



SMAL850



TECHNICAL DATA

High Power LED Array, 60 chips, SMD **InGaN**

SMAL850 is a wide viewing and extremely high output power illuminator assembled with a total of 60 high efficiency AlGaAs diode chips, mounted on an AlN ceramics and covered with clear silicone resing.

These devices are designed for high current operation with proper heat sinking to improve thermal conductive efficiency.

Specifications

- Structure: InGaN, 60 LED chips
- Peak Wavelength: typ. 850 nm
- Optical Output Power: typ. 1.1 W
- Package: TO-66 stem with AlN, clear epoxy resin

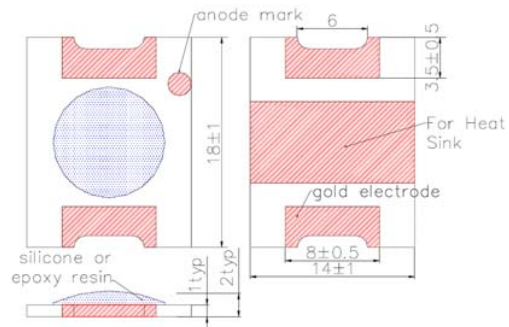
Absolute Maximum Ratings ($T_C=25^\circ\text{C}$)

Item	Symbol	Value	Unit
Power Dissipation	P_D	10.0	W
Forward Current	I_F	1.2	A
Pulse Forward Current *1	I_{FP}	5.0	A
Junction Temperature	T_J	100	$^\circ\text{C}$
Thermal Resistance *2	R_{TH}	6.3	K/W
Reverse Voltage	V_R	50	V
Operating Temperature	T_{opr}	-30 ... +80	$^\circ\text{C}$
Storage Temperature	T_{stg}	-30 ... +100	$^\circ\text{C}$
Soldering Temperature *3	T_{sol}	250	$^\circ\text{C}$

*1 duty = 1%, pulse width = 1 μs

*2 junction – package, mounted on heat sink

*3 must be completed within 3 seconds



(Unit: mm)

Electro-Optical Characteristics

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Total Radiated Power	P_O	$I_F = 800 \text{ mA}$	-	1.1	-	W
Total Radiated Power	P_O	$I_{FP} = 4 \text{ A}$	-	5.5	-	W
Radiant Intensity	I_E	$I_F = 800 \text{ mA}$	-	180	-	mW/sr
Forward Voltage	V_F	$I_F = 800 \text{ mA}$	-	7.8	-	V
Reverse Voltage	V_R	$I_R = 10 \mu\text{A}$	30	-	-	V
Peak Wavelength	λ_P	$I_F = 800 \text{ mA}$	840	850	860	nm
Half Width	$\Delta\lambda$	$I_F = 800 \text{ mA}$	-	40	-	nm
Viewing Half Angle	$\Theta_{1/2}$	$I_F = 800 \text{ mA}$	-	± 72	-	deg.
Rise Time	t_r	$I_F = 100 \text{ mA}$	-	15	-	ns
Fall Time	t_f	$I_F = 100 \text{ mA}$	-	10	-	ns

Heat Sink is required, thermal resistance <8K/W



Notes

- This high power LED must be cooled!
- Do not view directly into the emitting area of the LED during operation!
- The above specifications are for reference purpose only and subjected to change without prior notice.

