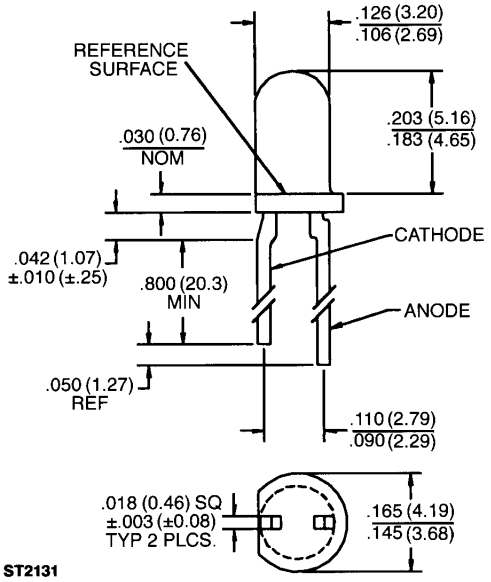
OPTOELECTRONICS

AlGaAs INFRARED EMITTING DIODE

QEC121/122

PACKAGE DIMENSIONS



ST2131

NOTES:
1. DIMENSIONS ARE IN INCHES (mm).
2. TOLERANCE IS ±.010 (.25) UNLESS OTHERWISE SPECIFIED.
3. FLAT DENOTES CATHODE.

DESCRIPTION

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

FEATURES

- Tight production E_e distribution.
- Steel lead frames for improved reliability in solder mounting.
- Good optical-to-mechanical alignment.
- Narrow emission angle.
- Mechanically and wavelength matched to QSC11X series phototransistor.
- Plastic package color allows easy recognition from phototransistor.
- High irradiance level.

QT OPTOELECTRONICS

AlGaAs INFRARED EMITTING DIODE

ABSOLUTE MAXIMUM RATINGS (T_A = 25°C Unless Otherwise Specified)

Storage Temperature	−40°C to + 100°C
Operating Temperature	−40°C to + 100°C
Soldering:	
Lead Temperature (Iron)	240°C for 5 sec. [2,3,4,5]
Lead Temperature (Flow)	260°C for 10 sec. [2,3,5]
Continuous Forward Current	50 mA
Reverse Voltage	5.0 Volts
Power Dissipation	100 mW[1]

ELECTRICAL CHARACTERISTICS (T_A = 25°C Unless Otherwise Specified)
(All measurements made under pulse conditions.)

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNITS	TEST CONDITIONS
Forward Voltage	V_F	—		1.70	V	I_F = 20 mA
Reverse Leakage Current	I_R	—		10	μA	V_R = 5.0 V
Peak Emission Wavelength	λ_P	—	880	—	nm	I_F = 20 mA
Emission Angle at ½ Power	θ	—	±8	—	Degrees	
Radiant Incidence QEC121	E_e	0.07		—	mW/10° Cone	I_F = 20 mA[6,7]
Radiant Incidence QEC122	E_e	0.13		0.45	mW/10° Cone	I_F = 20 mA[6,7]

NOTES

1. *Derate power dissipation linearly 1.33 mW/°C above 25°C.*
2. *RMA flux is recommended.*
3. *Methanol or Isopranol alcohols are recommended as cleaning agents.*
4. *Soldering iron tip 1/16" (1.6 mm) minimum from housing.*
5. *As long as leads are not under any stress or spring tension.*
6. *Measurement is taken at the end of a single 100 μsec pulse.*
7. *E_e is a measurement of the average apertured radiant energy incident upon a sensing area 0.444" (11.3 mm) in diameter, perpendicular to and centered on the mechanical axis of the lens, and 2.54" (64.4 mm) from the measurement surface. E_e is not necessarily uniform within the measurement area.*

QT OPTOELECTRONICS

AlGaAs INFRARED EMITTING DIODE

ABSOLUTE MAXIMUM RATINGS (T_A = 25°C Unless Otherwise Specified)

Storage Temperature	−40°C to + 100°C
Operating Temperature	−40°C to + 100°C
Soldering:	
Lead Temperature (Iron)	240°C for 5 sec. [2,3,4,5]
Lead Temperature (Flow)	260°C for 10 sec. [2,3,5]
Continuous Forward Current	50 mA
Reverse Voltage	5.0 Volts
Power Dissipation	100 mW[1]

ELECTRICAL CHARACTERISTICS (T_A = 25°C Unless Otherwise Specified)
(All measurements made under pulse conditions.)

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNITS	TEST CONDITIONS
Forward Voltage	V_F	—		1.70	V	I_F = 20 mA
Reverse Leakage Current	I_R	—		10	μA	V_R = 5.0 V
Peak Emission Wavelength	λ_P	—	880	—	nm	I_F = 20 mA
Emission Angle at ½ Power	θ	—	±8	—	Degrees	
Radiant Incidence QEC121	E_e	0.07		—	mW/10° Cone	I_F = 20 mA[6,7]
Radiant Incidence QEC122	E_e	0.13		0.45	mW/10° Cone	I_F = 20 mA[6,7]

NOTES

1. *Derate power dissipation linearly 1.33 mW/°C above 25°C.*
2. *RMA flux is recommended.*
3. *Methanol or Isopranol alcohols are recommended as cleaning agents.*
4. *Soldering iron tip 1/16" (1.6 mm) minimum from housing.*
5. *As long as leads are not under any stress or spring tension.*
6. *Measurement is taken at the end of a single 100 μsec pulse.*
7. *E_e is a measurement of the average apertured radiant energy incident upon a sensing area 0.444" (11.3 mm) in diameter, perpendicular to and centered on the mechanical axis of the lens, and 2.54" (64.4 mm) from the measurement surface. E_e is not necessarily uniform within the measurement area.*

OPTOELECTRONICS

AlGaAs INFRARED EMITTING DIODE

ABSOLUTE MAXIMUM RATINGS (T_A = 25°C Unless Otherwise Specified)

Storage Temperature	−40°C to + 100°C
Operating Temperature	−40°C to + 100°C
Soldering:	
Lead Temperature (Iron)	240°C for 5 sec. [2,3,4,5]
Lead Temperature (Flow)	260°C for 10 sec. [2,3,5]
Continuous Forward Current	100 mA
Reverse Voltage	5.0 Volts
Power Dissipation	200 mW[1]

ELECTRICAL CHARACTERISTICS (T_A = 25°C Unless Otherwise Specified)
(All measurements made under pulse conditions.)

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNITS	TEST CONDITIONS
Forward Voltage	V_F	—		1.70	V	I_F = 20 mA
Reverse Leakage Current	I_R	—		10	μA	V_R = 5.0 V
Peak Emission Wavelength	λ_P	—	880	—	nm	I_F = 20 mA
Emission Angle at ½ Power	θ	—	±9	—	Degrees	
Radiant Incidence QED121	E_e	0.08		—	mW/10° Cone	I_F = 20 mA[6,7]
Radiant Incidence QED122	E_e	0.16		0.56	mW/10° Cone	I_F = 20 mA[6,7]
Radiant Incidence QED123	E_e	0.24		—	mW/10° Cone	I_F = 20 mA[6,7]

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 tip 1/16" (1.6 mm) minimum from housing.*
5. *As long as leads are not under any stress or spring tension.*
6. *Measurement is taken at the end of a single 100 μsec pulse.*
7. *E_e is a measurement of the average apertured radiant energy incident upon a sensing area 0.444" (11.3 mm) in diameter, perpendicular to and centered on the mechanical axis of the lens, and 2.54" (64.4 mm) from the measurement surface. E_e is not necessarily uniform within the measurement area.*