EPISTAR

ES-SMBRPN20D

AlGaInP PN-series LED Chip

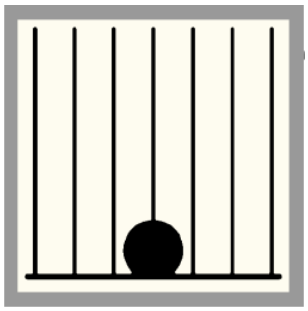
> Mechanical Specification:

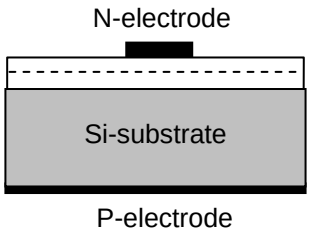
(1) Dimension
- Chip size: 20 mil x 20 mil (500±25 μm x 500±25 μm)
- Thickness: 8.8 mil (225±25 μm)
- N bonding pad: 3.9 mil (100±10 μm)

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

Features:
· High radiant flux
· Thin film structure
· Vertical electrode
· High driving current

Applications:
· Horticulture lighting
· Medical appliances





> Electro-optical Characteristics at 25°C:

Parameter	Symbol		Condition	Min.	Typ.	Max.	Unit
Forward Voltage	Vf1		If = 10μA	1.3	-	-	V
	Vf2		If = 150mA	-	2.2	2.6	V
Reverse Current	Ir		Vr = 10V	-	-	5.0	μA
Peak Wavelength[(1)]	λp		If = 150mA	650	660	670	nm
Spectra Half-width	Δλ		If = 150mA	-	20	-	nm
Radiant flux[(2)(3)]	Po	H5	If = 150mA	85	-	-	mW
		H6		100	-	-	

Note:
(1) Basically, the wavelength span is 20nm; however, customers' special requirements are also welcome.
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(3) Radiant flux is measured by EPISTAR's equipment on bare chips.

> Absolute Maximum Ratings:

Parameter	Symbol	Condition	Rating	Unit
Forward DC Current	If	Ta = 25˚C	≤ 180	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 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.

> Characteristic Curves:

Fig.1 – Relative Radiant Flux vs. Forward Current

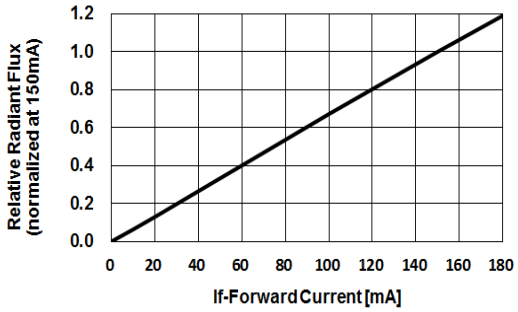

Fig.2 – Forward Current vs. Forward Voltage

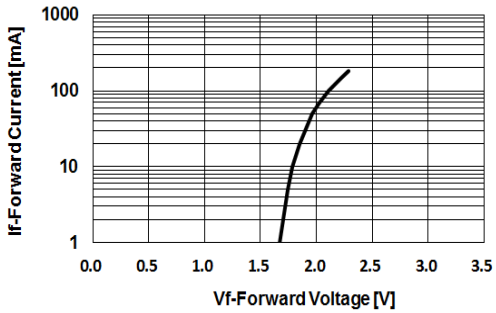

Fig.3 – Relative Radiant Flux (@150mA) vs. Ambient Temperature

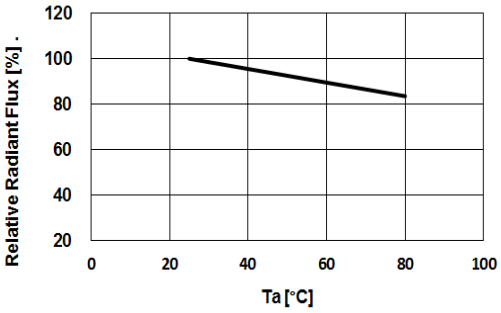

Fig.4 – Forward Voltage (@150mA) vs. Ambient Temperature

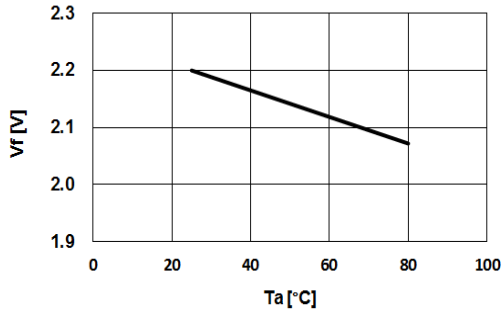

Fig.5 – Peak Wavelength (@150mA) vs. Ambient Temperature

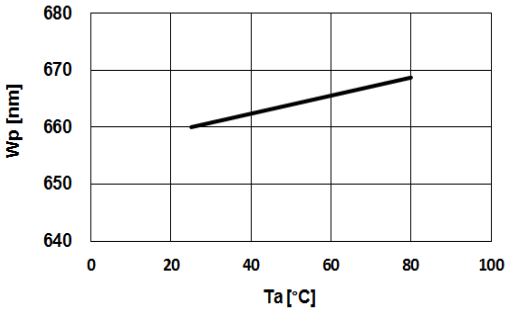

Fig.6 – Maximum Driving Forward DC Current vs. Ambient Temperature (De-rating based on Tj max. = 115°C)