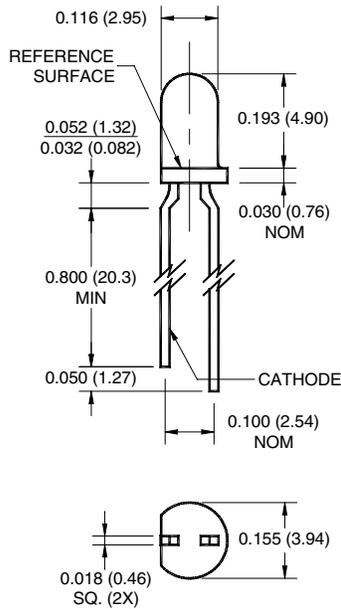


QEC121

QEC122

QEC123

PACKAGE DIMENSIONS

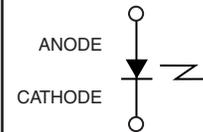


NOTES:

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



SCHEMATIC



DESCRIPTION

The QEC12X is an 880 nm AlGaAs LED encapsulated in a clear purple tinted, plastic T-1 package.

FEATURES

- $\lambda = 880 \text{ nm}$
- Chip material = AlGaAs
- Package type: T-1 (3mm lens diameter)
- Matched Photosensor: QSC112/113/114
- Narrow Emission Angle, 16°
- High Output Power
- Package material and color: Clear, purple tinted, plastic

QEC121

QEC122

QEC123

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) ^(2,3,4)	$T_{\text{SOL-I}}$	240 for 5 sec	$^\circ\text{C}$
Soldering Temperature (Flow) ^(2,3)	$T_{\text{SOL-F}}$	260 for 10 sec	$^\circ\text{C}$
Continuous Forward Current	I_F	50	mA
Reverse Voltage	V_R	5	V
Power Dissipation ⁽¹⁾	P_D	100	mW

NOTES

1. Derate power dissipation linearly 1.33 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" (1.6mm) minimum from housing.

ELECTRICAL / OPTICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$)						
PARAMETER	TEST CONDITIONS	SYMBOL	MIN	TYP	MAX	UNITS
Peak Emission Wavelength	$I_F = 100 \text{ mA}$	λ_{PE}	—	880	—	nm
Emission Angle	$I_F = 100 \text{ mA}$	$2\theta_{1/2}$	—	16	—	Deg.
Forward Voltage	$I_F = 100 \text{ mA}$, $t_p = 20 \text{ ms}$	V_F	—	—	1.7	V
Reverse Current	$V_R = 5 \text{ V}$	I_R	—	—	10	μA
Radiant IntensityQEC121	$I_F = 100 \text{ mA}$, $t_p = 20 \text{ ms}$	I_E	14	—	—	mW/sr
Radiant IntensityQEC122	$I_F = 100 \text{ mA}$, $t_p = 20 \text{ ms}$	I_E	27	—	94	mW/sr
Radiant IntensityQEC123	$I_F = 100 \text{ mA}$, $t_p = 20 \text{ ms}$	I_E	39	—	—	mW/sr
Rise Time	$I_F = 100 \text{ mA}$	t_r	—	800	—	ns
Fall Time		t_f	—	800	—	ns

QEC121

QEC122

QEC123

Fig.1 Normalized Radiant Intensity vs. Forward Current

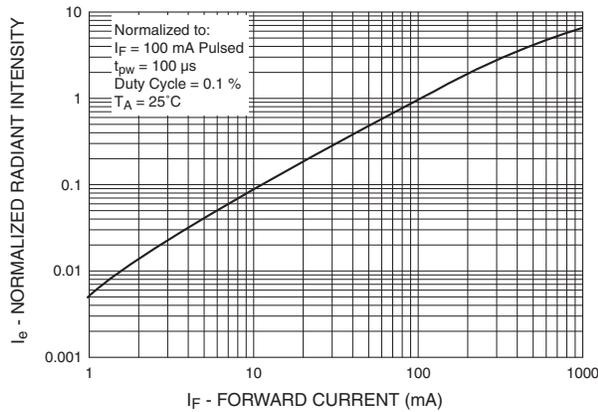


Fig.2 Coupling Characteristics of QEC12X And QSC11X

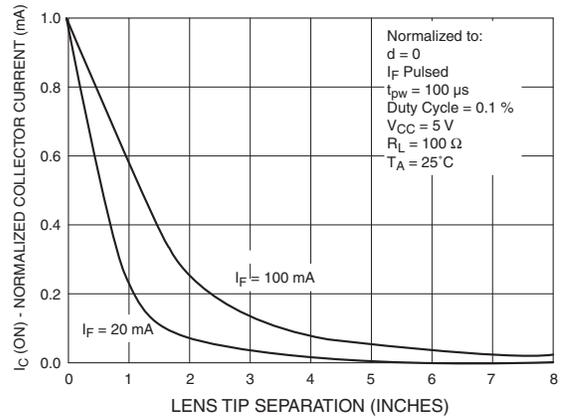


Fig.3 Forward Voltage vs. Ambient Temperature

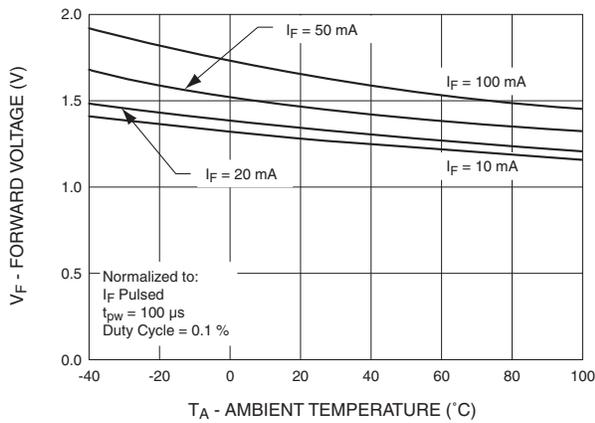


Fig. 4 Normalized Radiant Intensity vs. Wavelength

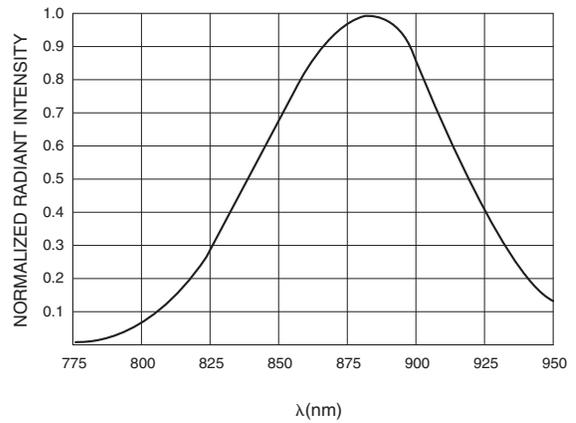
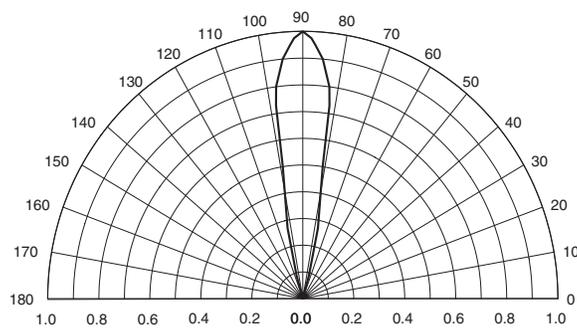


Fig. 5 Radiation Diagram



QEC121

QEC122

QEC123

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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.