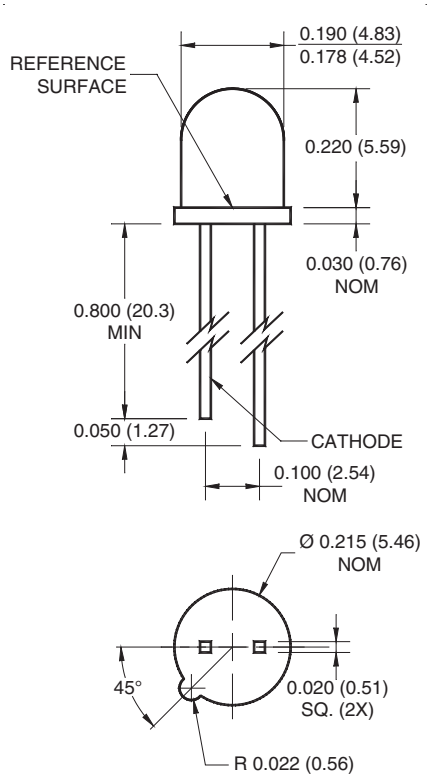
FAIRCHILD
SEMICONDUCTOR®

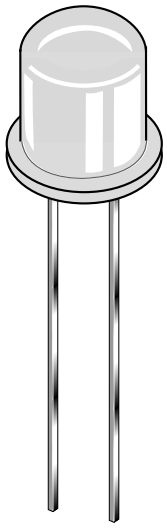
PLASTIC INFRARED LIGHT EMITTING DIODE

QED522 QED523

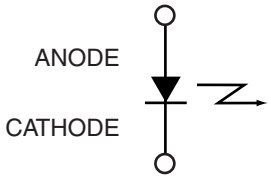
PACKAGE DIMENSIONS



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



SCHEMATIC



DESCRIPTION

The QED522/523 is an 880 nm AlGaAs LED encapsulated in a clear, peach tinted, plastic TO-46 package.

FEATURES

- λ= 880 nm
- Chip material = AlGaAs
- Package type: Plastic TO-46
- Matched Photosensor: QSD722/723/724
- Narrow Emission Angle, 20°
- High Output Power
- Package material and color: clear, peach tinted, plastic

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ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise specified)			
Parameter	**Symbol**	**Rating**	**Unit**
Operating Temperature	T_{OPR}	-40 to + 100	°C
Storage Temperature	T_{STG}	-40 to + 100	°C
Soldering Temperature (Iron)[2,3,4]	T_{SOL-I}	240 for 5 sec	°C
Soldering Temperature (Flow)[2,3]	T_{SOL-F}	260 for 10 sec	°C
Continuous Forward Current	I_F	100	mA
Reverse Voltage	V_R	5	V
Power Dissipation[1]	P_D	200	mW

NOTES:
1. Derate power dissipation linearly 2.67 mW/°C above 25°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°C)						
Parameter	**Test Conditions**	**Symbol**	**Min**	**Typ**	**Max**	**Units**
Peak Emission Wavelength	I_F = 100 mA	λ_{PE}	—	880	—	nm
Emission Angle	I_F = 100 mA	2Θ1/2	—	20	—	Deg.
Forward Voltage	I_F = 100 mA, tp = 20 ms	V_F	—	—	1.8	V
Reverse Current	V_R = 5 V	I_R	—	—	10	µA
Radiant Intensity QEC522	I_F = 100 mA, tp = 20 ms	I_E	20	—	80	mW/sr
Radiant Intensity QEC523	I_F = 100 mA, tp = 20 ms	I_E	40	—	—	mW/sr
Rise Time	I_F = 100 mA	t_r	—	800	—	ns
Fall Time		t_f	—	800	—	ns

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Fig. 1 Normalized Radiant Intensity vs. Forward Current

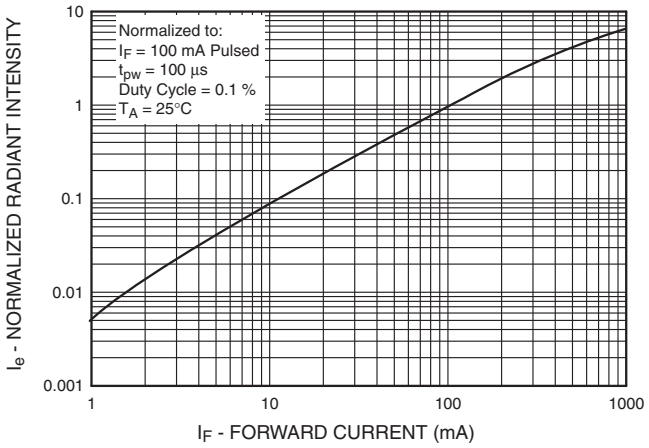


Fig. 2 Forward Voltage vs. Ambient Temperature

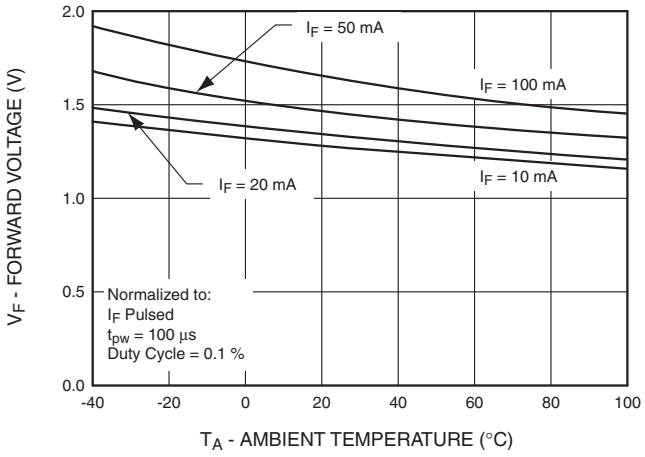


Fig. 3 Normalized Radiant Intensity vs. Wavelength

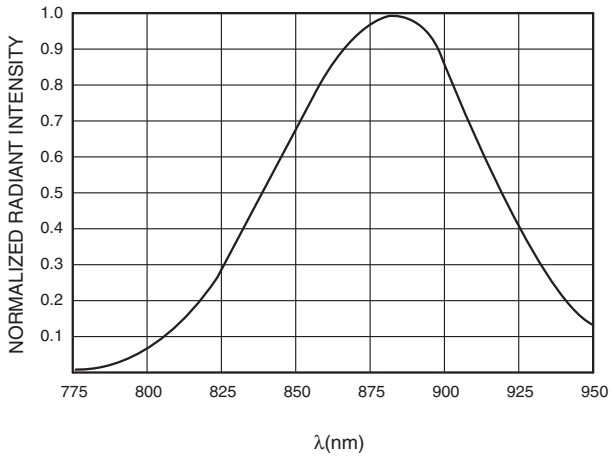
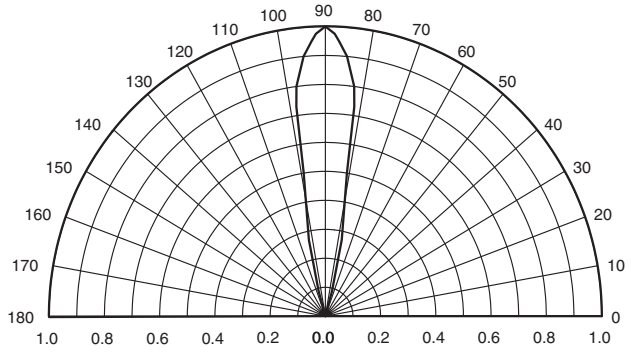


Fig. 4 Radiation Diagram



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2. A critical component in any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.