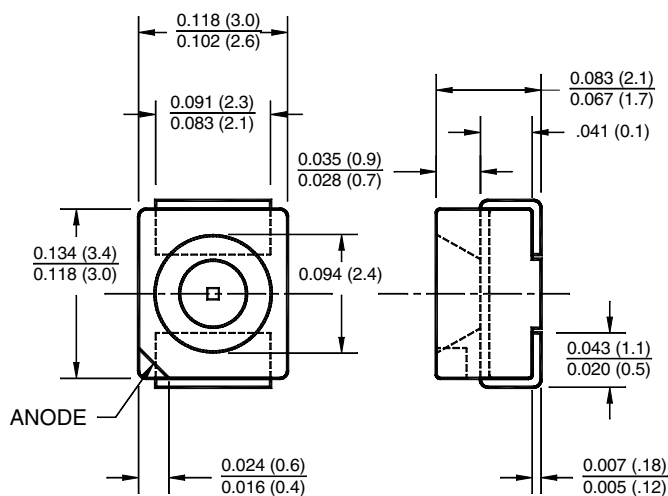
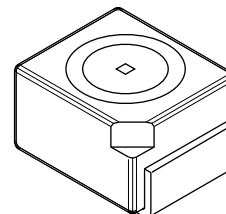


PACKAGE DIMENSIONS

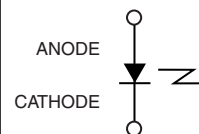


NOTES:

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



SCHEMATIC



DESCRIPTION

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

FEATURES

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

ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Rating	Unit
Operating Temperature	T_{OPR}	-55 to +100	$^\circ\text{C}$
Storage Temperature	T_{STG}	-55 to +100	$^\circ\text{C}$
Soldering Temperature (Flow) ^(2,3)	T_{SOL}	260 for 10 sec	$^\circ\text{C}$
Continuous Forward Current	I_F	100	mA
Peak Forward Current ⁽⁴⁾	I_{FP}	1	A
Reverse Voltage	V_R	5	V
Power Dissipation ⁽¹⁾	P_D	180	mW

NOTES

1. Derate power dissipation linearly TBD mW/ $^\circ\text{C}$ above 25°C .
2. RMA flux is recommended.
3. Methanol or isopropyl alcohols are recommended as cleaning agents.
4. Pulse conditions: $t_p = 100 \mu\text{s}$, $T = 10 \text{ ms}$.

ELECTRICAL / OPTICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$)

PARAMETER	TEST CONDITIONS	SYMBOL	MIN.	TYP.	MAX.	UNITS
Forward Voltage	$I_F = 10 \text{ mA}$, $t_p = 20 \text{ ms}$	V_F	—	—	2.0	V
	$I_F = 100 \text{ mA}$, $t_p = 20 \text{ ms}$		—	2.1	—	
	$I_F = 500 \text{ mA}$, $t_p = 1 \text{ ms}$		—	3.9	4.5	
	$I_F = 1 \text{ A}$, $t_p = 100 \mu\text{s}$		—	5.5	—	
Emission Angle	$I_F = 100 \text{ mA}$	$2\theta_{1/2}$	—	120	—	%
Reverse Leakage Current	$V_R = 5 \text{ V}$	I_R	—	—	10	μA
Peak Emission Wavelength	$I_F = 100 \text{ mA}$	λ_P	710	730	750	nm
Spectral Bandwidth	$I_F = 100 \text{ mA}$	$\Delta\lambda$	—	25	—	nm
Radiant Intensity	$I_F = 100 \text{ mA}$, $t_p = 20 \text{ ms}$	I_e	2	3	6	mW/sr
	$I_F = 500 \text{ mA}$, $t_p = 1 \text{ ms}$		9	14	28	
	$I_F = 1 \text{ A}$, $t_p = 100 \mu\text{s}$		16	24	48	
Response Time	$I_F = 10 \text{ mA}$, $t_p = 100 \mu\text{s}$, $T = 10 \text{ ms}$	t_r, t_f	—	—	100	ns

Fig.1 Relative Radiant Intensity vs. Input Current

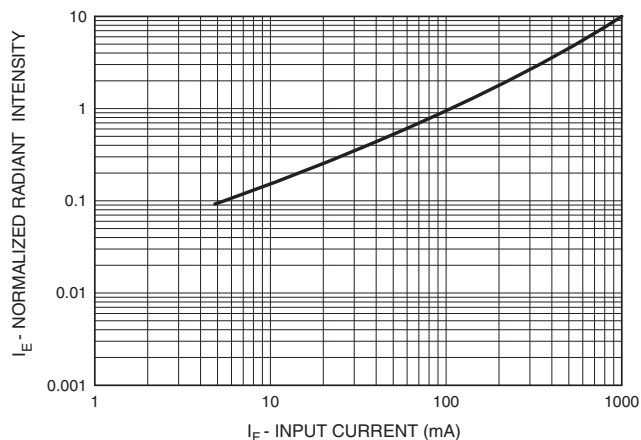


Fig.2 Forward Current vs. Forward Voltage

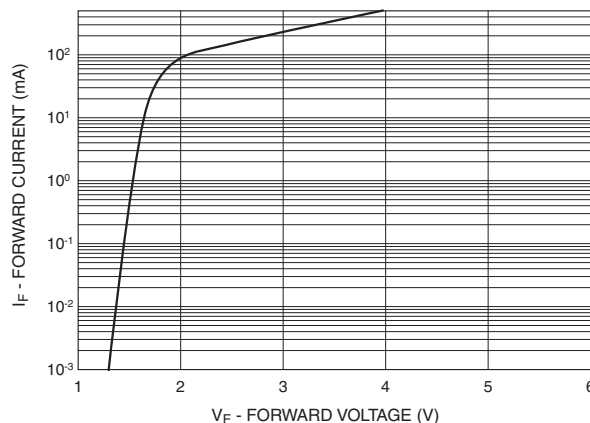


Fig.3 Radiation Diagram

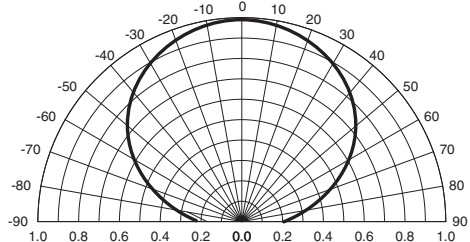


Fig.4 Forward Voltage vs. Ambient Temperature

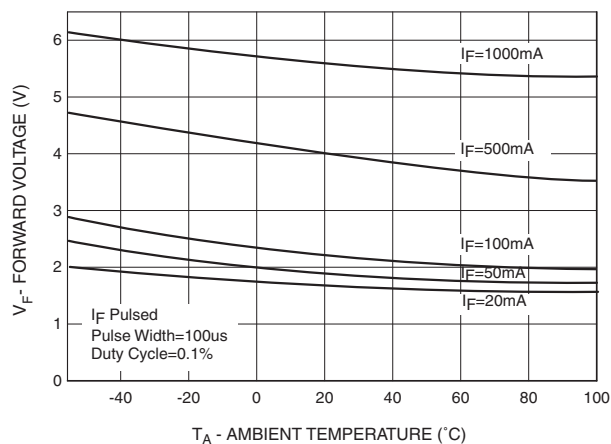
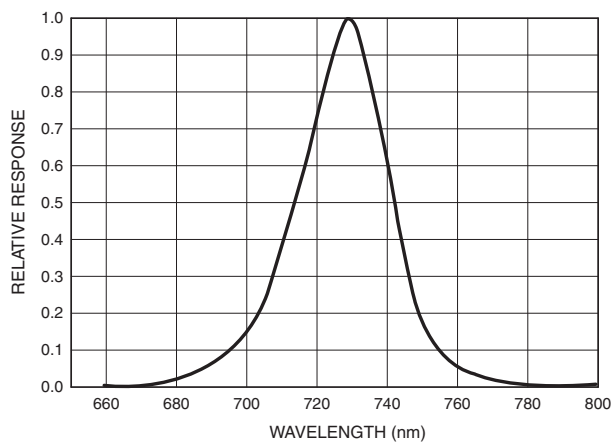


Fig.5 Spectral Response



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:

1. 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.