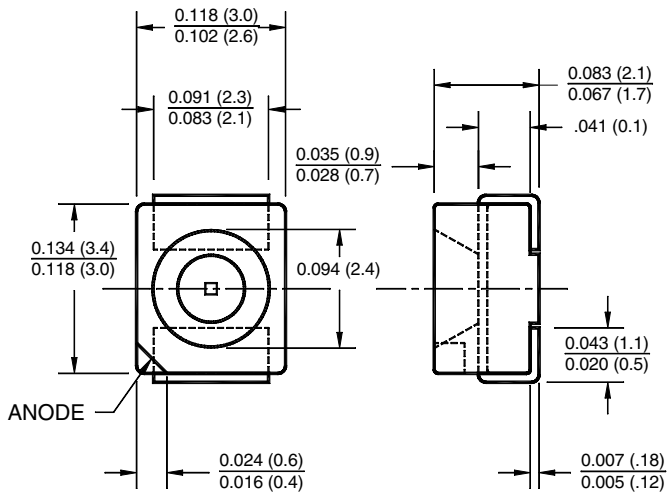
FAIRCHILD
SEMICONDUCTOR®

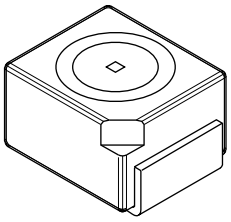
SURFACE MOUNT INFRARED LIGHT EMITTING DIODE

QEB441

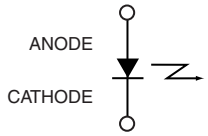
PACKAGE DIMENSIONS



NOTES:
1. Dimensions are in inches (millimeters)
2. Tolerance of ± .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

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

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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)	P_D	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 μs, T = 10 ms.

ELECTRICAL / OPTICAL CHARACTERISTICS (T_A =25°C)

PARAMETER	TEST CONDITIONS	SYMBOL	MIN.	TYP.	MAX.	UNITS
Forward Voltage	I_F = 10 mA, tp = 20 ms	V_F	—	—	2.0	V
	I_F = 100 mA, tp = 20 ms		—	2.1	—	
	I_F = 500 mA, tp = 1 ms		—	3.9	4.5	
	I_F = 1A, tp = 100 μs		—	5.5	—	
Emission Angle	I_F = 100 mA	$2\Theta_{1/2}$	—	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 mA, tp = 20 ms	I_e	2	3	6	mW/sr
	I_F = 500 mA, tp = 1 ms		9	14	28	
	I_F = 1 A, tp = 100 μs		16	24	48	
Response Time	I_F = 10 mA, tp = 100 μs, T = 10 ms	t_r, t_f	—	—	100	ns

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Fig.1 Relative Radiant Intensity vs. Input Current

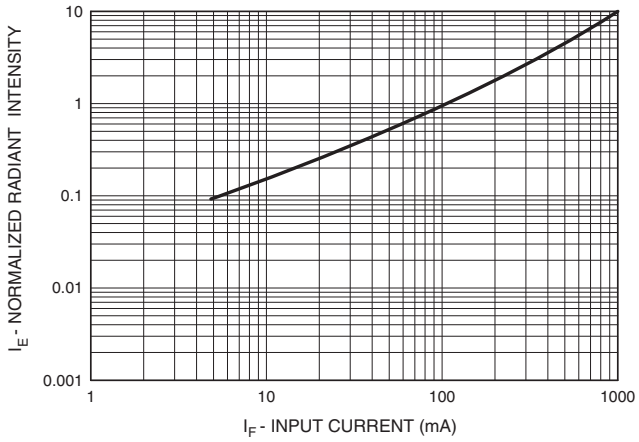


Fig.2 Forward Current vs. Forward Voltage

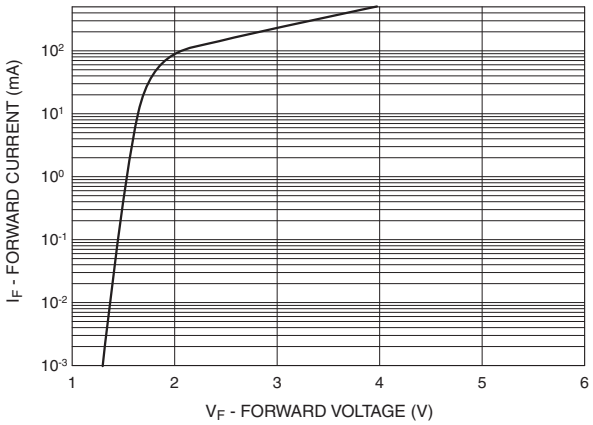


Fig.3 Radiation Diagram

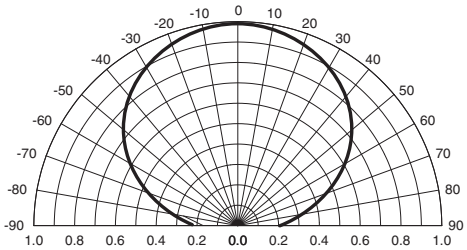


Fig.4 Forward Voltage vs. Ambient Temperature

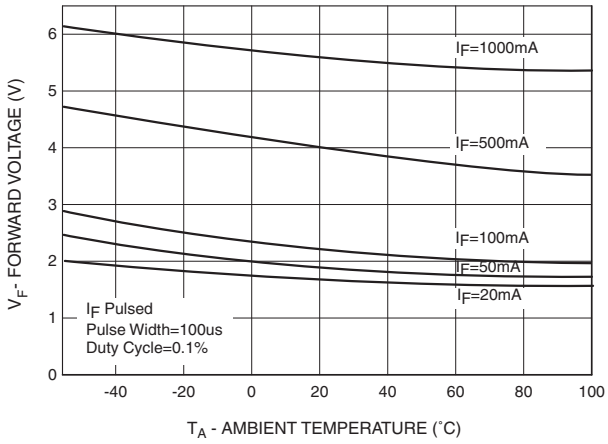
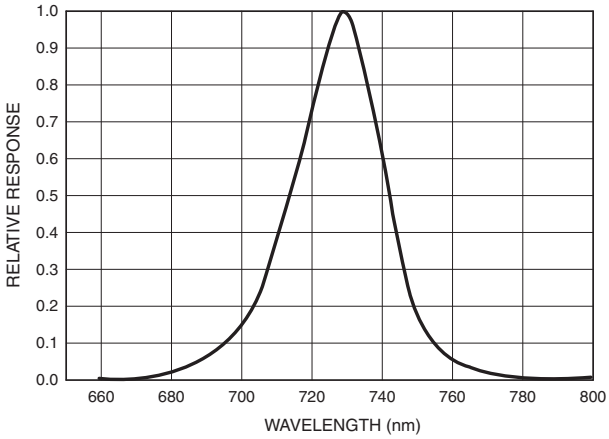


Fig.5 Spectral Response



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