



## ELD-910-525



### TECHNICAL DATA

#### Infrared LED, 5 mm

#### AlGaAs

ELD-910-525 is a AlGaAs, high-power, high-speed infrared LED in standard 5 mm housing. On forward bias, it emits a high power radiation of typical 30 mW at a peak wavelength of 910 nm.

#### Specifications

- Structure: AlGaAs/AlGaAs
- Peak Wavelength: typ. 910 nm
- Optical Output Power: typ. 30 mW
- Package: 5 mm plastic lens



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

Item	Symbol	Condition	Value	Unit
Power Dissipation	$P_D$		170	mW
Forward Current	$I_F$		100	mA
Peak Forward Current	$I_{FP}$	$t_p: 50 \mu\text{s}, t_p / T = 1/2$	200	mA
Operating Temperature	$T_{opr}$		-20 ... +85	$^\circ\text{C}$
Storage Temperature	$T_{stg}$		-40 ... +100	$^\circ\text{C}$
Junction Temperature	$T_J$		100	$^\circ\text{C}$
Soldering Temperature	$T_{sol}$	$t \leq 5 \text{ s}, 3 \text{ mm from case}$	260	$^\circ\text{C}$

#### Electro-Optical Characteristics

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Forward Voltage	$U_F$	$I_F = 20 \text{ mA}$	-	1.3	1.5	V
Forward Voltage *	$U_F$	$I_F = 100 \text{ mA}$	-	1.4	1.7	V
Reverse Voltage	$U_R$	$I_R = 100 \mu\text{A}$	5	-	-	V
Radiation Power	$P_O$	$I_F = 20 \text{ mA}$	5	7	-	mW
Radiation Power *	$P_O$	$I_F = 100 \text{ mA}$	-	30	-	mW
Radiation Intensity	$I_E$	$I_F = 20 \text{ mA}$	20	30	-	mW/sr
Radiation Intensity *	$I_E$	$I_F = 100 \text{ mA}$	-	120	-	mW/sr
Peak Wavelength	$\lambda_P$	$I_F = 20 \text{ mA}$	900	910	915	nm
Half Width	$\Delta\lambda$	$I_F = 20 \text{ mA}$	-	65	-	nm
Viewing Angle	$\phi$	$I_F = 20 \text{ mA}$	-	25	-	deg.
Switching Time	$t_r, t_f$	$I_F = 20 \text{ mA}$	-	400	-	ns

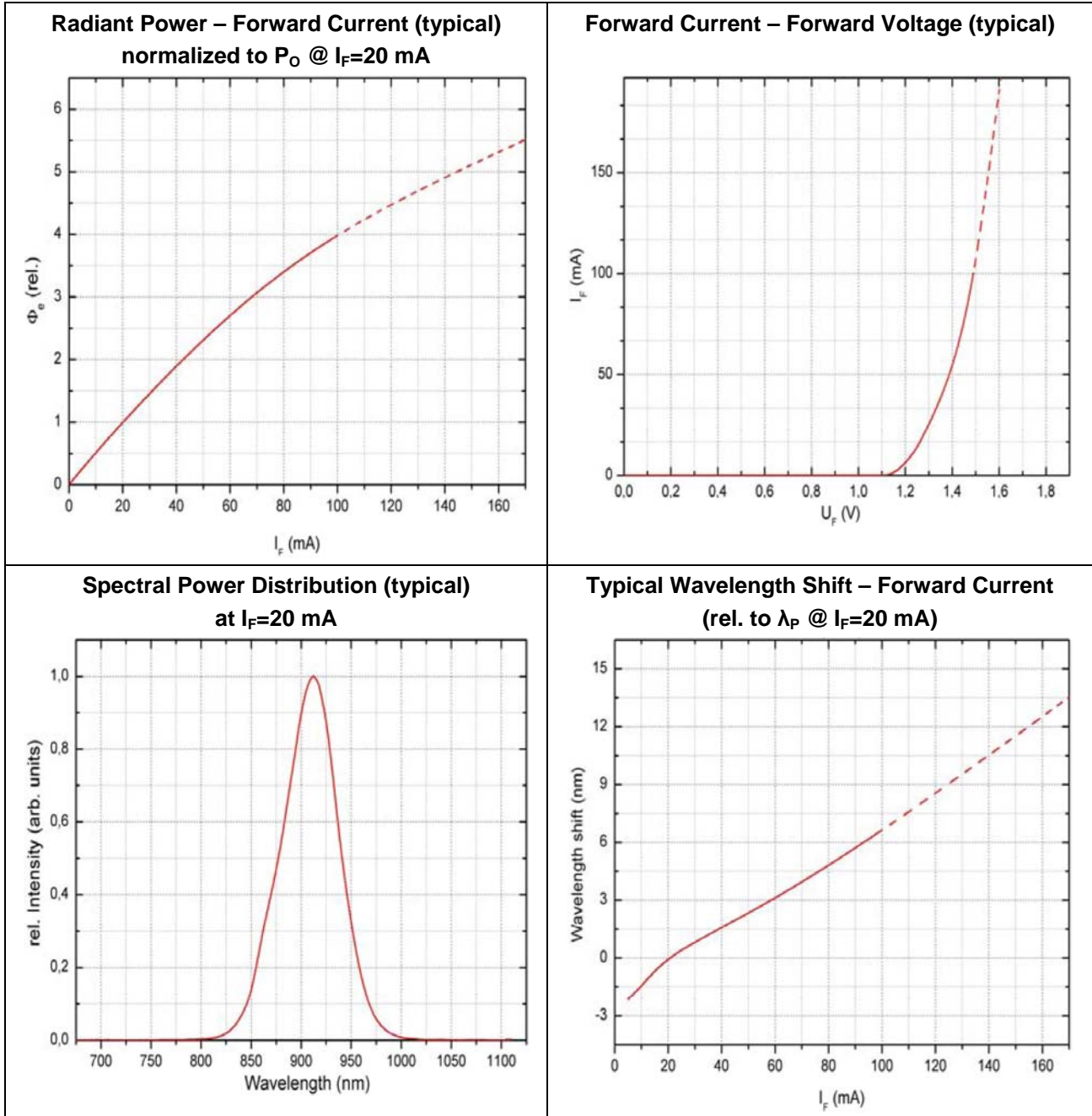
\* measured after 30s current flow

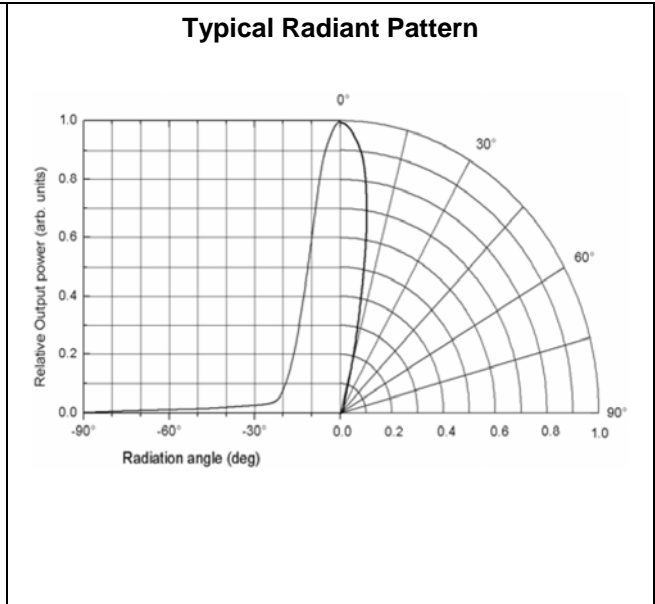
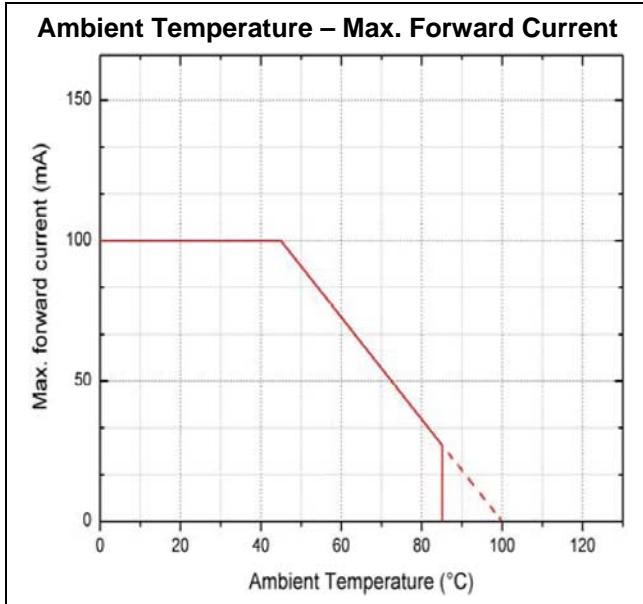
#### Notes

- 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.

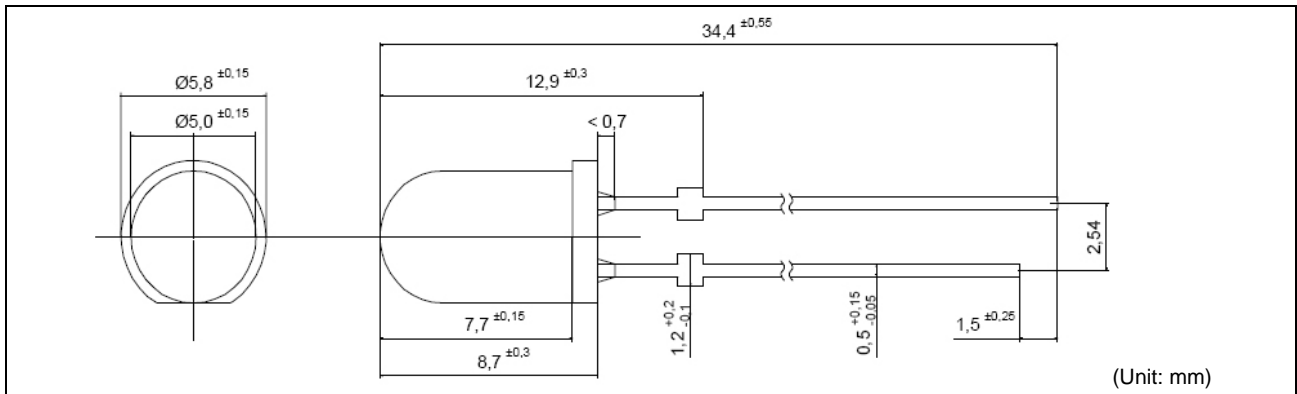


## Typical Performance Curves





## Outer Dimensions





## **Precaution for Use**

### **1. Cautions**

DO NOT look directly into the emitted light or look through the optical system. To prevent in adequate exposure of the radiation, wear protective glasses.

This LED is emitting invisible light.

### **2. Remarks concerning optical radiation safety\***

Up to a forward current of 40 mA, at continuous operation, this LED may be classified as LED product Class 1, according to standard IEC 60825-1:A2. Class 1 products are safe to eyes and skin under reasonably predictable conditions. This implicates a direct observation of the light beam by means of optical instruments.

If intended to operate at higher continuous current, this product should be classified as LED product Class 1M, according to standard IEC 60825-1:A2. Class 1M products are safe to eyes and skin under normal conditions, including when users view the light beam directly. Class 1M products produce either a highly divergent beam or a large diameter beam, so only a small part of the whole light beam can enter the eye. However, these LED products can be harmful to the retina if the beam is viewed using magnifying optical instruments. Therefore, users should not incorporate optics that could concentrate the output into the eyes.

\*Note: Safety classification of an optical component mainly depends on the intended application and the way the component is being used. Furthermore, all statements made to classification are based on calculations and are only valid for this LED "as it is", and at continuous operation. Using pulsed current or altering the light beam with additional optics may lead to different safety classifications. Therefore these remarks should be taken as recommendation and guideline only.

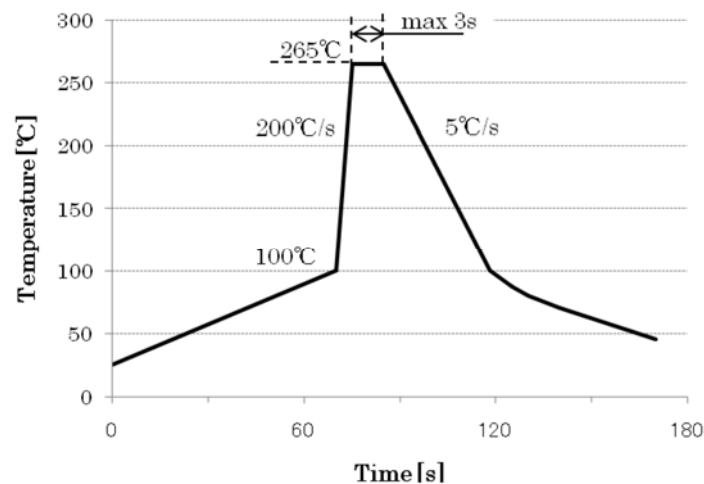
### **3. Lead Forming**

- When forming leads, the leads should be bent at a point at least 3 mm from the base of the lead. DO NOT use the base of the leadframe as a fulcrum during lead forming.
- Lead forming should be done before soldering.
- DO NOT apply any bending stress to the base of the lead. The stress to the base may damage the LED's characteristics or it may break the LEDs.
- When mounted the LEDs onto the printed circuit board, the holes on the circuit board should be exactly aligned with the leads of LEDs. If the LEDs are mounted with stress at the leads, it causes deterioration of the lead and it will degrade the LEDs.



## 4. Soldering Conditions

- Solder the LEDs no closer than 3 mm from the base of the lead.
- DO NOT apply any stress to the lead particularly when heat.
- The LEDs must not be reposition after soldering.
- After soldering the LEDs, the lead 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.
- Cut the LED leads at room temperature. Cutting the leads at high temperature may cause the failure of the LEDs.



## 5. 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.