EPISTAR corporation
晶元光電股份有限公司

Type: EDI-EA1143

1. Applications:

- Street lamps
- Functional lighting – MR16, AR111, PAR and light bulb replacements

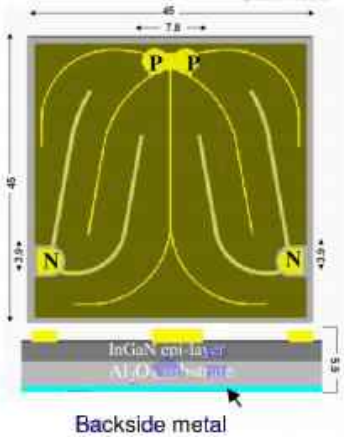
2. Features:

(1) High luminous intensity
(2) Long operation life
(3) 100% probing test
(4) Passivation layer on top
(5) Backside mirror layer

3. Characteristics:

(1) Size
Chip size: 45 mil x 45 mil (1143±25μm x 1143±25μm)
Chip thickness: 5.9 mil (150±10μm)
P bonding pad x 2: 3.9 mil (100±10 μm)
N bonding pad x 2:3.9 mil (100±10 μm)
(2) Metallization
P electrode: Au alloy
N electrode: Au alloy
Backside metal: Au alloy
(3) Structure
Refer to drawing

Unit: mil



Electro-optical characteristics: (1)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Forward voltage	V_{f1}	I_f = 10uA	1.6	---	---	V
	V_{f2}	I_f = 350mA	---	3.15	**3.6**	V
Reverse current	I_r	V_r = 5V	---	---	2	μA
Dominant wavelength(2)	λ_d	I_f = 350mA	445	---	465	nm
Spectra half-width	$\Delta\lambda$	I_f = 350mA	---	25	---	nm
Radiant power(3) (4)	Po	I_f = 350mA	255	---	275	mW
			275		295	
			295	---	320	
			320		340	

(1) ESD protection during chip handling is recommended.
(2) Basically, wavelength uniformity is λ_d±5nm; however, customer's special requirements are also welcome.
(3) Customer's special requirements are also welcome.
(4) Radiant power is determined by a correlation with luminous intensity using a Au-plated TO-39 header without an encapsulant.
(5) The tolerance is ±15% on the above radiant flux specifications.

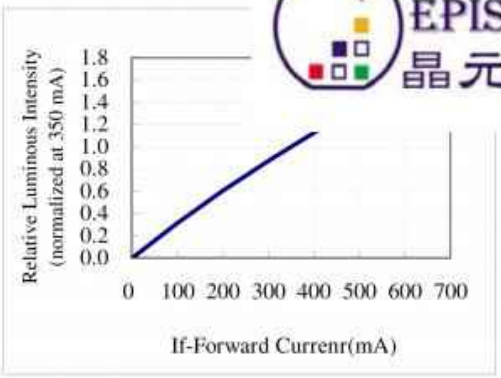


Fig-1 Relative Luminous Intensity vs. Forward current

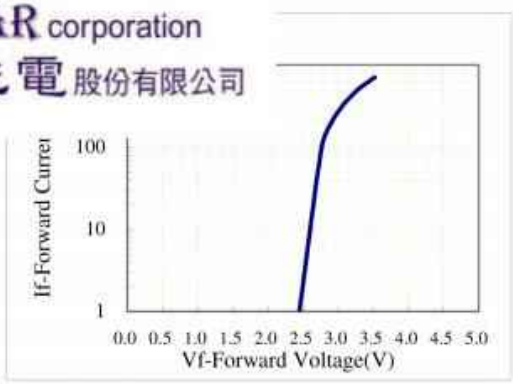


Fig-2 Forward Current vs. Forward Voltage

Absolute maximum ratings:

Parameter	Symbol	Condition	Rating	Unit
Forward DC current	I_f	Ta=25ºC	≤ 700	mA
Reverse voltage	V_r	Ta=25ºC	≤ 5	V
Junction temperature	T_j	---	≤ 115	°C
Storage temperature	T_{stg}	chip	-40 ~ +85	°C
		chip-on-tape/storage	0 ~ 40	°C
		chip-on-tape/transportation	-20 ~ +65	°C
Temperature during ackaging		---	280(<10sec)	°C

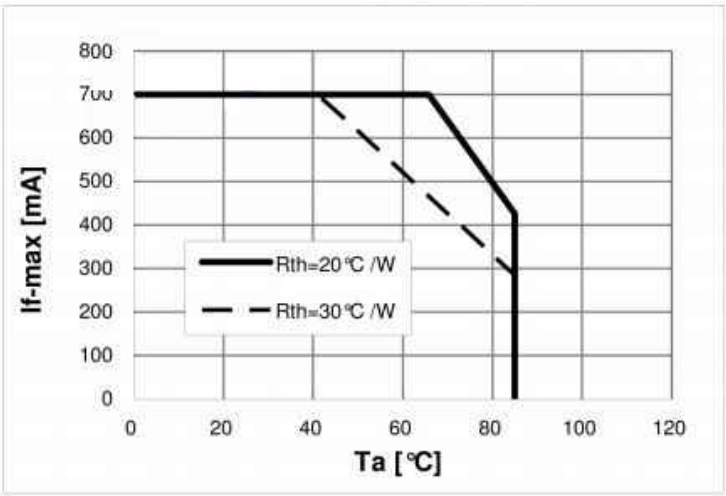


Fig-3 Maximum Driving Forward DC Current vs. Ambient Temperature (Derating based on Tj max. = 115ºC)

Maximum rating is package dependent. The above maximum rating was 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.