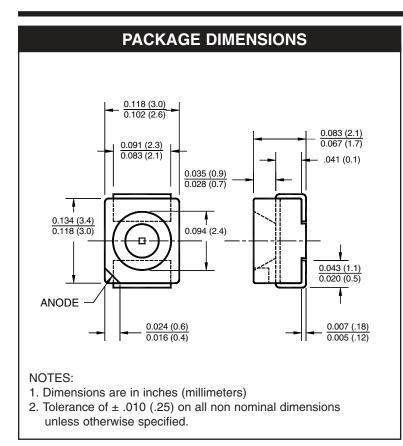
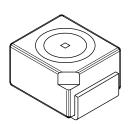
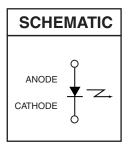


SURFACE MOUNT INFRARED LIGHT EMITTING DIODE

QEB441







DESCRIPTION

The QEB441 is a 730 nm AlGaAs LED encapsulated in a PLCC-2 package.

FEATURES

- λ= 730 nm
- Chip Material: AlGaAs double heterojunction
- Surface Mount PLCC-2 package
- \bullet Wide Emission Angle, 120°
- High Power
- Tape and Reel option: .TR



SURFACE MOUNT INFRARED LIGHT EMITTING DIODE

SEMICONDUCTOR®

QEB441

| ABSOLUTE MAXIMUM RATINGS (T _A = 25°C unless otherwise specified) | | | | | | | |
|--|------------------|----------------|------|--|--|--|--|
| Parameter | Symbol | Rating | Unit | | | | |
| Operating Temperature | T _{OPR} | -55 to +100 | °C | | | | |
| Storage Temperature | T _{STG} | -55 to +100 | °C | | | | |
| Soldering Temperature (Flow) ^(2,3) | T _{SOL} | 260 for 10 sec | °C | | | | |
| Continuous Forward Current | I _F | 100 | mA | | | | |
| Peak Forward Current ⁽⁴⁾ | I _{FP} | 1 | A | | | | |
| Reverse Voltage | V _R | 5 | V | | | | |
| Power Dissipation ⁽¹⁾ | PD | 180 | mW | | | | |

NOTES

1. Derate power dissipation linearly TBD mW/°C above 25°C.

2. RMA flux is recommended.

3. Methanol or isopropyl alcohols are recommended as cleaning agents.

4. Pulse conditions: tp = 100 μ s, T = 10 ms.

| ELECTRICAL / OPTICAL CHARACTERISTICS (TA =25°C) | | | | | | | | |
|---|--|--------------------------------|------|------|------|-------|--|--|
| PARAMETER | TEST CONDITIONS | SYMBOL | MIN. | TYP. | MAX. | UNITS | | |
| Forward Voltage | $I_{\rm F} = 10 {\rm mA}, {\rm tp} = 20 {\rm ms}$ | | — | _ | 2.0 | V | | |
| | $I_{\rm F} = 100 \text{ mA}, \text{ tp} = 20 \text{ ms}$ | | _ | 2.1 | _ | | | |
| | $I_{F} = 500 \text{ mA}, \text{ tp} = 1 \text{ ms}$ | | — | 3.9 | 4.5 | | | |
| | $I_{F} = 1A, tp = 100 \ \mu s$ | | — | 5.5 | — | | | |
| Emission Angle | I _F = 100 mA | 201/ ₂ | — | 120 | — | % | | |
| Reverse Leakage Current V _R = 5 V | | I _R | — | | 10 | μA | | |
| Peak Emission Wavelength | I _F = 100 mA | λ_{P} | 710 | 730 | 750 | nm | | |
| Spectral Bandwidth | I _F = 100 mA | $\Delta\lambda$ | — | 25 | — | nm | | |
| Radiant Intensity | $I_{F} = 100 \text{ mA}, \text{ tp} = 20 \text{ ms}$ | | 2 | 3 | 6 | mW/sr | | |
| | I _F = 500 mA, tp = 1 ms | le | 9 | 14 | 28 | | | |
| | $I_{\rm F} = 1$ A, tp = 100 μ s | | 16 | 24 | 48 | | | |
| Response Time | $I_{\rm F} = 10$ mA, tp = 100 μ s, T = 10 ms | t _{r,} t _f | | _ | 100 | ns | | |



SURFACE MOUNT INFRARED LIGHT EMITTING DIODE

QEB441

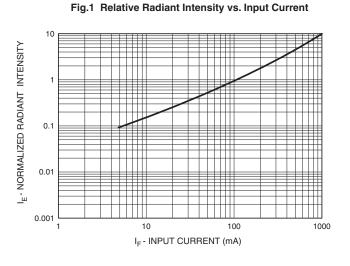


Fig.3 Radiation Diagram

0.0

0.2

0.4 0.6 0.8

10

80

90

1.0

10

-50

0.8

0.6 0.4 0.2

-60

-70

-80

-90

1.0

Fig.2 Forward Current vs. Forward Voltage

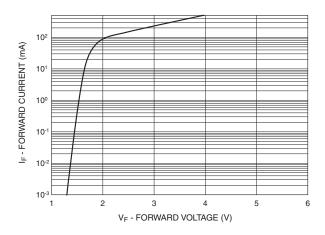


Fig.4 Forward Voltage vs. Ambient Temperature

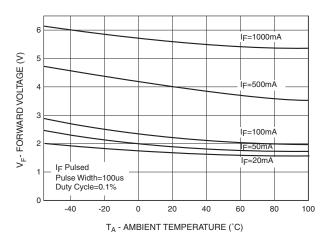
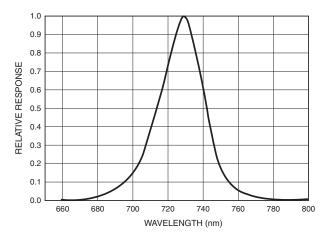


Fig.5 Spectral Response





SEMICONDUCTOR®

SURFACE MOUNT INFRARED LIGHT EMITTING DIODE

QEB441

DISCLAIMER

FAIRCHILD SEMICONDUCTOR RESERVES THE RIGHT TO MAKE CHANGES WITHOUT FURTHER NOTICE TO ANY PRODUCTS HEREIN TO IMPROVE RELIABILITY, FUNCTION OR DESIGN. FAIRCHILD DOES NOT ASSUME ANY LIABILITY ARISING OUT OF THE APPLICATION OR USE OF ANY PRODUCT OR CIRCUIT DESCRIBED HEREIN; NEITHER DOES IT CONVEY ANY LICENSE UNDER ITS PATENT RIGHTS, NOR THE RIGHTS OF OTHERS.

LIFE SUPPORT POLICY

FAIRCHILD'S PRODUCTS ARE NOT AUTHORIZED FOR USE AS CRITICAL COMPONENTS IN LIFE SUPPORT DEVICES OR SYSTEMS WITHOUT THE EXPRESS WRITTEN APPROVAL OF THE PRESIDENT OF FAIRCHILD SEMICONDUCTOR CORPORATION. As used herein:

- Life support devices or systems are devices or systems which, (a) are intended for surgical implant into the body,or (b) support or sustain life, and (c) whose failure to perform when properly used in accordance with instructions for use provided in labeling, can be reasonably expected to result in a significant injury of the user.
- 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.