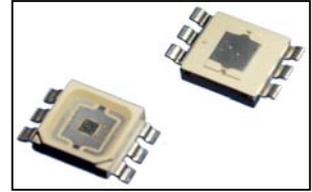




# SMB1W-850D



## TECHNICAL DATA

### High Power LED, SMD

### AlGaAs

SMB1W-850D are AlGaAs High Power LEDs mounted on a copper heat sink with a 5x5 mm SMD package and molded with epoxy resin. On forward bias, it emits a radiation of typical 600 mW at a peak wavelength of 850 nm.

#### Specifications

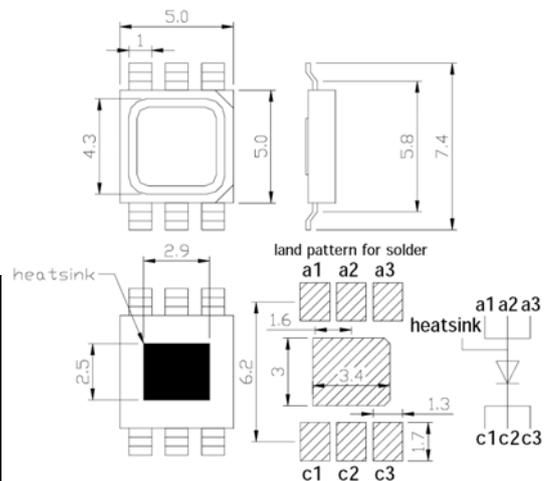
- Structure: AlGaAs, 1W high power chip
- Peak Wavelength: typ. 850 nm
- Optical Output Power: typ. 600 mW
- Package
  - SMD, PPA resin
  - Lead frame die: silver plated on copper
  - Lens: epoxy resin

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

Item	Symbol	Value	Unit
Power Dissipation	$P_D$	3480	mW
Forward Current	$I_F$	1200	mA
Pulse Forward Current *1	$I_{FP}$	3000	mA
Reverse Voltage	$V_R$	10	V
Thermal Resistance	$R_{th}$	6	K/W
Operating Temperature	$T_{opr}$	-30 ... +85	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	-30 ... +100	$^\circ\text{C}$
Soldering Temperature *2	$T_{sol}$	255	$^\circ\text{C}$

\*1 duty = 1%, pulse width = 10  $\mu\text{s}$

\*2 must be completed within 5 seconds



(Unit: mm)

#### Electro-Optical Characteristics

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Forward Voltage	$V_F$	$I_F = 1.2 \text{ A}$	-	2.2	2.9	V
Pulsed Forward Current	$V_{FP}$	$I_{FP} = 3 \text{ A}$	-	3.5	4.7	V
Reverse Current	$I_R$	$V_R = 10 \text{ V}$	-	-	10	$\mu\text{A}$
Total Radiated Power	$P_O$	$I_F = 1.2 \text{ A}$	450	600	-	mW
Radiant Intensity	$I_E$	$I_F = 1.2 \text{ A}$	-	370	-	mW/sr
Peak Wavelength	$\lambda_P$	$I_F = 100 \text{ mA}$	-	870	-	nm
Half Width	$\Delta\lambda$	$I_F = 100 \text{ mA}$	-	45	-	nm
Viewing Half Angle	$\Theta_{1/2}$	$I_F = 100 \text{ mA}$	-	$\pm 66$	-	deg.
Rise Time	$t_r$	$I_F = 100 \text{ mA}$	-	15	-	ns
Fall Time	$t_f$	$I_F = 100 \text{ mA}$	-	10	-	ns

Total Radiated Power is measured by S3584-08

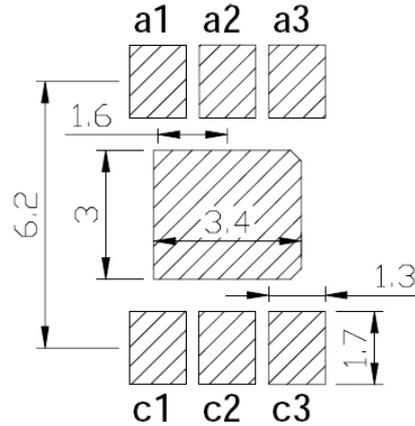
Radiant Intensity is measured by Tektronix J-6512

**Notes:** 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.



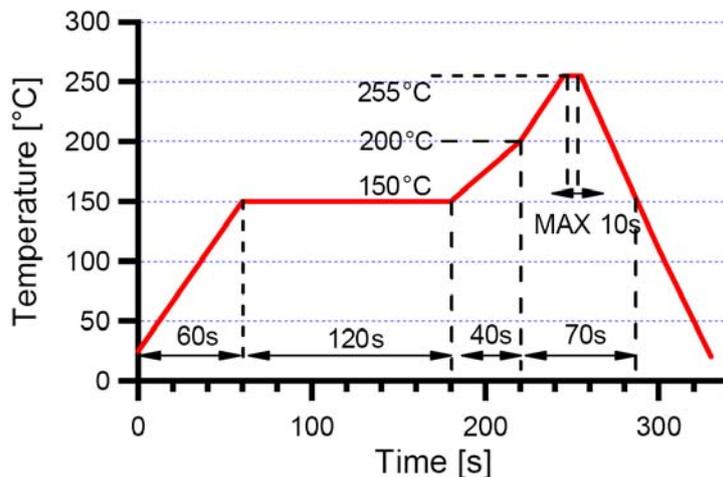
## Recommended Land Layout (Unit: mm)



### 1. Soldering Conditions

- DO NOT apply any stress to the lead particularly when heat.
- After soldering the LEDs should be protected from mechanical shock or vibration until the LEDs return to room temperature.
- When it is necessary to clamp the LEDs to prevent soldering failure, it is important to minimize the mechanical stress on the LEDs.

### Soldering Conditions



### 2. Static Electricity

- The LEDs are very sensitive to Static Electricity and surge voltage. So it is recommended that a wrist band or an anti-electrostatic glove be used when handling the LEDs.
- All devices, equipment and machinery must be grounded properly. It is recommended that precautions should be taken against surge voltage to the equipment that mounts the LEDs.

