EPISTAR

ES-SMHFPN42D

AlGaInP PN-series LED Chip

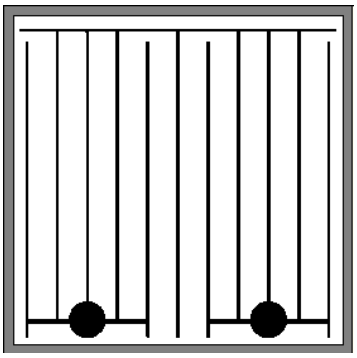
> Mechanical Specification:

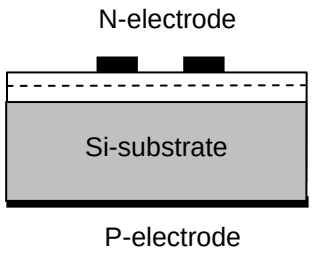
(1) Dimension
- Chip size: 42 mil x 42 mil (1066 ± 25 μm x 1066 ± 25 μm)
- Thickness: 8.8 mil (225 ± 25 μm)
- N bonding pad: 4.0 mil (110 ± 10 μm)

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

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

Applications:
· Horticulture lighting
· Special lighting





> Electro-optical Characteristics at 25°C:

Parameter	Symbol		Condition	Min.	Typ.	Max.	Unit
Forward Voltage	Vf1		If = 10μA	1.0	-	-	V
	Vf2		If = 350mA	-	1.9	2.4	V
Reverse Current	Ir		Vr = 10V	-	-	5.0	μA
Peak Wavelength[1]	λp		If = 350mA	720	730	740	nm
Spectra Half-width	Δλ		If = 350mA	-	27	-	nm
Radiant flux[2][3]	Po	H9	If = 350mA	175	-	-	mW
		H10		210	-	-	
		H11		230	-	-	

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	≤ 700	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

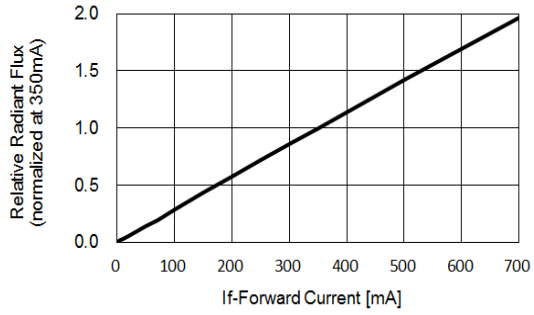

Fig.2 – Forward Current vs. Forward Voltage

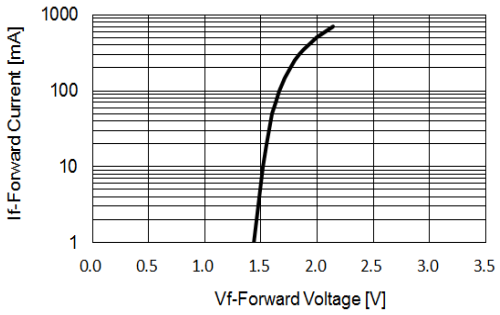

Fig.3 – Relative Radiant Flux (@350mA) vs. Ambient Temperature

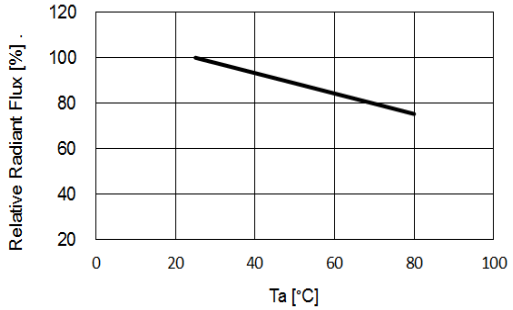

Fig.4 – Forward Voltage (@350mA) vs. Ambient Temperature

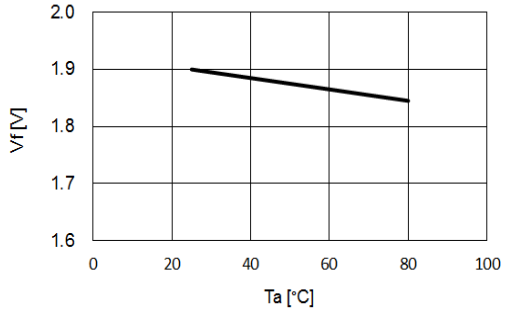

Fig.5 – Peak Wavelength (@350mA) vs. Ambient Temperature

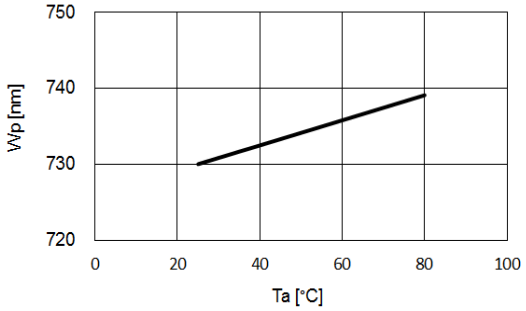

Fig.6 – Maximum Driving Forward DC Current vs. Ambient Temperature (De-rating based on Tj max. = 115°C)