



## ELD-810-525

- Infrared Light Emitting Diode
- 810 nm, 45 mW
- Viewing angle: 20°
- Package: 5 mm clear epoxy



### Description



**ELD-810-525** is a AlGaAs based Light Emitting Diode with a typical peak wavelength of 810 nm and an optical output power of 45 mW. It is mounted on a lead frame and encapsulated in a standard clear 5 mm epoxy package.

### Maximum Ratings ( $T_{CASE}=25^{\circ}C$ )

Parameter	Symbol	Values		Unit
		Min.	Max.	
Power Dissipation	$P_D$		240	mW
Forward Current	$I_F$		100	mA
Peak Forward Current	$I_{FP}$		200	mA
Operating Temperature	$T_{CASE}$	- 20	+ 85	°C
Storage Temperature	$T_{STG}$	- 40	+ 100	°C
Junction Temperature	$T_J$		+ 100	°C

### Optical and Electrical Characteristics ( $T_{CASE}=25^{\circ}C$ )

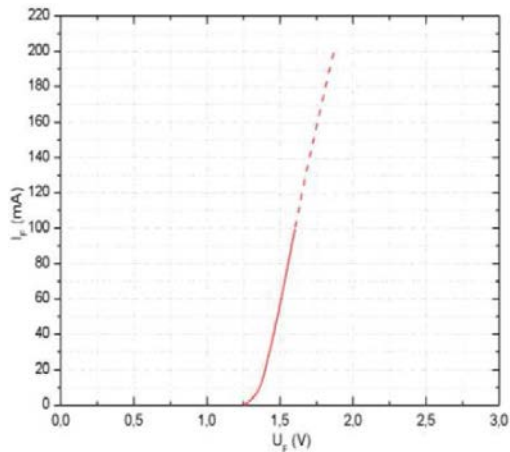
Parameter	Symbol	Conditions	Values			Unit
			Min.	Typ.	Max.	
Peak Wavelength	$\lambda_P$	$I_F=20mA$	800	810	820	nm
Spectral Half Width (FWHM)	$\Delta\lambda_{0,5}$	$I_F=20mA$		30		nm
Radiated Power	$\Phi_E$	$I_F=20mA$	6	9		mW
Radiated Power *	$\Phi_E$	$I_F=100mA$	30	45		mW
Radiant Intensity	$I_E$	$I_F=20mA$	25	35		mW/sr
Radiant Intensity *	$I_E$	$I_F=100mA$		170		mW/sr
Forward Voltage	$V_F$	$I_F=20mA$		1.4	1.7	V
Forward Voltage	$V_F$	$I_F=100mA$		1.6		V
Reverse Voltage	$V_R$	$I_R=10\mu A$	5			V
Viewing Angle	$\varphi$	$I_F=100mA$		20		deg.
Rise Time	$t_R$	$I_F=100mA$		40		ns
Fall Time	$t_F$	$I_F=100mA$		40		ns

\* measured after 30s current flow

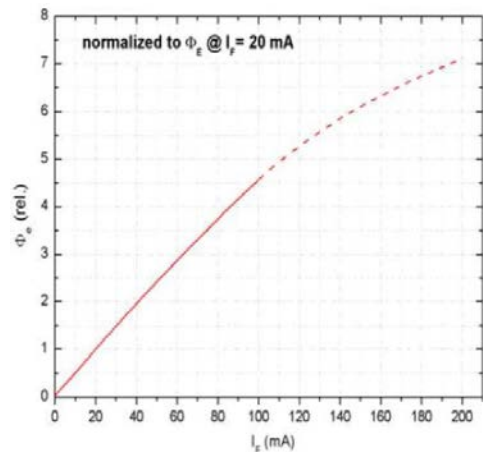


## Typical Performance Curves

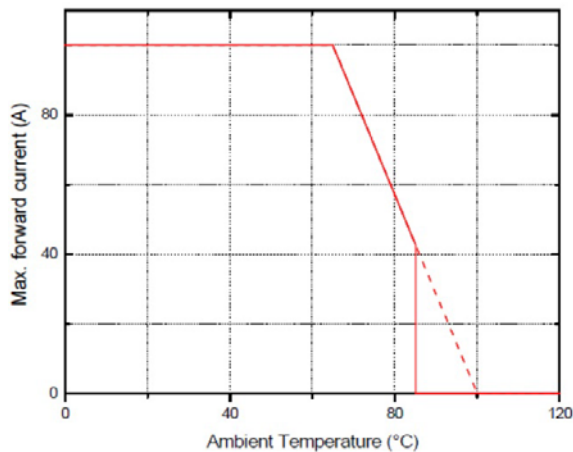
### Forward Current vs. Forward Voltage



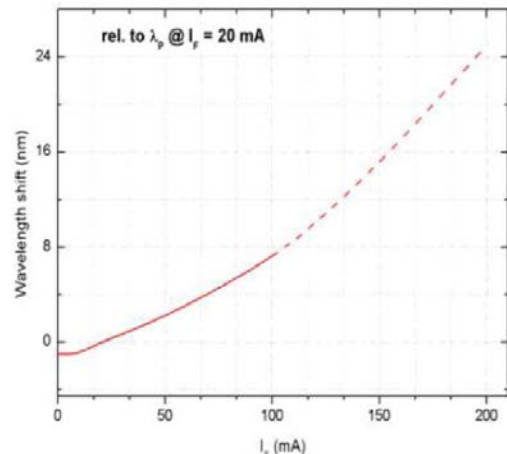
### Radiant Power vs. Forward Current



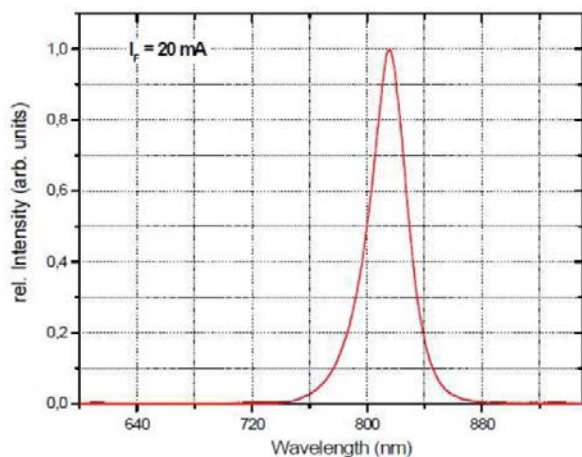
### Allowed Forward Current vs. Ambient Temperature



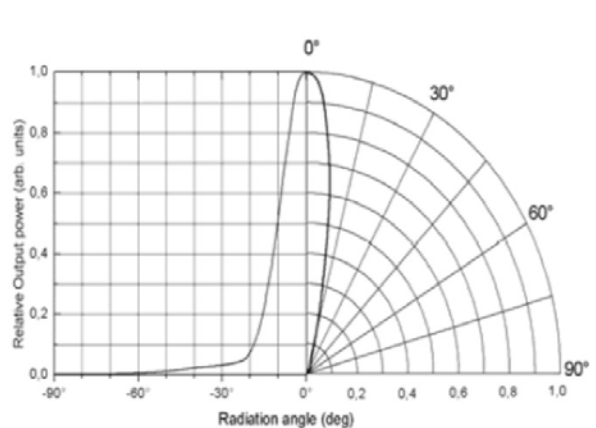
### Typical Wavelength Shift vs. Forward Current



### Relative Spectral Emission



### Radiation Characteristics

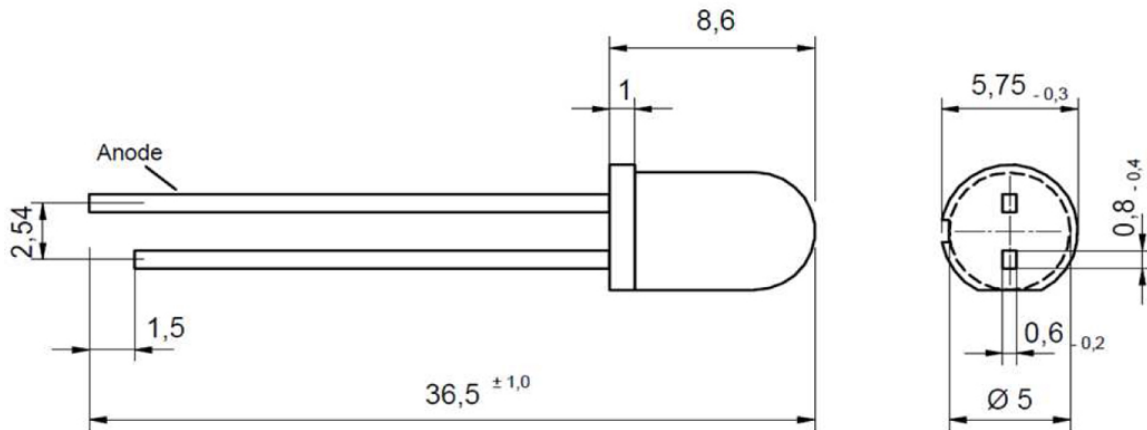




## Outline Dimensions

ELD-810-525

5 mm epoxy



All Dimensions in mm

## Precautions

### Cautions:

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

### Operation:

- Check your connection circuits before turning on the LED
- Mind the LED polarity: LED anode is marked by long pin
- Do only operate LEDs with a current source

### Soldering:

- Do avoid overheating of the LED
- Do avoid electrostatic discharge (ESD)
- Do avoid mechanical stress, shock, and vibration
- Do only use non-corrosive flux
- Do only cut the leads at room temperature with an ESD protected tool
- Do not solder closer than 3 mm from base of the header
- Do form leads prior to soldering
- Do not impose mechanical stress on the header when forming the leads
- Do not apply current to the LED until it has cooled down to room temperature after soldering

### Static Electricity:

LEDs are **sensitive to electrostatic discharge (ESD)**. Precautions against ESD must be taken when handling or operating these LEDs. Surge voltage or electrostatic discharge can result in complete failure of the device.

