



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

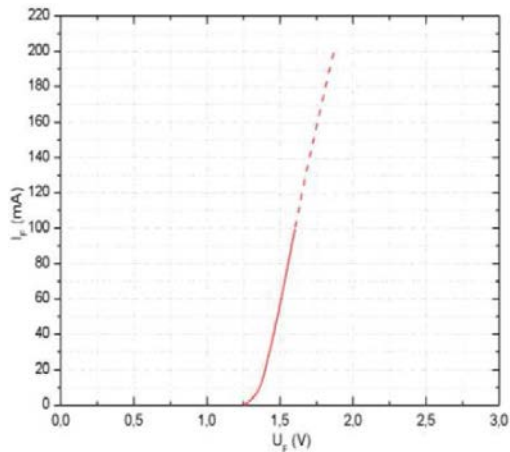
Parameter	Symbol	Conditions	Values			Unit
			Min.	Typ.	Max.	
Peak Wavelength	λ_P	$I_F=20mA$	800	810	820	nm
Spectral Half Width (FWHM)	$\Delta\lambda_{0,5}$	$I_F=20mA$		30		nm
Radiated Power	Φ_E	$I_F=20mA$	6	9		mW
Radiated Power *	Φ_E	$I_F=100mA$	30	45		mW
Radiant Intensity	I_E	$I_F=20mA$	25	35		mW/sr
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	φ	$I_F=100mA$		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

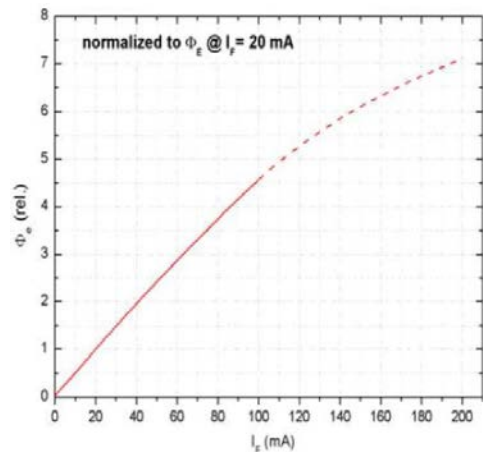


Typical Performance Curves

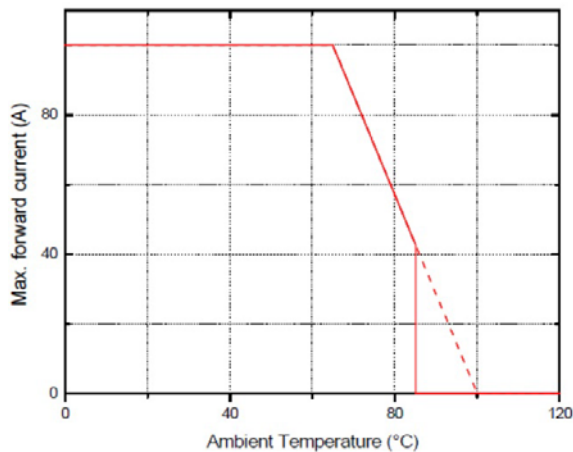
Forward Current vs. Forward Voltage



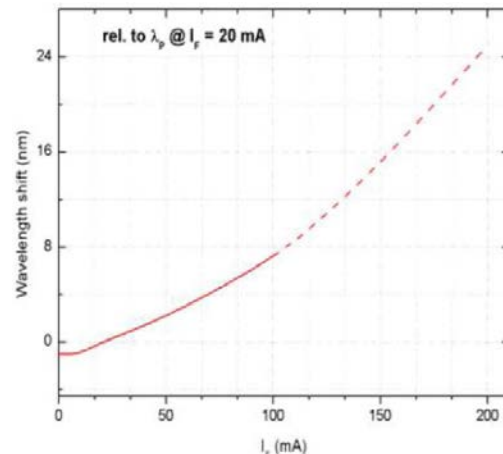
Radiant Power vs. Forward Current



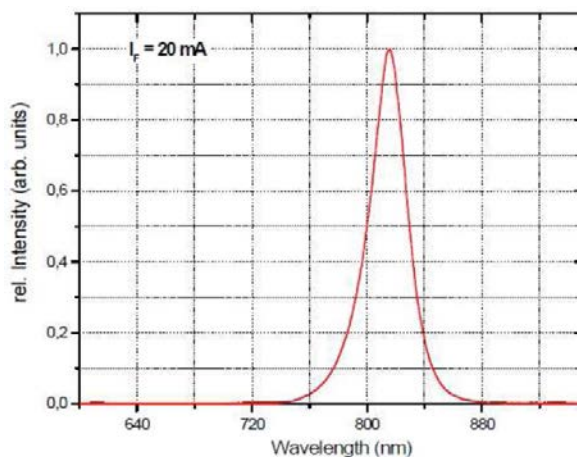
Allowed Forward Current vs. Ambient Temperature



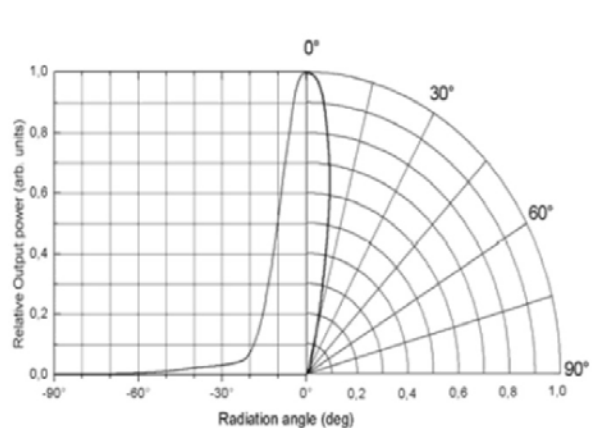
Typical Wavelength Shift vs. Forward Current



Relative Spectral Emission



Radiation Characteristics

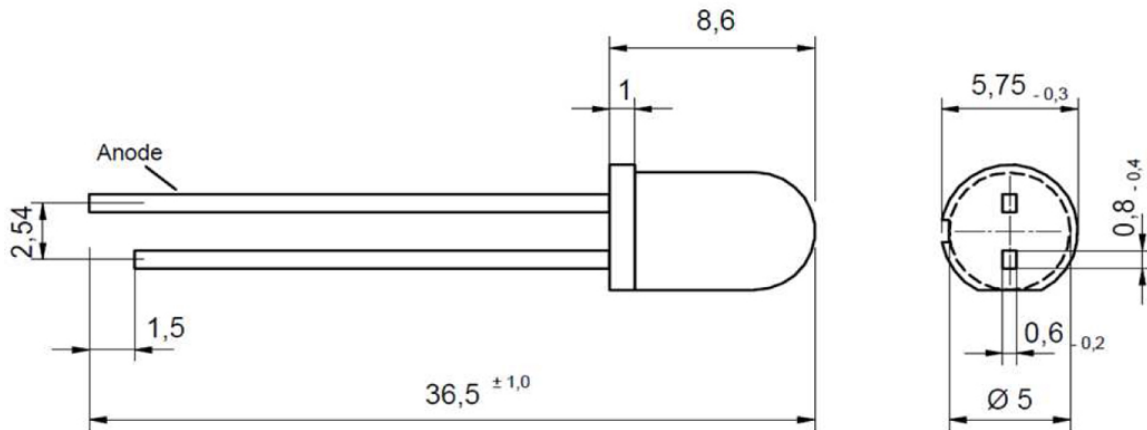




Outline Dimensions

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.

