

# QED422, QED423

## Plastic Infrared Light Emitting Diode

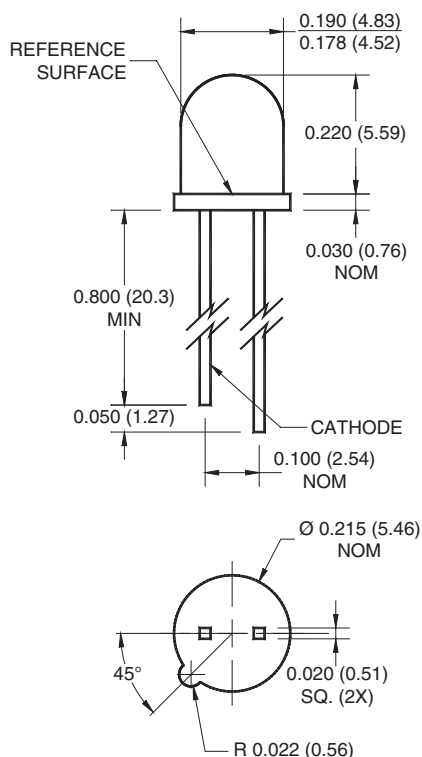
### Features

- $\lambda = 880 \text{ nm}$
- Chip material = AlGaAs
- Package type: Plastic TO-46
- Matched Photosensor: QSD722/723/724
- Medium Wide Emission Angle,  $30^\circ$
- High Output Power
- Package material and color: clear, purple tinted, plastic

### Description

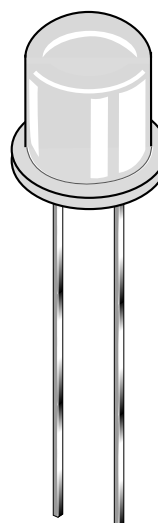
The QED422/423 is an 880 nm AlGaAs LED encapsulated in a clear, purple tinted, plastic TO-46 package.

### Package Dimensions

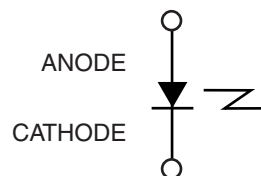


#### NOTES:

1. Dimensions for all drawings are in inches (mm).
2. Tolerance of  $\pm .010$  (.25) on all non-nominal dimensions unless otherwise specified.



### Schematic



**Absolute Maximum Ratings** ( $T_A = 25^\circ\text{C}$  unless otherwise specified)

| Parameter                                       | Symbol      | Rating         | Unit             |
|-------------------------------------------------|-------------|----------------|------------------|
| Operating Temperature                           | $T_{OPR}$   | -40 to + 100   | $^\circ\text{C}$ |
| Storage Temperature                             | $T_{STG}$   | -40 to + 100   | $^\circ\text{C}$ |
| Soldering Temperature (Iron) <sup>(2,3,4)</sup> | $T_{SOL-I}$ | 240 for 5 sec  | $^\circ\text{C}$ |
| Soldering Temperature (Flow) <sup>(2,3)</sup>   | $T_{SOL-F}$ | 260 for 10 sec | $^\circ\text{C}$ |
| Continuous Forward Current                      | $I_F$       | 100            | mA               |
| Reverse Voltage                                 | $V_R$       | 5              | V                |
| Power Dissipation <sup>(1)</sup>                | $P_D$       | 200            | mW               |

**Notes:**

1. Derate power dissipation linearly 2.67 mW/ $^\circ\text{C}$  above  $25^\circ\text{C}$ .
2. RMA flux is recommended.
3. Methanol or isopropyl alcohols are recommended as cleaning agents.
4. Soldering iron 1/16" (1.6 mm) minimum from housing

**Electrical/Optical Characteristics** ( $T_A = 25^\circ\text{C}$ )

| Parameter                | Test Conditions                              | Symbol          | Min | Typ | Max | Units         |
|--------------------------|----------------------------------------------|-----------------|-----|-----|-----|---------------|
| Peak Emission Wavelength | $I_F = 100\text{ mA}$                        | $\lambda_{PE}$  | —   | 880 | —   | nm            |
| Emission Angle           | $I_F = 100\text{ mA}$                        | $2\Theta_{1/2}$ | —   | 30  | —   | Deg.          |
| Forward Voltage          | $I_F = 100\text{ mA}$ , $t_p = 20\text{ ms}$ | $V_F$           | —   | —   | 1.8 | V             |
| Reverse Current          | $V_R = 5\text{ V}$                           | $I_R$           | —   | —   | 10  | $\mu\text{A}$ |
| Radiant Intensity QEC422 | $I_F = 100\text{ mA}$ , $t_p = 20\text{ ms}$ | $I_E$           | 10  | —   | 40  | mW/sr         |
| Radiant Intensity QEC423 | $I_F = 100\text{ mA}$ , $t_p = 20\text{ ms}$ | $I_E$           | 20  | —   | —   | mW/sr         |
| Rise Time                | $I_F = 100\text{ mA}$                        | $t_r$           | —   | 800 | —   | ns            |
| Fall Time                |                                              | $t_f$           | —   | 800 | —   | ns            |

Fig. 1 Normalized Radiant Intensity vs. Forward Current

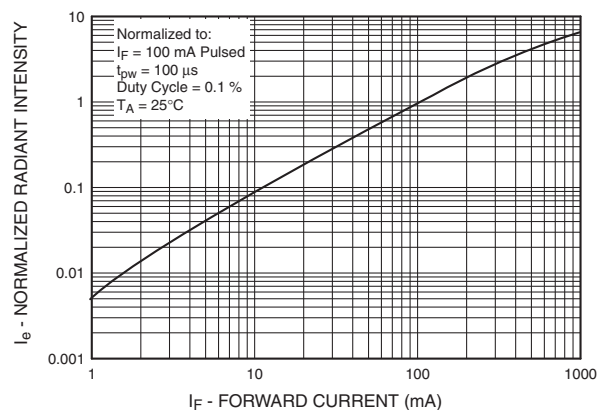


Fig. 2 Forward Voltage vs. Ambient Temperature

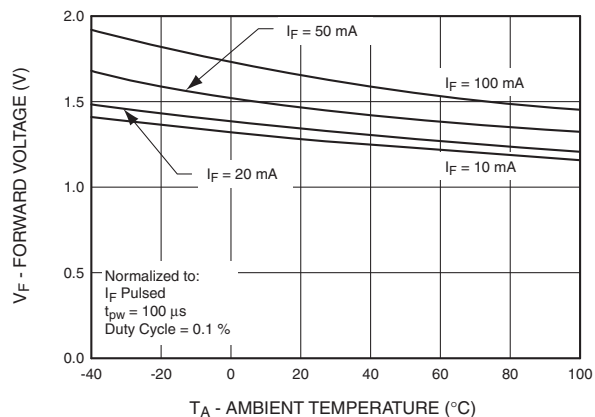


Fig. 3 Normalized Radiant Intensity vs. Wavelength

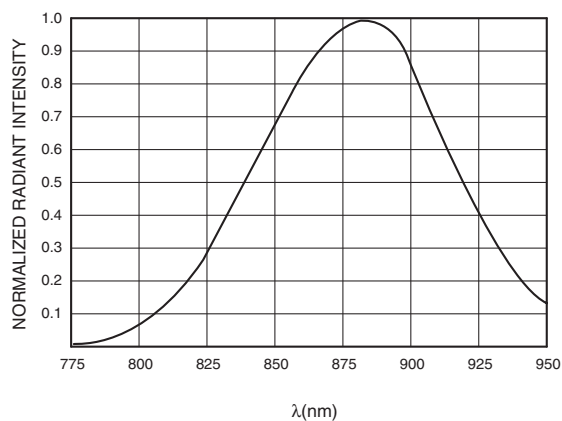
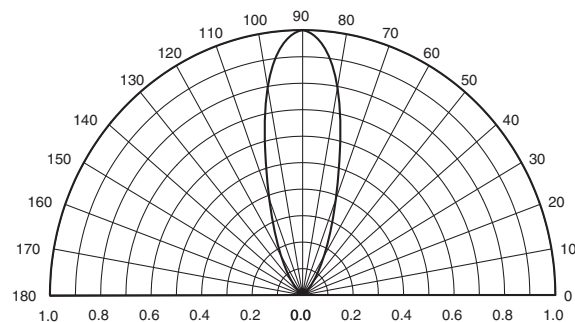


Fig. 4 Radiation Diagram



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