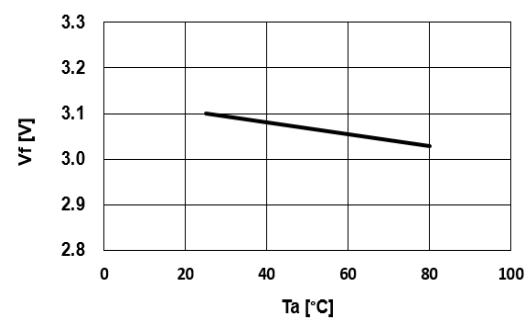


Fig.5 – Peak Wavelength (@1000mA) vs. Ambient Temperature

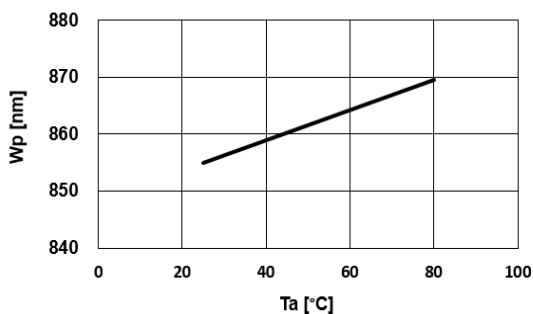
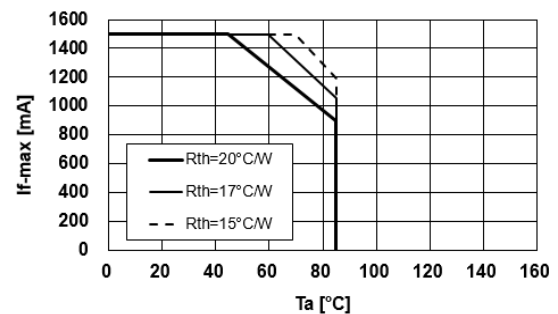


Fig.6 – Maximum Driving Forward DC Current vs. Ambient Temperature (De-rating based on Tj max. = 145°C)



> Qualification :

¹⁾ EPISTAR'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).

²⁾ The chip qualification test plan is performed under certain test items suggested by AEC-Q102.

> Revision :

Version	Page	Subjects	Date of Modification
A		Initial Release	Sep. 2021