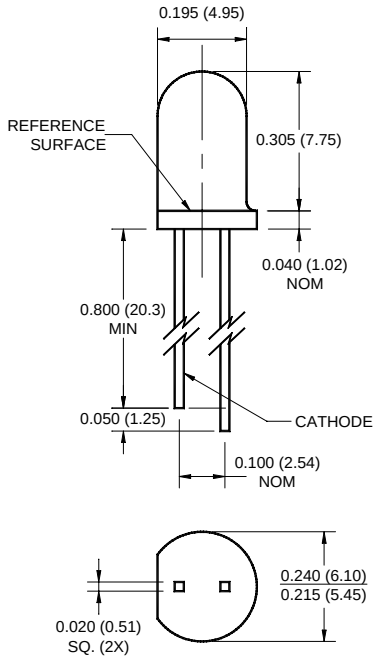
Jameco Part Number 787659

FAIRCHILD
SEMICONDUCTOR®

PLASTIC INFRARED LIGHT EMITTING DIODE

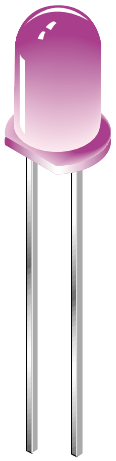
QED221 QED222 QED223

PACKAGE DIMENSIONS

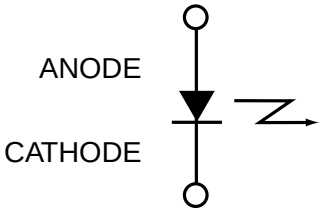


NOTES:

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 QED22X is an 880nm AlGaAs LED encapsulated in clear, purple tinted, plastic T-1 3/4 package.

FEATURES

- λ= 880 nm
- Chip material = AlGaAs
- Package type: T-1 3/4 (5mm lens diameter)
- Matched Photosensor: QSD122/123/124
- Medium Wide Emission Angle, 40°
- High Output Power
- Package material and color: Clear, purple tinted, plastic

PLASTIC INFRARED LIGHT EMITTING DIODE

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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
Peak Forward Current (5)	$I_{F(Peak)}$	1.5	A

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	θ	—	±20	—	Deg.
Forward Voltage	I_F = 100 mA, tp = 20 ms	V_F	—	—	1.7	V
Reverse Current	V_R = 5 V	I_R	—	—	10	µA
Radiant Intensity QED221	I_F = 100 mA, tp = 20 ms	I_E	10	—	20	mW/sr
Radiant Intensity QED222	I_F = 100 mA, tp = 20 ms	I_E	16	—	32	mW/sr
Radiant Intensity QED223	I_F = 100 mA, tp = 20 ms	I_E	25	—	—	mW/sr
Rise Time	I_F = 100 mA	t_r	—	800	—	ns
Fall Time		t_f	—	800	—	ns

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" (1.6mm) minimum from housing.
5. Pulse conditions; tp = 100 µS, T = 10 ms.

Fig. 1 Normalized Radiant Intensity vs. Input Current

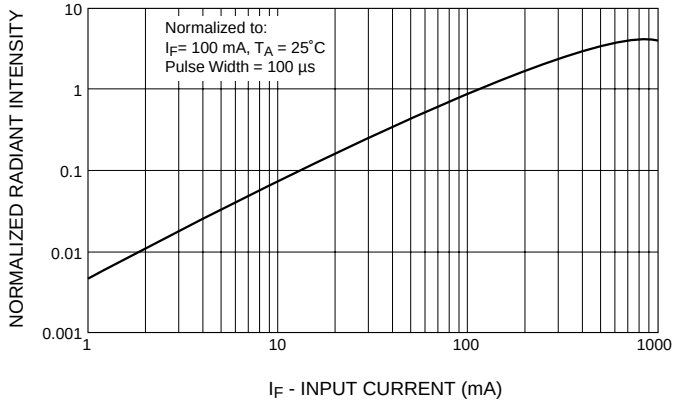


Fig. 2 Coupling Characteristics of QED22X with QSD12X

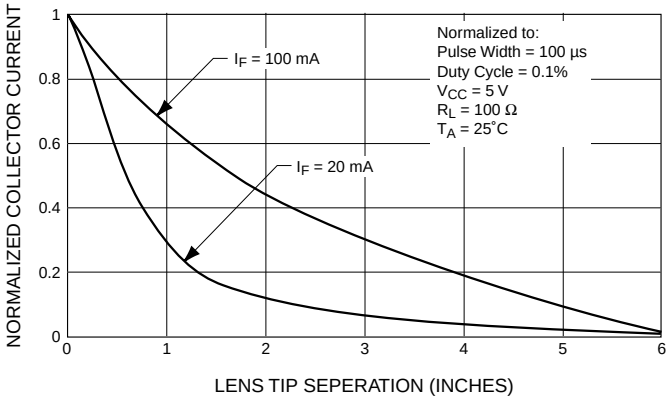


Fig. 3 Forward Voltage vs. Temperature

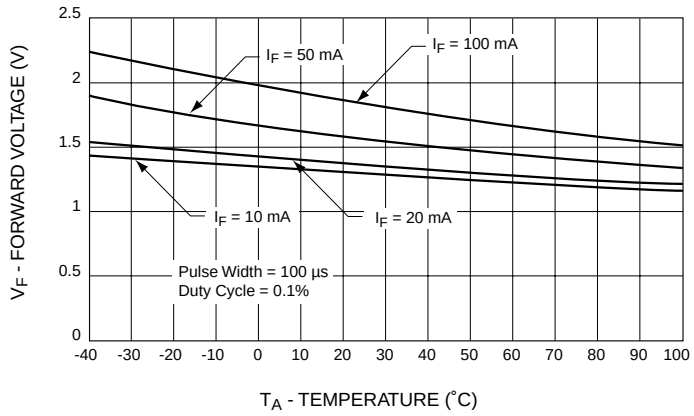


Fig. 4 Normalized Radiant Intensity vs. Wavelength

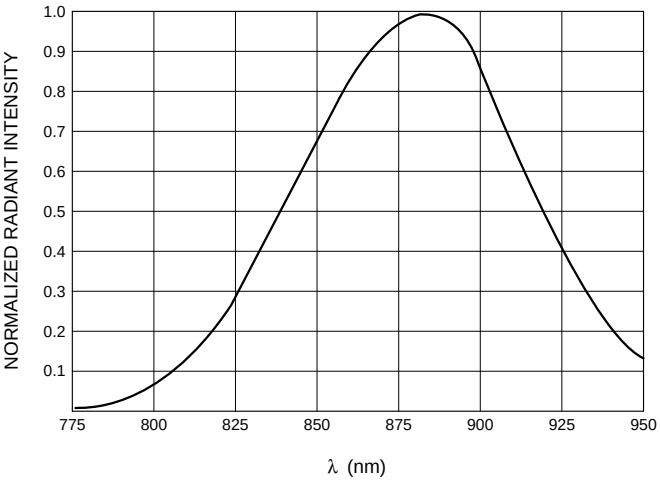


Fig. 5 Forward Current vs. Forward Voltage

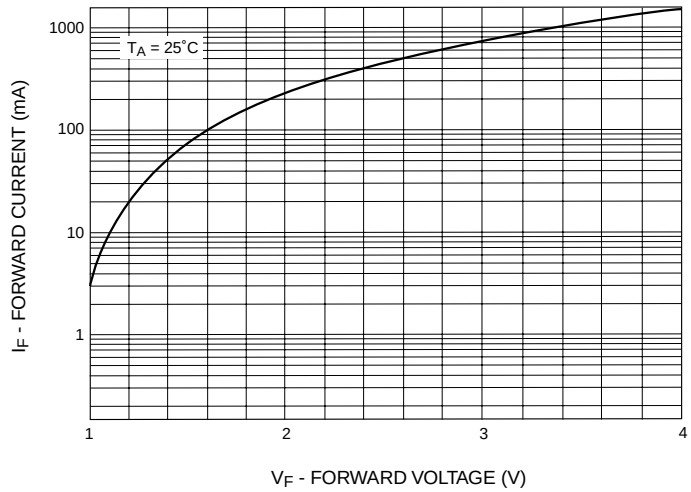
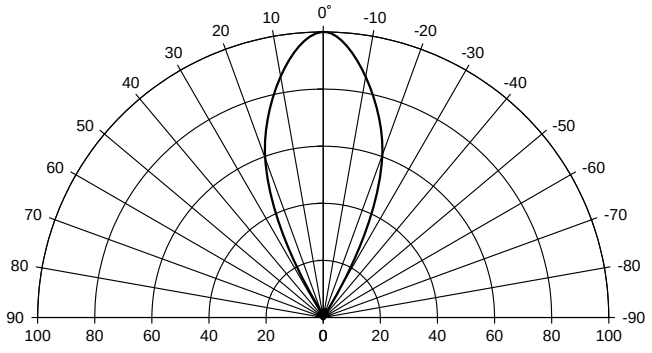


Fig. 6 Radiation Pattern



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